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What Did We Learn From L'Aquila? Scientist Citizens and Public Communication

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In two responses published on the SERRC, Danielle DeVasto (2020) and Christian Feldbacher-Escamilla (2020) review and debate important questions about expertise in relation to the infamous case of the L'Aquila Seven. The conversation springs out of arguments made in previous work from both authors published in *Social Epistemology* (DeVasto 2016, Feldbacher-Escamilla 2019). Both essays and responses foster stimulating conversations on matters of expertise, overflow, and science-policy decision making, arriving at different conclusions about the lessons to be learned from L'Aquila and opening up space for further discussion and reflection.

We enter this conversation precisely to continue this productive exchange on the lessons to be learned from L'Aquila, grounding our response to both DeVasto and Felbacher-Escamilla on our previous work about the same case published in 2019 in *Rhetoric & Public Affairs*. Having been cited by both authors in their ongoing conversation about L'Aquila, and having carefully reflected on the evolution of this conversation, we contribute to the exchange by contesting some conceptual and terminological choices they make and by proposing alternative language that offers a different perspective on what we can learn from this much discussed case and why it still matters.

### **Expertise and Rhetorical Citizenship in L'Aquila**

Our first point has to do with the specific categorizations of stakeholders and attributions of expertise of those involved in the L'Aquila case. Our perspective here differs from both DeVasto and Felbacher-Escamilla and we think it explains more constructively what happened in L'Aquila, underscoring a simple but powerful lesson: *experts in a specific field need to learn to communicate clearly with the non-experts in their audience*. In the case of the scientists consulted about the risk of earthquakes in L'Aquila, non-experts are anyone not belonging to their specific field of expertise—so it includes the public writ-large, but it also includes government authorities and experts in different or neighboring fields and sub-fields that do not do research into seismic risk. Because the critical breakdown in this case involved a failure of communication between experts and non-experts on earthquake science, this is the single bipartite categorization that we think most significant.

In our analysis of L'Aquila, we also concluded that a trend towards the purification of technical and public spheres has normalized the *alienation of scientists and other experts from their role as citizens, who as part of a larger public collective have a duty to communicate clearly what they know to be essential information coming from their technical expertise to those who need to know it but that do not have the same type of expertise*. The L'Aquila case shows us this failure of the experts to recognize and enact their civic duty of communicating clearly what they knew to the non-experts during the infamous meeting of March 31, 2009 and within the larger rhetorical ecology of L'Aquila, during the period of crisis before the earthquake of April 6, 2009.

This perspective differs from both Feldbacher-Escamilla's and DeVasto's views on both the role and the ontology of the experts in L'Aquila. DeVasto (2016) elaborated in her original essay about the interactional expertise of authorities who have the potential to bridge

technical and public spheres and she reflected with surprise about the spectacular failure of De Bernardinis to perform that mediating role in this case. Recognizing the potential of different ontologies of expertise and arguing for hybrid modes of expertise, she discusses three collectives of stakeholders in the L'Aquila case: the various experts, the authorities, and the local lay public.

In another attempt to carefully account for and categorize all agents relevant to the infamous meeting of March 31 in L'Aquila, Feldbacher-Escamilla's reconstruction goes even further to identify four collectives of stakeholders: the authorities (identified as Civil Protection or DCP), the experts (identified as members of the CGR), the public (identified as the lay public writ large), and what he calls the "non-scientific predictors/'non-scientists', in particular Giuliani" (2019, 505). Leaving aside a deeper critique of Feldbacher-Escamilla's particular categorization in this case, a division that questionably separates Giuliani from the larger public and also oddly divides the DPC from the CGR even though we know that there is a substantial overlap of membership in both groups (4 out of 7), we read both DeVasto and Feldbacher-Escamilla as emphasizing to a different degree the potential of the authorities to be the key collective *in charge of mediating and communicating between experts and non-experts*. DeVasto does this by identifying De Bernardinis as one person who could have had interactional expertise in this case (2016, 17) and Feldbacher-Escamilla does it by blaming De Bernardinis for publicly promoting the favorable discharge of energy hypothesis despite it being "intuitively clear" that such a reassurance was unwarranted (2019, 510).

In regards to this common point that emerges in DeVasto (2016) and Feldbacher-Escamilla (2019) about the potential of the "authorities" to act as science communicators that mediate between experts and the public, we want to clarify that we disagree with both authors in this interpretation. First, we don't believe the separation into several collectives is helpful in revealing the communication breakdown that occurred in this case, and second, we see a problem arising from emphasizing the boundaries or separation between the specific collectives identified. Rather, we see these boundaries as fluid and in need of being reconsidered as both experts and lay people dwell in the public sphere, where they all share the same civic responsibilities, and they can simultaneously occupy different positions of expertise in different contexts at different times.

