DIALOGUE AND UNIVERSALISM

JOURNAL OF THE INTERNATIONAL SOCIETY FOR UNIVERSAL DIALOGUE

Vol. XXXII No. 3/2022

NEW FACES OF DEMOCRACY. IN SEARCHING OF THE GLOBAL HEALTH OF DEMOCRACY

Guest Editor: *Gabriela Tănăsescu*

Published three times a year by

INSTITUTE OF PHILOSOPHY AND SOCIOLOGY OF THE POLISH ACADEMY OF SCIENCES and PHILOSOPHY FOR DIALOGUE FOUNDATION

PL ISSN 1234-5792

DIALOGUE AND UNIVERSALISM
32 (3), 2022

Janusz Grygieńć

LIBERAL DEMOCRACY: BETWEEN EPISTEMIC AUTONOMY AND DEPENDENCE

https://doi.org/10.5840/du202232339

ABSTRACT

Understanding the relationship between experts and laypeople is crucial for understanding today's world of post-truth and the contemporary crisis of liberal democracy. The emergence of post-truth has been linked to various phenomena such as a flawed social and mass media ecosystem, poor citizen education, and the manipulation tactics of powerful interest groups. The paper argues that the problem is, however, more profound. The underlying issue is laypeople's inevitable epistemic dependence on experts. The latter is part and parcel of the "risk society" in which people question the scientific consensus and thus are able to manipulate the facts. It is a powerful weapon in the hands of illiberal democrats, though liberal democrats can make no use of it. The latter downplay the problem of citizens' epistemic deficits and of the epistemic asymmetries between them. The third and fourth generations of deliberative democrats are a perfect example. The paper argues that the concepts of interactional expertise and epistemic dependence explain why understanding between experts and laypeople is impossible. The said phenomena undermine liberalism's unrealistic assumptions concerning citizens' decision-making competence.

Keywords: epistemic dependence, interactional expertise, deliberative democracy, liberal democracy, populism, post-truth.

Liberal philosophy and practice is not an effective response to the triumph of political misinformation and populism.[1] The liberal response usually boils down to countering misinformation and ignorance with the flood of facts and expert opinions. Liberals want to combat half-truths and lies with fact-checking. They want to flood citizens with reliable information. They hope that by doing so

[1] Cf. Van Herpen, M. H. 2021. *The End of Populism. Twenty Proposals to Defend Liberal Democracy*. Manchester: Manchester University Press; Persily, N. 2017. "Can Democracy Survive the Internet?" *Journal of Democracy*, 28 (2), 63–76.

they will demonstrate that science settles many pseudo-controversial issues, from the effectiveness of vaccination to the causes of climate change. This strategy of alleging accurate information was used by Hilary Clinton's staff in her 2016 campaign. Trump's lies were countered with an extensive fact-checking campaign. During the election debate, Clinton's website live-blogged the false claims of her opponent. Britain's EU remainers employed a similar approach in 2016.[2] Their response to the hype about the £350 million that could go into the NHS each week instead of the EU treasury was to cite figures on the projected rise in unemployment and cost of living after leaving the EU. The difference between the liberal and populist strategy is clear. The latter builds a narrative out of emotionally charged images and half-true or outright false claims—the former appeals to reason and rational analysis.[3]

Recent years have shown that the populist strategy brings tangible political results. In contrast, the liberal strategy of combating falsehood with facts does not work as well as liberals would like. Nevertheless, liberals seem unable to propose an alternative. This seems to be due to their faith in the epistemic aptitude of ordinary citizens and their ability to distinguish fact from falsehood, and experts from pseudo-experts. This faith underpins many popular liberal democratic posits, including a number of ideas developed in deliberative democratic theory.[4] If public deliberation is to have beneficial outcomes and be more than a shouting match, there must be common ground, a perspective that participants share despite their differences. Thus we arrive at the notion of RACA—

---

[2] See https://constitution-unit.com/2016/08/23/fact-checking-and-the-eu-referendum/, accessed on November 7, 2022.

[3] Cf. Waisbord, S. 2018. "The Elective Affinity between Post-truth Communication and Populist Politics." Communication Research and Practice, 4 (1), 17–34; Davies, W. 2019. Nervous States: How Feeling Took Over the World. London: Vintage.

[4] My focus here is on epistemic theories and justifications for democracy, particularly deliberative democracy. These are only one of many justifications for democratic governance. Normative justifications are enduringly popular, including references to the equal respect of all citizens offered only in democracy (cf. Cooke, M. 2000. "Five Arguments for Deliberative Democracy." *Political Studies*, 48, 954–957; Gutmann, A., D. Thompson. 2004. *Why Deliberative Democracy?*. Princeton (NJ): Princeton University Press; Pateman, C. 1970. *Participation and Democratic Theory*. Cambridge: Cambridge University Press). Much less popular are epistemic non-deliberative theories of democracy, such as the concept of the wisdom of crowds (Surowiecki, J. 2005. *The Wisdom of Crowds*. New York: Anchor; cf. Solomon, M. 2006. " 'Groupthink' versus 'The Wisdom of Crowds': The Social Epistemology of Deliberation and Dissent." *The Southern Journal of Philosophy* XLIV, 35–39). They proclaim that the best political decisions result from the aggregation of socially dispersed knowledge. Finally, minimalist accounts of democracy consider representative institutions most fit for deliberation (Schumpeter, J. 1942. *Capitalism, Socialism, and Democracy*. New York: Harper & Brothers; Burke, E. 1999. "Speech to the Electors of Bristol." In: *Selected Works of Edmund Burke*, vol. 4, Indianapolis, 3–13; Brennan, J. 2016. *Against Democracy*. Princeton, NJ: Princeton University Press, chap. 7). I refer here exclusively to deliberative, epistemic conceptions of democracy. These proclaim that only deliberation under optimal conditions and considering scientific expertise leads to the best possible decisions.

"reasons all can accept,"[5] which the liberal tradition has long been trying to pin down. The common view is that RACA do not include personal preferences, religious or philosophical arguments, or invidious comparisons.[6] By contrast, they *do* include scientific findings as long as these are not subject to controversy.[7] The idea of scientific controversy is thus potentially at the very centre of deliberative democratic theory.[8] Despite its pivotal role, the question of expertise is seldom considered by deliberative theorists or, more broadly, theorists of liberal democracy.[9] This is curious, since if any scientific truth can be cast as pseudo-controversial in the public square, deliberation loses its secure foundation.[10]

The possibility of understanding between experts and laypeople is a fundamental tenet and theme of the liberal democratic narrative. It is also crucial to the future of liberal democracy.[11] Liberals have tended to trace political failure to phenomena such as a flawed social and mass media ecosystem,[12] poor citizen education, and the manipulative tactics of powerful interest groups.[13] However,

---

[5] See Bohman, J. 1996. *Public Deliberation: Pluralism*, *Complexity*, *and Democracy*. Cambridge, MA: MIT Press, 39–40; Cohen, J. 2009. "Reflections on Deliberative Democracy." In: *Contemporary Debates in Political Philosophy*. Christiano, T., Christman, J. (Eds.). Malden (MA): Wiley-Blackwell, 249–250; Elster, J. 1989. "Deliberation and Constitution-making." In: *Deliberative Democracy*. Elster, J. (Ed.). Cambridge: Cambridge University Press, 111; Rawls, J. 1993. *Political Liberalism*. New York: Columbia University Press, 217–218; Rawls, J. 1999. *The Idea of Public Reason Revisited*. In: idem. *The Law of Peoples*, Cambridge, Mass.: Harvard University Press, 136–137.

