Response to Riccardo Emilio Chesta’s “What Is Critical About the Crisis of Expertise? A review of Gil Eyal’s *The Crisis of Expertise* (2019, Cambridge: Polity Press)”

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My thanks to Riccardo Emilio Chesta. He has written an erudite, probing, yet generous review of my book, raising many important questions and pointing out critical lacunae. Specifically, he has pointed out that I do not pay sufficient attention to the role of the media—and one would certainly add the internet and social media—especially as it serves as an easy target for the “merchants of doubt” (Oreskes & Conway, 2010). Consequently, I perhaps underestimate the extent to which, in Chesta’s words, “in current technologically advanced societies, ignorance has become a much more sophisticated weapon.” He also says, quite rightly, that I provide very little guidance as to what sort of institutions could counter these tendencies and foster a productive trans-scientific debate.

Others have made similar points. They’ve done so enough times for me to be convinced that these criticisms are on the mark. My book is indeed overly focused on expertise as the interface between science and the state, and on the crisis of regulatory science, to the exclusion of other important “engines” of crisis. In my defense, I say simply that I did not set out intending to write a book so focused on regulatory science. The focus imposed itself on me, so to speak, with every news cycle. I also note that this focus, however partial, withstood the most severe test, namely the pandemic. The pandemic has borne out the main thesis of the book. If anybody thought that the role of experts in democratic politics is a sideshow to the more important distributional or ideological politics, the Coronavirus pandemic should have disabused them of this notion. There is hardly a variable currently more predictive of the distinctive fortunes of countries (and thus, of the life chances of millions of people) than the way in which the relations between experts, decision-makers and the public are configured. Where these relations were already in a deep crisis, as I’ve argued about the USA, UK, and the EU, the death toll was catastrophically higher than in

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places such as China, Thailand, and South Korea, where there was no comparable crisis (Eyal, 2021; Au et al., 2021; Hilgartner, 2021). And it is also clear that the institutions of regulatory science were at the heart of the crisis—so much so that a leading public health expert wrote an opinion piece titled: “We need the real CDC back, and we need it now!” (Jha, 2020).

But enough of this “I told you so” tone. I’d like to spend this response talking about what I mean by “engines” of crisis, what other engines there are, and especially about the points Chesta has raised about the media and about ignorance.

The image I used for the crisis was of a “vortex”. The idea behind this imagery is that there are several different “engines” supplying the process with energy, but their vectors point in somewhat different directions such that while they seldom cancel one another, they lock each other into this self-sustaining circular movement. The imagery also means that any of these engines operating by itself would not lead to a protracted crisis. It is their interaction and mutual amplification that drives the process.

What are these engines? Early in the book, I make the observation that the word “expertise” is only necessary for us—and indeed, it is fairly recent in the English language—when we don’t quite know, or we would like to problematize, who the experts are. *The first, most immediately evident, engine of crisis is jurisdictional struggle*, as Andrew Abbott (1988) would say, between different groups of experts all laying claim to the same task. Sometimes, the struggle is between similarly organized groups—let’s say, between physicists and epidemiologists as to whose models should inform pandemic policies—but very often, the struggle brings forth completely new types of expertise: laypersons (Coronavirus “influencers” like Tomas Pueyo, or, more recently, Covid-19 “long haul” patients organized in a research collaborative¹), computers (AI algorithms that assess risk), government agencies, etc. Jurisdictional struggles between these are both causes and symptoms of the swirling vortex.