Emphasizing or reinforcing clear boundaries between each collective turned out to be one of the problems that contributed to the tragedy of L'Aquila, not the other way around. Feldbacher-Escamilla seems to suggest at the end of his 2019 essay, similarly to many others, that an explicit role differentiation between public communication of science and scientific risk assessment is to be recommended to prevent situations like the L'Aquila debacle from happening again. However, we have elaborated on this division as being one of the main issues that contributed to the communication breakdown in L'Aquila in 2009. We questioned this artificial separation between risk assessment and risk communication by arguing that the two cannot be separated. Only experts in a specific field have the knowledge to assess claims communicated in the name of that field, and thus it is their role not just as scientists or experts, but also as citizens to ensure that public communication that claims to

convey what they say on the matter is accurate. Risk assessment without clear risk communication is powerless or dangerous, as we discovered in L'Aquila.

We question the division in authorities, experts, lay-public, and non-scientific predictors that has been proposed by Feldbacher-Escamilla, and also the simpler tripartite division envisioned by DeVasto and other scholars looking at this case simply because we do not find it useful in understanding what went wrong in L'Aquila. Rather, we think that the perceived, internalized, and institutionally sanctioned division of roles, where the scientists saw themselves only in charge of assessing risk and talking science and the authorities as the only ones in charge of communicating that science (that they fatally but unsurprisingly misunderstood) to the public, contributed to the communication catastrophe that happened in L'Aquila in relation to the CGR meeting. The civil protection and local authorities misunderstood the science and communicated inaccurate information. The experts or scientists did not communicate clearly to begin with and missed all the opportunities presented to them to rectify the misunderstandings of the authorities who ended up fatally misinforming the local public.

### **The Interplay Among Experts and Non-Experts**

In this case, we see only two relevant collectives: the experts in seismology (those who understood and knew earthquake science), and the non-experts (those who did not know or understand earthquake science). In our interpretation, people like De Bernardinis, Stati, the Mayor of L'Aquila, and Bertolaso belong to the non-expert group when it comes to earthquake science. De Bernardinis and Stati reported repeatedly in the trial that they had not understood correctly the science that was discussed during the meeting and that they had never been corrected by the experts when clarifications were sought or they expressed their interpretation of what they had heard. Similarly, Bertolaso, regardless of his much-discussed plans of carrying out a manufactured media operation of reassurance, was ultimately acquitted of all charges partly because he might have actually believed that the reassurance he wanted to communicate to the people of L'Aquila was supported by science. He declared this clearly in the trial, pointing out that no expert in seismology had ever bothered to correct his inaccurate and infamous interpretation of the shocks in a seismic swarm as “positive energy dissipation”—not before, not during the meeting, not after. Bertolaso is an MD with no relevant expertise in seismology. His interpretation could be explained as a common sense deduction, one that no one with actual relevant expertise seems to have ever corrected.

When you take into account the lack of seismic expertise of these authorities, a close reading of Feldbacher-Escamilla's translation of the significant exchange in the March 31 meeting calls into question his own statement that “it is hard to see how” the seismic experts’ “quite explicit” conclusions “could have been missed by the authorities” (2019, 509). We find it quite easy to understand. De Bernardinis is a hydraulic engineer. His expertise did nothing to help him understand the discussion about seismic risk in L'Aquila. To him, the flawed interpretation of the shocks as “positive release of seismic energy” that he had heard from his boss Bertolaso made good sense. He was not equipped to understand the nuances of a

different field of expertise from his own, and his flawed interpretation of science was regrettably never corrected by the experts when they had multiple opportunities to do so. In Feldbacher-Escamilla's translation, Barberi's second "What can you say?" about the energy discharge hypothesis is very easy to mistake as a legitimate question, rather than an ironic *erotema*, and the ensuing conversation by the scientists about the lack of a relationship between swarms and large earthquakes is easy to interpret as a reassuring confirmation of that hypothesis (Feldbacher-Escamilla 2019, 506). Stati, another auditor to this exchange, is a civil protection officer with no relevant scientific expertise and we know from the trial transcript that she sought validation of her also flawed understanding of what was being discussed during the meeting. She was never corrected after concluding to the scientists that their statements would allow her to reassure the population, and she took their silence as validation of her flawed interpretation of what she had heard and thought to be reassuring.

Only the scientist-experts in seismology could do the work of clearly communicating their findings to the non-experts. We know that besides them, no one else clearly understood the actual science that they discussed in that meeting, which resulted in disastrous communication being passed to the local residents who ultimately suffered the consequences of this communication debacle. In our study of this case, we demonstrated how in L'Aquila these scientists not only did not communicate clearly with the non-experts to begin with, but they also missed several opportunities to rectify the flawed reception of their discussions, both as scientists conducting a scientific risk assessment in a forum attended by non-experts and as citizens in the public sphere, responsible and accountable to their fellow citizens in fostering public safety.

The very fact that the experts in L'Aquila did not correct the misinterpretations of the non-experts on multiple occasions—such as when they heard it during the CGR meeting, or when they stood silently during the press conference after the CGR meeting—shows that they missed their opportunities not only as scientists/experts, but also as citizens to enact their duty of care towards their fellow citizens by providing accurate information that was essential in that moment of crisis during the earthquake emergency. Ultimately, we see the reinforcement of role separation and boundaries between the technical experts and the public as dangerous because in reading the trial testimonies we also discovered that the scientists' belief that they were not responsible for the public communication of their findings reinforced their sense of having done all they could, releasing them of their civic duty to engage further, when in fact they could and should have done just a little more for their fellow citizens that could have resulted in many saved lives.