[6] Estlund, D. 2008. *Democratic Authority. A Philosophical Framework*. Princeton: Princeton University Press.

[7] Rawls, J. 1993, op. cit., 67, 139.

[8] Cf. Van Wietmarschen, H. 2018. "Reasonable Citizens and Epistemic Pears: A Skeptical Problem for Political Liberalism." *Journal of Political Philosophy*, 26(4), 9-10.

[9] See Grygieńć, J. 2023. *Democracy in the Post-Truth Era. Restoring Faith in Expertise*. Edinburgh: Edinburgh University Press, 10.

[10] Cf. Curato, N., M. Hammond, J. B. Min. 2019. *Power in Deliberative Democracy. Norms, Forums, Systems*. London: Palgrave Macmillan, chapter 5; Chambers, S. 2020. "Truth, Deliberative Democracy, and the Virtues of Accuracy: Is Fake News Destroying the Public Sphere?." *Political Studies*. Published electronically April 2; doi:10.1177/0032321719890811; McKay, S., Ch. Tenove. 2021. "Disinformation as a Threat to Deliberative Democracy." *Political Research Quarterly*, 74 (3).

[11] Cf. Fuller, S. 2006. "The Constitutively Social Character of Expertise." In: *The Philosophy of Expertise*. Selinger, E., R. P. Crease. (Eds.). New York: Columbia University Press, 342–357; Turner, S. 2003. *Liberal Democracy 3.0: Civil Society in an Age of Experts*. London: Palgrave; Collins, H. M., R. Evans, M. Weinel. 2020. *Experts and the Will of the People*. London: Palgrave.

[12] Cf. Harjuniemi, T. 2022. "Post-truth, Fake News and the Liberal 'Regime of Truth'—The Double Movement between Lippmann and Hayek." *European Journal of Communication*, 37(3), 269–283; Boyd-Barrett, O. 2020. *Russiagate and Propaganda. Disinformation in the Age of Social Media*. London-New York: Routledge.

[13] Jamieson, K. H. 2018. *Cyberwar: How Russian Hackers and Trolls Helped Elect a President*. Oxford: Oxford University Press; Pickard, V. 2018. "When Commercialism Trumps Democracy: Media Pathologies and the Rise of Misinformation society." In: Trump and the Media. Boczkowski P. J., Z. Papacharissi (Eds.). Cambridge, MA: MIT Press, 195–201; Hannan, J. 2018. "Trolling Ourselves to Death: Social Media and Post-truth Politics." European Journal of Com-

it is possible that the problem runs much deeper and has to do with laypeople's unavoidable epistemic dependence on experts and the fact that experts are frequently misunderstood by non-experts.[14] The said dependence is the reason why the scientific consensus is so easily challenged and the interpretation of facts manipulated.[15] It is a powerful weapon that can be skillfully wielded by illiberal democrats.[16]

LIBERAL OPTIMISM

Liberal theorists most often underestimate the political importance of the relationship between experts and laypeople. They regard the question of expert knowledge as essentially unproblematic. This is particularly evident in the last two "generations" of deliberative democrats—the third and the fourth.[17] Researchers representing generation three focus on the possibility of introducing deliberative innovations into political practice. They believe that the normative ideals articulated by Habermas have limited application in political practice. Certainly, it is impossible to eliminate all of the political phenomena obstruct-

munication 33 (2), 214–226; Allcott, H., M. Gentzkow. 2017. "Social Media and Fake News in 2016 Election." *Journal of Economic Perspectives*, 31 (2), 211–236.

[14] Hardwig, J. 1985. "Epistemic Dependence." *Journal of Philosophy*, 82 (7), 335–349; Hardwig, J. 1991. "Role of Trust in Knowledge." *Journal of Philosophy*, 88 (12), 693–708; Nguyen, C. T. 2020. "Cognitive Islands and Runaway Echo Chambers: Problems for Epistemic Dependence on Experts." *Synthese*, 197 (7), 2803–2821.

[15] Oreskes, N., E. M. Conway. 2010. Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming. New York: Bloomsbury.

[16] Nichols, T. 2017. The Death of Expertise: The Campaign against Established Knowledge and Why It Matters. Oxford: Oxford University Press; Zielonka, J. 2018. Counter-Revolution: Liberal Europe in Retreat. Oxford: Oxford University Press; Pabst, A. 2019. The Demons of Liberal Democracy, Cambridge: Polity; Mounk, Y. 2018. The People vs. Democracy: Why Our Freedom Is in Danger and How to Save It. Cambridge, MA: Harvard University Press.

[17] Stephen Elstub has divided the history of deliberative democracy into generations, distinguished by their object of interest. Representatives of the first generation (J. Habermas, J. Rawls) aimed at developing theoretical models necessary to consider issues of a normative nature. They, therefore, operated mainly within the ideal theory. The second generation (e.g. A. Gutmann, D. Thompson, J. Bohman, J. Cohen) rejected the most unrealistic assumptions of Habermas' or Rawls' theory. Its representatives assumed the inevitability of, inter alia, the asymmetrical positioning of the deliberating parties, social inequalities in access to knowledge and the prevalence of manipulative practices. They also rejected the idea of consensus as the finale of deliberation. An even more far-reaching scepticism about the possibility of fully implementing an ideal deliberative democracy characterised the third generation. Its representatives (e.g. W. Baber, R. Bartlett, J. Parkinson) were primarily interested in the actual institutions that would establish deliberative democracy. Therefore, one of their main objects of consideration was democratic innovations (Elstub, S. 2010. "The Third Generation of Deliberative Democracy." *Political Studies Review*, 8, 291–307). Finally, the fourth generation comprises the concept of deliberative systems. Its representatives advocate analysing entire political systems (rather than isolated institutions) in terms of their degree of deliberativeness (ibid., 291–307; Elstub, S., S. Ercan, R. F. Mendonça. 2016. "The Fourth Generation of Deliberative Democracy." *Critical Policy Studies*, 20 (2), 139–51).

ing these ideals: bargaining, manipulation, polarization, civic ignorance, and various asymmetries in communicative competence which conflict with the ideal communicative situation. However, with the help of democratic innovations (DIs), it is possible to create small enclaves of deliberation where the yoke of most of these constraints (e.g. groupthink, manipulation, partisanship, bias[18]) can be cast off and informed debate can happen. When regular citizens have sufficient time to learn the essential information, when they have the support of moderators allowing everyone to have their say and preventing social pressure, and when they can confront their intuitions with expert opinions, the conditions for the emergence of a rational opinion will be optimal.