These jurisdictional struggles erupted into view with special force in the 1970s. They were often ignited by the emergence of new objects of knowledge that comprised the domain of regulatory science—“acceptable risk levels” of pollutants, carcinogenicity, reference daily intake (RDI), climate assessment, vaccination schedule, degree of impairment, “orphan” or contested illnesses, etc. *The expansion of regulatory science is thus a second engine of crisis*. The objects of regulatory science differ from the objects of basic science. They are essentially forecasts, risk estimates extrapolating from past data (however, patchy) into the future. They make this future present, as the basis for regulatory action, by means of “cutoffs,” “thresholds,” “allowable minimums,” etc. Not only there are several alternative methodologies for making the future present (risk assessment, precautionary approach, preparedness, scenario planning, predictive analytics, etc.), thus exacerbating the jurisdictional struggle, but the calculations incorporate legal and economic considerations, estimates of future behavior, etc. Every time that these numbers, which we learned to trust, which have worked themselves into our everyday cosmologies, are discovered to be wrong or are disputed, we become a little bit more skeptical regarding

¹ <https://patientresearchcovid19.com/>

expertise and its forecasts. The CDC in the USA has just instructed elementary schools that they no longer need to observe the rule of 6 feet between persons. Three feet would suffice. The predictable reaction is anger and skepticism. The skeptics wonder aloud what has suddenly changed to make 3 feet safer, and suspect that other considerations—political or economic—are compromising safety. The angry point out that if this instruction was issued earlier their kids could have been in school much longer, and a lot of damage could have been avoided. They too suspect that the experts are playing politics at their expense. The pandemic merely made this dynamic more obvious, but we have seen this before with guidelines for mammograms or prostate exams, with dietary guidelines, with allowable levels of preservatives in vaccines, etc.

Consequently, *a third engine of crisis has to do with the nature of the most important commodity in this whole story, namely trust*. Trust is like the ether of nineteenth century physics: a necessary assumption in all theories, but nobody knows what it is or how to measure it. Trust is not a subjective, explicit attitude that can be measured by a survey, nor is it a “resource” that can be accumulated like social capital. Trust is a category of practice (Bourdieu, 2000). To study trust is to study people’s “ethno-methods” for how they recognize and exhibit that they (or others) are trusting responsibly (Garfinkel, 1963; Mollering, 2006). These methods are a matter of practical sense, and they are especially sensitive to temporal framings. Trust is like music. Duration, sequence, tempo, resonance, and repetition are of the essence. A note, having been struck, shapes a context in which another note can appear as in harmony with it, or as a “false note.” It can continue a melodic line, or it can appear discordant because it is played too fast, too slow, or out of sequence. This is why “warp speed” was a very unfortunate slogan for a campaign whose success crucially depends on building trust.

To maintain trust in the constantly changing regulatory guidelines, cutoffs and forecasts require a delicate set of framing operations. It requires, for example, maintaining a division between backstage and frontstage, and a careful orchestration of the timing and ritual setting of announcing revisions (Hilgartner, 2000). Many things can go wrong. The jurisdictional struggle between specialties, going on in the backstage, can erupt into the front stage. The staff at the “access points” of the expert system (Giddens, 1990) may rebel, because the changes undermine its efforts to secure trust and cooperation from the clients they see every day. Any acceleration of the pace—as imposed by the pandemic or by the churning of social media—can undermine the division between backstage and frontstage (e.g., the facemasks debacle in the USA; Tufekci, 2020). What normally takes place in the background is foregrounded and accelerated, with disastrous consequences in terms of trust.

This is not what the people who invented the term “regulatory science” hoped for. I am drawing here on an excellent paper by David Demortain (2021). The term “regulatory science” was first used in 1976, in a preface to a compendium of FDA annual reports. A few months later, it was also used in a report of the Environmental Protection Agency (EPA). Why did these agencies suddenly need a new term? Because while they were empowered to “regulate,” what they were doing was quite different from what people meant in the USA when they said “regulation.” “Regulation” used to mean economic regulation, anti-trust, making sure that markets are free and fair,