Feldbacher-Escamilla (2020) believes that we are in line with him in that he and we "fully agree that the scientists are blameless" (27). But that is not the case. He believes the experts have to be absolved, since the blame for turning a non-denial into acceptance mostly falls on what he identifies as the "authorities." DeVasto appears to agree with his placement of blame when she bemoans the spectacular and puzzling failure of De Bernardinis to provide interactional expertise in that context (2016, 17). We think the ambiguity of the scientists' response to a direct question about the energy dissipation hypothesis at the meeting, and their deafening silence at the press conference, explain that failure. In conclusion, we see

only one differentiation that helps us understand what happened in L'Aquila: the one between experts and non-experts in relation to the issues at stake in that context, i.e. earthquake science. We also see the utility of questioning critically rather than reinforcing the boundaries between the technical and the public sphere to avoid this type of situation in the future: technical and public spheres should not feel like separate realms for scientists. Scientists are citizens, too, and they should not forget their responsibilities as rhetorical citizens while they carry out their technical work.

### **The Metaphor of Overflow**

To this point, our argument has been that Feldbacher-Escamilla's categorization of the parties of interest into four collectives, and DeVasto's conceptualization of the authorities as holding interactional expertise as mediators between scientists and the public are both unhelpful in this case since the fatal miscommunication turned on an expert/non-expert divide over the subject of earthquake science. But we have also argued that this very distinction is what contributed to the miscommunication, since scientists thought they had no responsibility to engage in public communication across that divide, either to the authorities who stood in for the public, or to the larger public that those authorities would go on to address. Reducing a four-part classification to a two-part classification, and then calling even that division into question, we seek a new way of thinking about this case. The metaphor of overflow helps get at this issue, and it is the second rhetorical choice we would like challenge in this SERRC conversation about the lessons to be learned from the L'Aquila case.

Overflow is a concept from the STS literature describing spillage between science and the public, when matters of fact and matters of concern slosh out of their respective domains and breach the boundaries we imagine to be separating them. As DeVasto states, Feldbacher-Escamilla casts overflow "in a rather negative light, as something to be avoided," using terms like "the illegitimate values/fact overflow" (2020, p. 10). But even DeVasto is unable to escape the negative connotative pull of this metaphor. As much as she would like to characterize overflow as neutral and inevitable, the very term suggests a messy escape of carefully constructed borders, a flooding that we would normally seek to prevent. Her insightful point that De Bernardinis might have been weighing other costs in judging the certainty level he needed to have to publicly assert the favorable energy discharge hypothesis (such as the cost of scientific or political reputation, or the cost of evacuating communities) arises from her consideration of overflow. She suggests that reputation and money are matters of concern that leak into a decision calculus that in its more proper channel defines cost as "protecting human life or adhering to scientific knowledge" (2020, 10-11).

As we watch a similar cost assessment playing out during the current COVID-19 pandemic, with scientists such as Anthony Fauci aligning with the protection of human life and adherence to scientific knowledge when arguing for the extension of social distancing measures, and politicians such as Donald Trump showing more concern for the economy and his chances of re-election in ignoring those measures to reopen businesses and hold political rallies, we cannot help but align with Feldbacher-Escamilla in considering this kind

of overflow as something to be avoided. But that is at least partially because the metaphor encourages us to think this way. The protection of human life is actually a matter of concern, not a matter of fact, and yet we tend to align it with “adhering to scientific knowledge” because the overflow metaphor suggests that “personal, social, political, economic, spiritual, material” concerns (DeVasto 2020, 10) are spilling out to contaminate expert decisions that are rationally calculated to reduce risk and preserve life.

Instead of the metaphor of overflow, a term that assumes a container and messy leakage, we prefer the spheres metaphor because the tradition of Venn diagrams trains us to see a technical sphere and public sphere as legitimately overlapping. Earthquake scientists might occupy a technical sphere, but they also live in a larger public sphere; a mayor might exist in the public sphere but not the technical sphere of earthquake science. The visual metaphor of overlapping technical and public spheres also allows us to imagine the lines between them being redrawn as different people occupy different spheres in different situations. A mayor might occupy the technical sphere of public policy administration, an expertise that the earthquake scientist does not share. With the spheres metaphor, we can emphasize relevant expertise on any number of subjects. Facts need to be understood by all (that we cannot predict earthquakes, nor can we predict a lack of earthquakes), and values need to be articulated and weighed (so that human life is recognized as more important than reputation or personal convenience). Experts have a special responsibility because they always occupy both their technical sphere and the larger public sphere, and are thus the only ones with the critical knowledge needed by decision-makers in that broader domain. When they fail to acknowledge their responsibility to communicate effectively with non-experts (whether with the authorities who will convey that knowledge to the public in their name, or directly to the public in media events), they abrogate their special duty and the results can be fatal. That is the lesson we have learned from L’Aquila, a lesson derived from our own expertise as scholars of communication, and one that we feel duty-bound to share with others.

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