The purpose of DIs is to create spaces of informed, expertise-led discussion despite the inadequacies of representative democracy.[19] This is what enables the "unforced force of better argument" to prevail, albeit on a small scale.[20] This is the idea behind deliberative mini-publics (deliberative opinion polls, citizen panels or citizen juries), where a randomly selected, socially representative group of citizens is supposed to come to an informed opinion on a given issue by reading balanced background materials and talking to experts. The assumption is that having created the optimal conditions for discussion, ordinary citizens would be able to have an informed dialogue with experts and one another, ask the right questions, and understand the expertise supplied. Crucially, they will also be able to distinguish experts from pseudo-experts and facts from non-facts.[21]

From this perspective, the main problem with the post-truth era is that DIs cannot be deployed on a large scale. If every citizen could take part in deliberations and had the time to learn essential information, manipulation would be much less of a political problem, and the post-truth era and populism would come to an end. As Ackerman and Fishkin optimistically state regarding the introduction of a Deliberation Day to precede major national elections, "everything else would change: the candidates, the media, the activists, the interest groups, the spin doctors, the advertisers, the pollsters, the fund raisers, the lobbyists, and the political parties. All would have no choice but to adapt to a more

---

[18] Fishkin, J.S. 1999. "Toward Deliberative Democracy: Experimenting with an Ideal." In: *Citizen Competence and Democratic Institutions*. Elkin, S., K. E. Soltan. (Eds.). University Park (PA): Penn State University Press, 285; Landemore H. 2013. *Democratic Reason. Politics, Collective Intelligence, and the Rule of the Many*. Princeton–Oxford: Princeton University Press, 122; Smith, G. 2009. *Democratic Innovations. Designing Institutions for Citizen Participation*. Cambridge: Cambridge University Press.

[19] Elstub, S., O. Escobar. 2019. "Defining and Typologising Democratic Innovations." In: *Handbook of Democratic Innovation and Governance*. Elstub, S., O. Escobar (Eds.). Cheltenham, UK–Northampton, MA, USA: Edward Elgar, 11–31; Smith, G. 2009. *Democratic Innovations. Designing Institutions for Citizen Participation*. Cambridge: Cambridge University Press.

[20] Habermas, J. 1996. *Between Facts and Norms. Contributions to a Discourse Theory of Law and Democracy*. Rehg, W. (Trans.). Cambridge, Mass.: The MIT Press, 306.

[21] See Harris, C. 2019. "Mini-publics: Design Choices and Legitimacy." In: *Handbook of Democratic Innovation and Governance*, op. cit., 45–59.

attentive and informed public."[22] The problem of post-truth and populism is therefore a technical one. People lack the time to absorb new information and deliberate. Were it not for this, they could easily debunk populist slogans.

The fourth generation of deliberative democracy—deliberative systems—is based on a slightly different but equally optimistic view of civic competence.[23] It states that although we cannot make all facets of the public sphere deliberative, the political system can be deliberative anyway. As Jane Mansbridge argues, "in a complementary relationship, two wrongs can make a right. Two venues, both with deliberative deficiencies, can each make up for the deficiencies of the other."[24] Advocates of deliberative systems call for an epistemic division of labour.[25] In their view, citizens should set goals worth pursuing, politicians and experts should implement them, and citizens should evaluate the work of the latter. Everyone does what they are best equipped to do.

Citizens know what the most pressing social problems are, experts and career politicians know how to solve them, and citizens are capable of appraising whether their expectations have been met. The assumption is that citizens (1) know what problems are bothering them, and (2) that they can assess the outcome of the experts' and politicians' work. In the Polish parliamentary campaign of 2015, the ruling party boasted of its infrastructural reforms and the number of new roads and motorways built. On the other hand, the opposition party's (Law and Justice) slogan was "Poland in ruins," i.e. the very opposite picture. In deliberative systems, the expectation is that citizens are able to best determine what state the country is actually in based on their own experience. Could better political decisions have left it in better shape? Was the state of the Polish economy the outcome of government decisions or was it more a matter of the international environment? Would other governments have made the socio-economic situation better? These are all epistemic questions. A correct answer requires considering a wide range of economic, political and social factors. In reality, voters seldom have such knowledge when making decisions. But if more reliable information had been circulated in public debate, the decision would have been much easier.

---

[22] Ackerman, B., J. S. Fishkin. 2004. *Deliberation Day*. New Haven (CT)–London: Yale University Press, 3.

[23] Cf. Parkinson, J. 2018. "Deliberative Systems." In: *Oxford Handbook of Deliberative Democracy*. Bächtiger, A., J. S. Dryzek, J. Mansbridge, M. Warren (Eds.). Oxford: Oxford University Press; Neblo, M. A., A. White. 2018. "Politics in Translation: Communication between Sites of the Deliberative System." In: *Oxford Handbook of Deliberative Democracy*, op. cit.; Dryzek, J. 2017. "The Forum, the System, and the Polity: Three Varieties of Democratic Theory." *Political Theory*, 4, 610–636.

[24] Mansbridge, J. et al. 2012. "A Systemic Approach to Deliberative Democracy." In: *Deliberative Systems*. Parkinson, J., J. Mansbridge. (Eds.). Cambridge: Cambridge University Press, 3.

[25] Mansbridge, J. et al. 2012, op. cit., 2–3; Fuerstein, M. 2008. "Epistemic Democracy and the Social Character of Knowledge." *Episteme. A Journal of Social Epistemology*, 5 (1), 81, 85.

According to these two ways of framing deliberative democracy, post-truth occurs when citizens lack access to accurate information. Populism and misinformation can therefore be overcome because it is possible to create conditions for good deliberation (even if limited), provide citizens with reliable information, or, at the very least, explain complex issues to the public in simple terms.

MADELEINE J. AND THE CHALLENGE OF INTERACTIONAL EXPERTISE

If this perspective were attainable, all liberals would have to do would be to flood the public with accurate information and then wait for the inevitable end of the post-truth era, crowned by the defeat of populists. Since ordinary citizens are epistemically autonomous and capable of distinguishing truth from falsehood, the only problem that remains is how to disseminate information to the public. However, this seems to be an over-optimistic view of the issue and can easily be challenged by invoking two additional concepts: that of interactional expertise and epistemic dependence.