i.e., a form of state action that borrowed its legitimacy from the self-legitimation of the free market. But regulation as practiced by the FDA, EPA, or the Occupational Safety and Health Administration (OSHA) is quite different. It is “social regulation,” developed in response to the demands of the social movements of the 1960s—the environmental movement, the consumer rights movement, the patients’ rights movement, the Women’s movement, anti-psychiatry, etc. The EPA, after all, was created by legislation that these movements demanded. Social regulation is not focused on the functioning of markets, but on things like “clean air” or the “safety and efficacy” of medications. Hence, come the new objects of knowledge, the regulatory cutoffs and guidelines. These, however, cannot be legitimated as simply restoring fairness to the markets. They represent state interventions in the operations of markets, ways in which the “visible hand” of the state can appear to be “picking winners and losers,” redistributing hazards, costs, and damages to some, but not to others. To say, therefore, that what the EPA does is “regulatory science” is to emphasize the “science” part of this compound word, to emphasize that state agencies are merely translating the regulatory goal mandated by the law—“clean air”—into the objective, neutral, scientific measurements, and tests necessary to verify it. So, the term “regulatory science” is born at the intersection of two political forces—the social movements that demand social regulation and the business forces that oppose it—and it codifies a particular strategy for legitimating the state’s expanded role in mediating the clash and assuming responsibility for the redistribution of hazards, costs, benefits, and damages.

This strategy was characterized by neo-Marxist critics of the time as a “scientization of politics” (Habermas, 1970). It did not, however, solve the state’s legitimation problems. On the contrary, it led to a recursive *politicization of science* (Weingart, 2003). Science, or more precisely “regulatory science” and “expertise,” has itself become polluted, infected by the very same problems and suspicions it was called upon to assuage. *The legitimation crisis of state-regulated capitalism* (Habermas, 1973) is a *fourth engine of crisis*. The scientization of politics leads to the politicization of science and the two processes reinforce and entangle one another in an unstable, crisis-prone mixture.

But the social movements that have challenged the authority of experts did so on multiple fronts, not only with regards to regulatory science. They represent another, *fifth engine of crisis*. The phenomenon of lay expertise to which they have given rise—the ACT-UP lay experts (Epstein, 1995), the parents of children with autism (Eyal, 2010), the popular epidemiology of grassroots organizations (Arancibia & Motta, 2019; Brown, 1987)—cannot be comprehended simply as demanding “social regulation.” At one and the same time, they also demand to be free from regulation. Even as their activism expands the jurisdiction of regulatory agencies, they also represent a vast movement of resistance to the pastoral power of experts. Foucault (1982) speaks of the 1960s as a time of great upheaval, akin to the Protestant Reformation, in the sense that one saw multiple struggles all challenging the authority of pastors of various kinds—indeed, the technocrats, social planners, and risk managers involved in social regulation, but also doctors, psychiatrists, sexologists, criminologists, etc. Just as the Catholic priest dispenses grace and salvation to each individual member of the flock, on condition that they accept the priest’s authority as an examiner of

souls, so pastoral power demands voluntary obedience in the name of taking care of the flock, their health, their well-being, their life satisfaction, their security. What the various resistances to pastoral power had in common is that they rejected this power that promised to take care of them. Instead, they valorized practices of the "care of self". The Internet did not invent lay experts or self-advocates. The ideals of self-care, self-nomination, speaking for oneself, being the expert on oneself or on one's children; the perception of pastoral authority as polluting because of the dependency it creates; these long predated the Internet.

What is the role of the media, social media, and the Internet in all this? It should be clear that I do not think they are responsible for the crisis of expertise by themselves. I do not accept the diagnosis that this crisis is "a Google-fueled, Wikipedia-based, blog-sodden collapse of any division between professionals and laypeople" (Nichols, 2017). But it is also true that I did not include their impact in my analysis. So, let me do so now. *The Internet and social media are a sixth engine of crisis*, especially to the extent that they accelerate the pace and break the boundary between backstage and frontstage. Their specific effect is to accelerate and extend other processes that have broken the monopoly of the gatekeepers, those with the power to bestow symbolic capital of recognition (Arnoldi, 2021). Newspaper editors, science journalists, broadcast media, scientific journals, they were the gatekeepers. They had the power to recognize claims to speak in public as expert. In the absence of gatekeepers, public recognition as experts is happening in more diverse forums than the traditional news media and is controlled and granted by more diverse actors than the journalistic profession, such as social media influencers, even celebrities. These developments shape an "acoustical environment" (Crease, 2021) where mistrust can thrive.