"Interactional expertise" (IE) is a term introduced by Harry Collins and Robert Evans.[26] IE is the ability to understand and take part in discussions with expert practitioners who are able to solve new problems in a given field. How such expert knowledge is acquired is still the subject of controversy. Researchers agree that it requires, at the very least, familiarity with the ongoing debates in a given branch of science as well as an understanding of the major research problems and approaches to solving them. However, researchers cannot agree whether these skills are sufficient to understand expert practitioners. Collins certainly thinks so and has convincingly shown through a sociological study of a particular area that one can acquire extensive expertise without being a practitioner.[27] Collins even tested his expertise in detecting gravitational waves by conducting an Imitation Game in which he and two expert practitioners answered technical questions on the subject.[28] A group of further expert practitioners was then to distinguish between Collins, the sociologist, and the expert practitioners based on their answers.[29] This proved impossible, which the journal *Nature* considered a stunning result.[30]

---

[26] Collins, H., R. Evans. 2007. *Rethinking Expertise.* Chicago–London: University of Chicago Press, 28–40.

[27] Collins, H. 2017. *Gravity's Kiss: The Detection of Gravitational Waves*. Cambridge, MA: MIT Press; Collins, H. 1975. "The Seven Sexes: Study in Sociology of a Phenomenon, or Replication of Experiments in Physics." *Sociology*, 9 (2), 205–224; Collins, H. 1981. "Son of Seven Sexes: The Social Destruction of a Physical Phenomenon." *Social Studies of Science*, 11 (1), 33–62.

[28] See Collins, H., R. Evans. 2007, op. cit., chap. 4.

[29] See Collins, H. 2014. *Are We All Scientific Experts Now?* Cambridge: Polity, 69–71.

[30] Giles, J. 2006. "Sociologist Fools Physics Judges." *Nature*, 442, 8.

The second example cited by Collins comes from Oliver Sacks's popular book *The Man Who Mistook His Wife for a Hat* (1985). Sacks describes the story of Madeleine J., a sixty-year-old woman, blind from birth and suffering from cerebral palsy, who was deprived of most of the sensory experience available to the average person. Despite not having direct contact with the world around her, Madeleine was an eloquent, intelligent and well-read person, although she did not know Braille.[31] She learned everything she knew about the world from conversations with other people, mainly members of her own family. Madeleine's example and Collins's experience with gravitational wave detection led him to believe that expertise in a particular area could be acquired through discussions with experts. He called this "linguistic socialization."[32]

Many researchers, however, disagree with Collins. In their view, cognition is never purely discursive. It is always to some extent embodied. In other words, it is not possible to know a certain practice without being involved in it. Collins's winning the Imitation Game and Madeleine's example do not prove that they acquired an understanding of the issues they were able to converse about in the course of linguistic socialization alone. Moreover, although Madeleine could converse eloquently about reality, it cannot be assumed that she had developed the same kind of understanding of it that people with functioning senses have.[33]

One scholar critical of the idea of linguistic socialization is Hubert Dreyfus. Dreyfus believes that it is not possible to explain a complex activity such as operating on a patient to someone if there is no specific "shared background understanding" that will "only make sense to experts currently involved in a shared situation."[34] Similarly, Rodrigo Ribeiro and Francisco Lima argue that it is necessary to identify not one but as many as three types of interactional expertise (IE): pure-IE, special-IE, and typical-IE.[35] The first is acquired through "linguistic socialization" of the type described by Collins. The second is the result of "passive" participation in a community of researchers, as when one follows research and takes part in discussions with experts without actually conducting the research oneself. And finally, the third type of IE comes from full immersion in research practice. According to Ribeiro and Lima, IE is most

---

[31] Sacks, O. 1985. *The Man Who Mistook His Wife for a Hat.* Summit Books.

[32] Collins, H. 1996. "Embedded or Embodied?" A Review of Hubert Dreyfus' What Computers Still Can't Do. *Artificial Intelligence*, 80 (1), 99–117.

[33] Selinger, E., Mix, J. 2004. "On Interactional Expertise: Pragmatic and Ontological Considerations." *Phenomenology and the Cognitive Sciences* 3, 145–63. Cf. Collins, H. 2004. "The Trouble with Madeleine. Response to E. Selinger and J. Mix." *Phenomenology and the Cognitive Sciences* 3, 165–70. Cf. Gilligan, J. M. 2019. "Expertise across Disciplines: Establishing Common Ground in Interdisciplinary Disaster Research Teams." *Risk Analysis*.

34 Dreyfus, H. 2000. "Response to Carman Taylor." In: *Heidegger, Authenticity, and Modernity: Essays in Honor of Hubert Dreyfus*, Vol. 1. Wrathall, M., J. Malpas. (Eds.). Cambridge, Mass: MIT Press, 308.

[35] Ribeiro, R., Lima, F.P.A. 2015. "The Value of Practice: A Critique of Interactional Expertise." *Social Studies of Science*, 46(2), 1–30; Dreyfus, H. 2000. "Responses," op. cit., 305–341.

often acquired in the last way, that is, through practice.[36] Full understanding of a given area requires a tacit knowledge which is non-verbalized and impossible to communicate by word and can only be acquired by doing. Much less frequently, IE is acquired in the second way. That is because it requires a long-term insider observation of a community of researchers or practitioners. Most significantly, however, IE cannot be acquired in the first way. Neither Collins's nor Madeleine's example is a case of "linguistic socialization" alone. Both describe acquiring knowledge through partial immersion in practice: interacting daily with gravitational wave researchers (Collins) or family members (Madeleine).

IE seems to be of crucial importance in illuminating the post-truth era, dominated by fake news and political manipulation. It is the only way of securing understanding between those who can solve practical problems and those who cannot, i.e. experts and laypeople. Enabling and expanding this type of knowledge transfer—as liberal theorists hope—could offset the impact of "merchants of doubt" and populists who consistently undervalue and misrepresent scientific findings. Developing methods and techniques for achieving such understanding is a key concern if one's aim is to strengthen the decision-making competence and epistemic autonomy of ordinary citizenry. In a world of increasing distrust in science and scientific institutions, establishing channels of direct understanding between experts and laypeople becomes crucial.

EPISTEMIC DEPENDENCE AND POST-TRUTH

The Reproducibility Project took off in 2011. It began with an attempt to replicate experiments described in 100 psychology articles published in top journals in 2008. Its results were alarming. Only 36.1 per cent of the results relayed in the texts could be replicated. In 2021, the same project attempted to replicate the results of 193 cancer studies described in 53 top articles published between 2010 and 2012. Only the results of 50 experiments described in 23 articles could be confirmed this time. Moreover, the results obtained were, on average, 85 per cent below those reported.

Fraud is a severe problem for science, one that continues to be on the rise. The Reproducibility Project has shown that it is not the exception but the sad rule of the scientific world.[37] It is easy to commit and challenging to detect, and there are no systematic mechanisms to verify the findings reported. Scientists are not interested in replicating results once the original experiments have been

[36] Ribeiro, R., F. P. A. Lima. 2015, op. cit., 20–22.

[37] The Retraction Watch database contains a list of over 30,000 papers which have been retracted by their authors or publishers after confirming that their content was false (see: http://retractiondatabase. org/RetractionSearch.aspx). Cf. Zuckerman, H. 2020. "Is 'the Time Ripe' for Quantitative Research on Misconduct in Science?" *Quantitative Science Studies*, 1(3), 945–958.

performed, and these are only verified in exceptional cases. The multitude of articles submitted for publication today and the degree of scientific specialization make it hard to even find qualified reviewers. It is extremely rare for results to be confirmed. As early as 1985, John Hardwig stated that

> "scientists, for example, simply do not repeat the experiments of other scientists unless the experiment is important and something seems fishy about it. It would, moreover, be impossible for anyone to get to the research front in, say, physics or psychology, if he relied only on the results of his own inquiry or insisted on assessing for himself the evidence behind all the beliefs he accepts in his field."[38]

According to Hardwig there is another reason for this deplorable state of affairs. The pressure of narrow specialization means that scientists lack the competence to evaluate one another's work. As a consequence, science experts are seldom on an equal footing. The expert-lay duality is replicated here too. We are all laypeople from the perspective of our colleagues in other specialties. "The expert-layman relationship is essential to the scientific and scholarly pursuit of knowledge."[39] Science favours original research and unique expertise. This makes it much more difficult to understand work carried out by people within another specialty. The consequences of this are regrettable. Science is no longer based on informed criticism and begins to be based on selective trust.[40] Reviews of articles and grant applications have essentially stopped assessing the correctness of the findings reported and content themselves with verifying the reputation of the authors or institutions represented.

In other words, space for discussions and understanding between experts, even within the same specialty, is shrinking in science. From this standpoint, what differentiates experts from laypeople is not experience and terminology, but a bottomless epistemic chasm that cannot be bridged.[41] Therefore, as Hardwig suggests, trusting an expert is not irrational. It is the only rational course of action.[42] There is no escaping trust.[43] The trick is to know whom to trust.

---

[38] Hardwig, J. 1985. "Epistemic Dependence." *The Journal of Philosophy*, 82 (7), 345.

[39] Hardwig, J. 1985, op. cit., 336.

[40] Cf. Hoffman, M. 2012. "How to Identify Moral Experts? An Application of Goldman's Criteria for Expert Identification to the Domain of Morality." *Analyse & Kritik*, 2, 300.

[41] The idea of epistemic dependence has been a subject of controversy. Here, I adopt its radical interpretation, according to which trust is inherent in relationships between experts of different specialities. It is not the only possible approach. Some authors limit the scope of epistemic dependence to specific fields of research, e.g. philosophical (cf. Cholbi, M. 2007. "Moral Expertise and the Credentials Problem." *Ethical Theory and Moral Practice*, 10, 323–34; LaBarge, S. 2005. "Socrates and Moral Expertise." In: *Ethics Expertise: History, Contemporary Perspectives, and Applications*. Lisa Rasmussen (Ed.). Dordrecht: Springer, 15–38; LaBarge, S. 1997. "Socrates and the Recognition of Experts." *Apeiron: A Journal for Ancient Philosophy and Science* 30 (4), 51–62). I consider such a narrowing unjustified, as I discuss in more detail in: Grygieńć, J. 2023. op. cit., chap. 3.

[42] Hardwig, J. 1985, op. cit., 340. Cf. Hendriks, F., Kienhues, D., Bromme, R**.** 2016. "Trust in Science and the Science of Trust." In: *Progress in IS. Trust and Communication in a Digitized World: Models and Concepts of Trust Research*. Blöbaum, B. (Ed.). Cham**:** Springer**,** 145.

FROM MADELEINE J. TO LIBERAL DEMOCRACY*

The political implications of the concepts of interactional expertise and epistemic dependence are enormous. The above notions explain why the liberal solution to fake news and political manipulation through fact-checking and direct citizen-expert debates must necessarily fail. Both undermine the optimistic picture of rational citizens acquiring decision-making competence by obtaining information from experts or other sources. Both dispel the notion that citizens can be epistemically autonomous and develop an informed perspective on any issue given the right tools. A person who has no interactional expertise will never be able to understand an expert or judge the latter's competence. They will never be able to conclusively decide whether the expert is right or wrong, or telling the truth or lying. They will always be epistemically dependent on the expert. Just talking to experts will not confer sufficient competence to settle scientific or technical controversies. It will not even make one capable of telling an expert from a pseudo-expert. Besides, even if Collins was right and linguistic socialization was possible, occasional exposure to briefing materials and occasional conversation with experts do not this process make. It takes a lot more.

The above issues are reiterated in the conclusions of a study on deliberative polling conducted by Laurel Gleason. Gleason accuses deliberative polls of an "inability to produce new content,"[44] since their participants seldom question the expert information provided to them. Gleason's research shows that of the 3500 statements provided to participants in 5 different deliberative polls, only 75 were challenged by them.[45] The rest of the expert claims were accepted uncritically. The laypeople did not problematize them or question them. They had no wish to compare them to alternative opinions. Lay epistemic submissiveness to experts within DIs is the norm. It stems from the fact that laypeople lack the expertise necessary to challenge and understand expert recommendations. Polls, as Gleason shows, do not foster decision-making autonomy but lead to indoctrination.[46]

The implications of IE and epistemic dependence for deliberative systems are similarly problematic. The trouble is that without consulting experts, citizens cannot determine whether we have made the "worst deal with China" or if

43 See Fuller, S. 1991. *Social Epistemology*, Bloomington-Indianapolis: Indiana University Press, 278-279. Cf. Barber, B. 1987. "Trust in Science." *Minerva*, 25 (1–2), 123; Ziman, J. 2000. *Real Science: What It Is, and What It Means*. Cambridge: Cambridge University Press, 97; Fricker, E. 2006. "Testimony and Epistemic Authority." In: *The Epistemology of Testimony*. Lackey, J., E. Sosa. (Eds.). Oxford: Clarendon, 239–244.

[44] Gleason, L. S. 2011. "Revisiting 'The Voice of the People': An Evaluation of the Claims and Consequences of Deliberative Polling." *Critical Review. A Journal of Politics and Society*, 23 (3), 384; Price, V., P. Neijens. 1998. "Deliberative Polls: Toward Improved Measures of 'Informed' Public Opinion?" *International Journal of Public Opinion Research* 10 (2), 161–162.

[45] Gleason, L. S. 2011, op. cit., 384.

[46] See Shapiro, I. 2005. "The State of Democratic Theory: A Reply to James Fishkin." *Critical Review of International Social and Political Philosophy*, 8 (1), 82.