And yet, none of this is quite new. The crisis of expertise preceded the rise of the Internet. We need only to remember the intense mistrust with which the report of the National Academies in the USA on what is a healthy diet was greeted (Hilgartner, 2000) or the struggles of the 1970s and 1980s over Laetrile or over experimental treatments for HIV-AIDS (Carpenter, 2010). Perhaps, we are simply more aware of the crisis now, not because it is more severe, but because the sides have changed. In the past, it was lefty environmentalists and gay activists who were questioning and contesting the experts, while conservatives had greater faith in science. Now, the roles have reversed (Gauchat, 2012), but this line dance, in which the partners keep changing places, is itself a symptom of the crisis of expertise.

Moreover, if the Internet and social media were able to weaken the monopoly of the gatekeepers, this did not happen without help from the inside. There had to be a supply-side, so to speak, to match the new forces of demand. Where are laypeople getting all this information with which to challenge the experts? Some comes from conspiracy theorists, cranks, self-appointed "experts," and of course from Russia, but there is also another obvious source—scientists themselves. First of all, the intensification of jurisdictional struggles means that there is always a group of scientists who disagree with whatever is the regulatory consensus formulated by another group. Myanna Lahsen (2013) has shown that a lot of climate skepticism is due to differences in disciplinary training and generational gap between scientists. A similar dynamic is evident now during the pandemic. The jurisdictional struggle has led

many epidemiologists and medical doctors to take contrarian positions against the majority view in public health, most spectacularly in the Great Barrington Declaration.² But perhaps far more influential than public “declarations” is the new practice of disseminating pre-prints and posting them in online “archives” like medRxiv and bioRxiv. The number of Covid-related preprints in these sites rivals the number of peer-reviewed papers published about the same topics. But preprints are not peer-reviewed yet. This means that a large proportion of them are false (Ioannidis, 2005). But they have the credibility of scientists and of the scientific communication system behind them, thus adding to the cacophony in the acoustical environment.

This phenomenon of posting preprints is just the tail end of a longer process that Peter Weingart (2021) characterizes as the mediatization of science, and which has its starting point with concerns about declining trust in science. These worries, articulated in the famous Bodemer Report in the mid-1980s, led to the rise of the new profession of “science communication.” New academic programs in “science communication” were created, along with university public relations offices, staffed by communication and public relations specialists. After their initial patronizing “deficit” model failed (Plough & Krinsky, 1987), they switched to a model more in accordance with the interests and professional worldviews of communication specialists—“public engagement with science and technology” (PEST). On the one hand, this is a positive development. Scientists are encouraged to engage in dialogue with the public, or with publics, which are now taken seriously as capable of making a meaningful contribution. On the other hand, at the hands of public relations specialists, PEST often becomes simply an effort to capture maximum media attention, a public relations orientation to creating “visibility.” TED talks have become the new status symbol among scientists. *This mediatization of science, itself a response to the crisis of trust in experts, and not simply the media technologies themselves, is another, seventh engine of crisis.*

Finally, what about the claim that the media, with its naïve emphasis on “balance,” has played directly into the hands of the “merchants of doubts” (Oreskes & Conway, 2010)? The media, which should inform, has become in this way agnotogenic, i.e., the purveyor of “blessed ignorance,” as the little monk suggested. Is ignorance now a “much more sophisticated weapon” than in the past? I am skeptical of this argument.³ Doubt is not ignorance. Calling it “ignorance” leads to branding one’s opponents “denialists”. I do not like the term “climate denial”. It’s like “anti-vaxxer”. It’s a red flag waved in front of your opponent and it can push them all the way to the other side. It’s not symmetrical. The explanation for the position of your preferred side is simply nature, objective reality as revealed by research; the explanation for the position of your opponents is that they are illegitimate, covert