"Poland is in ruins." Answering such questions requires surveying a large quantity of social, economic, and political data. From a layman's perspective, it boils down to adopting one of the interpretative frameworks proposed by experts, which amounts to trust. As Peter Haas puts it,

> "experts highlight issues for the agenda, frame the meaning of those issues relative to pre-existing issues, help to illuminate state interests, privilege policies and shape the international bargaining space through their influence over actors' preferences and the attendant payoff matrices. Experts potentially shape both the consequence and appropriateness for the principals who rely on their advice. While states remain the primary decision makers, framing and advice come from experts."[47]

The concepts of interactional expertise and epistemic dependence compellingly demonstrate how powerless a citizen is when faced with experts. They cannot achieve mutual understanding, and the citizen's chances of epistemic autonomy are negligible. Some liberal political theorists, while recognizing this problem, try to downplay it. Some, while acknowledging that the theoretical complexities of most issues are beyond the cognitive grasp of ordinary citizens, argue that people can always get acquainted with a simplified version of even the most complex statements.[48] The key to success would be "overlapping understanding," i.e. explaining complex issues by relating them to the experience of the average person. The role of interpreters explaining complex issues in such a simplified way could be played by politicians, journalists, intellectuals, science popularisers or representatives of NGOs.[49] According to Thomas Christiano, the fact that part of the scientific community is interdisciplinary may play a vital role in this process.[50]

---

[47] Haas, P. 2014. "Ideas, Experts, and Governance." In: *The Role of 'Experts' in International and European Decision-Making Processes*. Ambrus, M. et al. (Eds.). Cambridge: Cambridge University Press, 20. See Levy, D. M., S. J. Peart. 2017. *Escape form Democracy*. Cambridge: Cambridge University Press, 9-10. Cf. Easterly, W. 2013. *The Tyranny of Experts*. New York: Basic Books, 6–7; Bijker, W., Ball, R., Hendricks, R. 2007. *The Paradox of Scientific Authority*. Cambridge, Mass.: MIT Press; Winner, L. 1977. *Autonomous Technology. Technics-out-of-Control as a Theme in Political Thought*. Cambridge, Mass.: The MIT Press; Winner, L. 1986. *The Whale and the Reactor. A Search for Limits in an Age of High Technology*. Chicago–London: The University of Chicago Press; Rogers, K. 2008. *Participatory Democracy, Science and Technology: An Exploration in the Philosophy of Science*. Basingstoke: Palgrave Macmillan; Streeck, W. 2016. *How Will Capitalism End? Essays on a Failing System*. London: Verso; Mouffe, C. 2000. *The Democratic Paradox*. London: Verso.

48 Cf. Christiano, Th. 1996. *The Rule of the Many: Fundamental Issues in Democratic Theory*, Boulder, Colo.: Westview Press, 176–177; Gutmann, A., D. Thompson. 2004. *Why Deliberative Democracy?* Princeton, NJ: Princeton University Press, 145.

[49] Christiano, Th. 2012. "Rational Deliberation among Experts and Citizens." In: *Deliberative Systems*. Parkinson, J., J. Mansbridge. (Eds.). Cambridge: Cambridge University Press, 38–39; Mansbridge, J. et al. 2012, op. cit., 10–16; Bohman, J. 1996, op. cit., 64, 192.

[50] Cf. Whyte, K. P., Crease, R. P. 2010. "Trust, Expertise, and the Philosophy of Science." *Synthese*, 177, 418; Collins, H., R. Evans. 2002. "Third Wave of Science Studies: Studies of Exper-

> "The economist can explain much of what they understand to the policy analyst. The analyst can explain what they understand of this, coupled with a knowledge of the legal and political background, to the politician or staffer or perhaps to relatively sophisticated journalists. The journalists and politicians can explain what they understand to ordinary citizens. These chains of overlapping intelligibility enable politicians and citizens to have some appreciation of the reasons for and against particular policies."[51]

Indeed, not everything can be presented in such a simple way. The final link in this chain of information will probably be an oversimplified statement about reality, leaving out a number of essential aspects. However, in Christiano's view, the process could enrich citizens' knowledge enough to enable them to make autonomous, informed and competent decisions.[52]

The concepts of interactional expertise and epistemic dependence seem to contradict this claim. Epistemic autonomy requires an understanding of the nature of the issue under consideration. It cannot be based on a simplified vision of reality, the elements of which have been selectively chosen by "interpreters." Besides, this kind of simplified understanding of a problem will not suffice to settle problematic issues or scientific or technical controversies whenever citizens are confronted with several competing, simplified explanations of reality and recommendations for action.

CONCLUSIONS

Liberal practice and theory grapple unsuccessfully with the problem of populism and post-truth. They are waiting for citizens to come to their senses by their own devices, for public debate to become civilized, and for populists and "merchants of doubt" to be defeated. There is no indication that this scenario is about to come true. On the contrary, new and old illiberal forces have been enjoying political success, often openly challenging the scientific consensus. In this article I have tried to propose a new explanation for this victory march: the unavoidable epistemic dependence of laypeople on experts. The concepts of interactional expertise and epistemic dependence explain why it is foolhardy to expect laypeople to grasp the relevance of expert claims, understand the implications of expert predictions and judgments, and to themselves expose pseudoscientists and fraudsters for what they are merely if they are armed with accurate information.

---

tise and Experience." *Social Studies of Science*, 32 (2), 235–296; Collins, H. M. 2004. "Interactional Expertise as a Third Kind of Knowledge." *Phenomenology and the Cognitive Sciences*, 3 (2), 125–143.

[51] Christiano, Th. 2012. op. cit., 39.

[52] Ibid.

Contemporary liberal theory and practice insist that dialogue and reasoned argument can overcome post-truth and manipulation. They are entrenched in the belief that if we could provide citizens with even more accurate information and create spaces in which this information could be discussed with experts and other laypeople in a judicious way, populism would lose steam and peter out. In this article, I have argued that we need to allow for another possibility. No democratic innovation and no discussion with experts can make regular citizens grasp expert arguments and appreciate their importance. Nor will DI participants magically gain the ability to make a conscious and meaningful choice between two conflicting expert options. Their choice will boil down to trusting or not trusting the experts consulted. However, they will never be able to have a specialist discussion with them.

Consequently, DIs will not give citizens a better understanding of reality, but only make them accept as uncontroversial the positions presented to them by the experts. DIs will never identify "enlightened public opinion," as Fishkin expected. Authority over their outcomes will always be held by whoever is responsible for preparing the introductory inputs and selecting the experts for discussion.

It is equally questionable whether ordinary citizens can assess the consequences of laws and legislative solutions adopted by legislators. It is the experts that must evaluate the facts. It is on them that citizens must rely in interpreting and evaluating the effectiveness of the proposed solutions. In short, the epistemic asymmetry between laypeople and experts is a crucial factor to keep in mind when explaining political processes, interpreting phenomena, and diagnosing major social problems. Contemporary liberal theory and practice persistently deny the its existence or downplay its implications.

Acknowledgments

I want to thank the two anonymous reviewers of this text for all their valuable comments, which helped me avoid some inaccuracies.

REFERENCES

Ackerman, B., J. S. Fishkin. 2004. *Deliberation Day*. New Haven, CT–London: Yale University Press.

Allcott, H., M. Gentzkow. 2017. "Social Media and Fake News in 2016 Election." *Journal of Economic Perspectives*, 31(2), 211–236.

Bijker, W., R. Ball, R. Hendricks. 2007. *The Paradox of Scientific Authority*. Cambridge, Mass.: MIT Press.

Bohman, J. 1996. *Public Deliberation: Pluralism, Complexity, and Democracy*. Cambridge, Mass.: MIT Press.

Boyd-Barrett, O. 2020. *Russiagate and Propaganda. Disinformation in the Age of Social Media*. London–New York: Routledge.

Brennan, J. 2016. *Against Democracy*. Princeton, NJ: Princeton University Press.

Burke, E., 1999. "Speech to the Electors of Bristol." In: *Selected Works of Edmund Burke*, vol. 4, Indianapolis, 3–13.

Chambers, S. 2020. "Truth, Deliberative Democracy, and the Virtues of Accuracy: Is Fake News Destroying the Public Sphere?." *Political Studies*. Published electronically April 2. doi: 10.1177/0032321719890811

Cholbi, M. 2007. "Moral Expertise and the Credentials Problem." *Ethical Theory and Moral Practice*, 10, 323–334.

Christiano, Th. 1996. *The Rule of the Many*: *Fundamental Issues in Democratic Theory*, Boulder, Colo.: Westview Press.

____ . 2012. "Rational Deliberation among Experts and Citizens." In: *Deliberative Systems*. Parkinson, J., J. Mansbridge (Eds.). Cambridge: Cambridge University Press, 27–51.

Cohen, J. 2009. *Reflections on Deliberative Democracy*. In: *Contemporary Debates in Political Philosophy*. Christiano, T., J. Christman. (Eds.). Malden, MA: Wiley-Blackwell, 247–264.

Collins, H. 1975. "The Seven Sexes: Study in Sociology of a Phenomenon, or Replication of Experiments in Physics." *Sociology*, 9 (2), 205–224.

—— . 1981. "Son of Seven Sexes: The Social Destruction of a Physical Phenomenon." *Social Studies of Science*, 11 (1), 33–62.

—— . 1996. "'Embedded or Embodied?' A Review of Hubert Dreyfus' What Computers Still Can't Do." *Artificial Intelligence*, 80 (1), 99–117.

—— . 2004. "The Trouble with Madeleine. Response to E. Selinger and J. Mix." *Phenomenology and the Cognitive Sciences* 3, 165–170.

—— . 2014. *Are We All Scientific Experts Now?* Cambridge: Polity.

——.2017. *Gravity's Kiss: The Detection of Gravitational Waves*. Cambridge, MA: MIT Press.

Collins, H. M. 2004. "Interactional Expertise as a Third Kind of Knowledge." *Phenomenology and the Cognitive Sciences*, 3(2), 125–143.

Collins, H., R. Evans. 2002. "Third Wave of Science Studies: Studies of Expertise and Experience." *Social Studies of Science*, 32 (2), 235–296.

——— . 2007. *Rethinking Expertise*, Chicago–London: University of Chicago Press.

Cooke, M. 2000. "Five Arguments for Deliberative Democracy." *Political Studies*, 48, 954–957.

Curato, N., Hammond, M., J. B. Min. 2019. *Power in Deliberative Democracy. Norms, Forums, Systems*. London: Palgrave Macmillan.

Davies, W. 2019. *Nervous States: How Feeling Took Over the World*. London: Vintage

Dreyfus, H. 2000. "Response to Carman Taylor." In: *Heidegger*, *Authenticity*, *and Modernity: Essays in Honor of Hubert Dreyfus*, Vol. 1. Wrathall, M., Malpas, J. (Eds.). Cambridge, Mass: MIT Press.

Dryzek, J. 2017. "The Forum, the System, and the Polity: Three Varieties of Democratic Theory." *Political Theory*, 4, 610–636.

Easterly, W. 2013. *The Tyranny of Experts*. New York: Basic Books.

Elster, J. 1989. *Deliberation and Constitution-making*. In: *Deliberative Democracy*. Elster, J. (Ed.). Cambridge: Cambridge University Press, 97–122.

Elstub, S. 2010. "The Third Generation of Deliberative Democracy." *Political Studies Review*, 8, 291–307.

Elstub, S., S. Ercan, R. F. Mendonça. 2016. "The Fourth Generation of Deliberative Democracy." *Critical Policy Studies*, 20 (2), 139–151.

Elstub, S., O. Escobar. 2019. "Defining and Typologising Democratic Innovations." In: *Handbook of Democratic Innovation and Governance*. Elstub, S., O. Escobar. (Eds.). Cheltenham, UK–Northampton, MA, USA: Edward Elgar, 11–31.

Estlund, D. 2008. *Democratic Authority. A Philosophical Framework*. Princeton: Princeton University Press.

Fishkin, J. S. 1999. "Toward Deliberative Democracy: Experimenting with an Ideal." In: *Citizen Competence and Democratic Institutions*. Elkin, S., K. E. Soltan (Eds.). University Park (PA): Penn State University Press, 279–290.

Fuerstein, M. 2008. "Epistemic Democracy and the Social Character of Knowledge." *Episteme. A Journal of Social Epistemology*, 5(1), 74–93.