² <https://gbdeclaration.org/>

³ This is not to deny the usefulness of a “sociology of ignorance,” as long as we are careful to treat ignorance as socially constructed and not to contrast it unproblematically with “what we all know by now”. The approach pioneered by Robert Proctor (2008) occasionally suffers from this flaw. A more promising approach was developed by Funkenstein and Steinzaltz (1987) in a series of lectures on the “sociology of ignorance” broadcast on the IDF radio and then published—alas, only in Hebrew—as a small booklet by the “Broadcast University” of the IDF Radio.

ideological and economic interests. Symmetry is not "false balance." It is a methodological necessity and an ethical stance. You can talk with the hesitant and the skeptical and hear their reasons. You can't talk to denialists.

The term "denial"—ignorance's sibling—was invented and used in the course of a struggle over making the past present. It is legitimate there, though it can be stretched in problematic ways (Eyal, 2004). It is not useful or legitimate, I would argue, when one is taking part in a struggle over making *the future* present. This struggle is especially evident now, during the pandemic, when we are constantly confronted with models, each extrapolating from past data to forecast a future state of affairs, and then turn the forecast into a powerful claim about what course of action to take in the present (e.g., "flatten the curve"). The struggle is about how to deal with *uncertainty*, not ignorance. The opposition is between risk and uncertainty, not knowledge and ignorance. Indeed, regulatory science and expertise are mostly about how to deal with uncertainty in a way that would generate trust. For law and policy, uncertainty is intolerable. Law has invented a variety of devices to deny its relevance. In basic science, on the other hand, uncertainty is not a problem. On the contrary, it's a resource. It plays a positive, creative role in cutting-edge scientific research. Precisely for these reasons, 90% of expertise and regulatory science is about dealing with uncertainty, dealing with the question of how to arrive at good decisions under conditions of uncertainty. First, there is problematization of uncertainty, identifying it as a problem that needs to be addressed; second, there is the development of various ways to reduce it, tame it, minimize it, turn it into calculable risk. These are two complementary, but also potentially clashing strategies. On the one hand, there is risk analysis and risk management that reduce uncertainty by turning it into calculable risk. Insurance being the best example. The key is to have reliable statistics about past events. If you can claim that these are the same events, you can make reliable forecasts. On the other hand, there is the opposite strategy of deconstructing risk back into uncertainty, by arguing, for example, that the danger is so rare, unpredictable, and yet catastrophic, it is impossible to estimate probabilistically, and it is better to take a precautionary approach. The past is no guide for the future. The event we are trying to deal with is not the same as the series of events on which probabilistic calculation depends. And if you can't calculate, better avoid the action altogether. There is a constant interplay between these two movements, because it is not obviously or naturally clear whether something is irreducible uncertainty or calculable risk, whether something belongs in a predictable series or is unprecedented; whether it is "like the flu" or something else altogether.

The strategy of the merchants of doubt, who amplify uncertainty for their own purposes, is the dark side, so to speak, of precaution. But risk analysis also has its dark side. When you frame uncertainty as risk, you inevitably leave certain things out of the calculations, thereby creating ignorance and indeterminacy (Wynne, 1992). Regulatory "acceptable levels" of exposure to a toxic chemical typically create ignorance—when you don't even know that you don't know—about the "body burden" of exposure to all the other, similar, chemicals still in the pipeline of testing. Indeterminacy means that the causal chain you are trying to model is open and will be shaped by the future actions of relevant actors that you cannot model or control (that's why the curves have rarely been flattened without a significant exercise of

surveillance power, as in China). The clash between these two strategies—converting uncertainty into risk; deconstructing risk back into uncertainty—characterized the field of emerging infectious diseases already before the pandemic (Lakoff, 2015). The actuarial and vigilant approaches to pandemics are locked in struggle over the power to make the future present, to speak in its name and use it as a resource in present struggles. The ability to do so is a formidable form of social power, and as a result, it is constantly contested. *We conduct our struggles—our political differences, our value conflicts, our clashing interests—on the terrain of the future present. This is another, eighth, engine of the crisis of expertise.*

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