Giles, J. 2006. "Sociologist Fools Physics Judges." *Nature*, 442, 8.
Gilligan, J. M. 2019. "Expertise across Disciplines: Establishing Common Ground in Interdisciplinary Disaster Research Teams." *Risk Analysis*, 1–7.
Gleason, L.S. 2011. "Revisiting 'The Voice of the People': An Evaluation of the Claims and Consequences of Deliberative Polling." *Critical Review. A Journal of Politics and Society*, 23(3), 371–392.H
Grygieńć, J. 2023. *Democracy in the Post-Truth Era. Restoring Faith in Expertise*. Edinburgh: Edinburgh University Press
Gutmann, A., Thompson, D. 2004. *Why Deliberative Democracy?* Princeton, NJ: Princeton University Press
Haas, P. 2014. "Ideas, Experts, and Governance." In: *The Role of 'Experts' in International and European Decision-Making Processes*. Ambrus, M. et al. (Eds.). Cambridge: Cambridge University Press, 19–43.
Habermas, J. 1996. *Between Facts and Norms. Contributions to a Discourse Theory of Law and Democracy*. Rehg, W. (Trans.). Cambridge, Mass.: The MIT Press.
Hannan, J. 2018. "Trolling Ourselves to Death: Social Media and Post-truth Politics." *European Journal of Communication*, 33 (2), 214–226.
Hardwig, J. 1985. "Epistemic Dependence." *Journal of Philosophy*, 82 (7), 335–349.
—— . 1991. "Role of Trust in Knowledge." *Journal of Philosophy*, 88(12), 693–708.
Harjuniemi, T. 2022. "Post-truth, Fake-news and the Liberal 'Regime of Truth'—The Double Movement between Lippmann and Hayek." *European Journal of Communication*, 37(3), 269–283.
Harris, C. 2019. "Mini-publics: Design Choices and Legitimacy." In: *Handbook of Democratic Innovation and Governance*. Elstub, S., O. Escobar. (Eds.). Cheltenham, UK–Northampton, MA, USA: Edward Elgar, 45–59.
Hendriks, F., D. Kienhues, R. Bromme. 2016**.** "Trust in Science and the Science of Trust." In: *Progress in IS. Trust and Communication in a Digitized World: Models and Concepts of Trust Research*. Blöbaum, B. (Ed.). Cham**:** Springer**,** 143–159.
Hoffman, M. 2012. "How to Identify Moral Experts? An Application of Goldman's Criteria for Expert Identification to the Domain of Morality." *Analyse & Kritik*, 2, 299–313.
Jamieson, K.H. 2018. *Cyberwar: How Russian Hackers and Trolls Helped Elect a President*. Oxford: Oxford University Press.
LaBarge, S. 1997. "Socrates and the Recognition of Experts." *Apeiron: A Journal for Ancient Philosophy and Science*, 30 (4), 51–62.
LaBarge, S. 2005. "Socrates and Moral Expertise." In: *Ethics Expertise: History, Contemporary Perspectives, and Applications*. Rasmussen, L. (Ed.). Dordrecht: Springer, 15–38.
Landemore H. 2013. *Democratic Reason. Politics, Collective Intelligence, and the Rule of the Many*. Princeton–Oxford: Princeton University Press.
Levy, D.M., S. J. Peart. 2017. *Escape from Democracy*. Cambridge: Cambridge University Press.
Mansbridge, J. et al. 2012. "A Systemic Approach to Deliberative Democracy." In: *Deliberative Systems*. Parkinson, J., J. Mansbridge (Eds.). Cambridge: Cambridge University Press, 1–27.
McKay, S., Ch. Tenove. 2021. "Disinformation as a Threat to Deliberative Democracy." *Political Research Quarterly*, 74 (3), 703–717.
Mouffe, C. 2000. *The Democratic Paradox*, London: Verso.
Mounk, Y. 2018. *The People vs. Democracy: Why Our Freedom is in Danger and How to Save It*. Cambridge, MA: Harvard University Press.
Neblo, M. A., White, A. 2018. "Politics in Translation: Communication Between Sites of the Deliberative System." In: *Oxford Handbook of Deliberative Democracy*. Bächtiger, A., J. S. Dryzek, J. Mansbridge, M. Warren. (Eds.). Oxford: Oxford University Press, 447–461.
Nguyen, C. T. 2020. "Cognitive Islands and Runaway Echo Chambers: Problems for Epistemic Dependence on Experts." *Synthese*, 197 (7), 2803–2821.
Nichols, T. 2017. *The Death of Expertise: The Campaign against Established Knowledge and Why It Matters*. Oxford: Oxford University Press.

Oreskes, N., E. M. Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury.
Pabst, A. 2019. *The Demons of Liberal Democracy*, Cambridge: Polity.
Parkinson, J. 2018. "Deliberative Systems." In: *Oxford Handbook of Deliberative Democracy*. Bächtiger, A., J. S. Dryzek, J. Mansbridge, M. Warren. (Eds.). Oxford: Oxford University Press, 432–446.
Pateman, C. 1970. *Participation and Democratic Theory*. Cambridge: Cambridge University Press.
Persily, N. 2017. "Can Democracy Survive the Internet?" *Journal of Democracy*, 28 (2), 63–76.
Pickard, V. 2018. "When Commercialism Trumps Democracy: Media Pathologies and the Rise of Misinformation Society." In: *Trump and the Media*. Boczkowski, P.J., Z. Papacharissi. (Eds.). Cambridge, MA: MIT Press, 195–201.
Price, V., Neijens, P. 1998. "Deliberative Polls: Toward Improved Measures of 'Informed' Public Opinion?" *International Journal of Public Opinion Research* 10(2), 145-176
Rawls, J. 1993. *Political Liberalism*. New York: Columbia University Press
Rawls, J. 1999. *The Idea of Public Reason Revisited*. In: J. Rawls, *The Law of Peoples*, Cambridge, Mass.: Harvard University Press, 129-180
Ribeiro, R., Lima, F.P.A. 2015. "The Value of Practice: A Critique of Interactional Expertise." *Social Studies of Science*, 46 (2), 1–30.
Rogers, K. 2008. *Participatory Democracy*, *Science and Technology*: *An Exploration in the Philosophy of Science.* Basingstoke: Palgrave Macmillan.
Sacks, O. 1985. *The Man Who Mistook His Wife for a Hat.* Summit Books.
Schumpeter, J. 1942. *Capitalism, Socialism, and Democracy*. New York: Harper & Brothers.
Selinger, E., Mix, J. 2004. "On Interactional Expertise: Pragmatic and Ontological Considerations." *Phenomenology and the Cognitive Sciences* 3, 145–163.
Shapiro, I. 2005. "The State of Democratic Theory: A Reply to James Fishkin." *Critical Review of International Social and Political Philosophy*, 8 (1), 79–83.
Smith, G. 2009. *Democratic Innovations. Designing Institutions for Citizen Participation.* Cambridge: Cambridge University Press.
Solomon, M. 2006. "'Groupthink' versus 'The Wisdom of Crowds': The Social Epistemology of Deliberation and Dissent." *The Southern Journal of Philosophy*, XLIV, 28–41.
Streeck, W. 2016. *How Will Capitalism End? Essays on a Failing System*. London: Verso.
Surowiecki, J. 2005. *The Wisdom of Crowds*. New York: Anchor.
Van Herpen, M. H. 2021. *The End of Populism. Twenty Proposals to Defend Liberal Democracy*. Manchester: Manchester University Press.
Van Wietmarschen, H. 2018. "Reasonable Citizens and Epistemic Pears: A Skeptical Problem for Political Liberalism." *Journal of Political Philosophy*, 26 (4), 486–507.
Waisbord, S. 2018. "The Elective Affinity between Post-truth Communication and Populist Politics." *Communication Research and Practice***,** 4 (1), 17–34.
Whyte, K. P., R. P. Crease. 2010. "Trust, Expertise, and the Philosophy of Science." *Synthese*, 177, 411–425.
Winner, L. 1977. *Autonomous Technology. Technics-out-of-Control as a Theme in Political Thought*. Cambridge, Mass.: The MIT Press.
Winner, L. 1986. *The Whale and the Reactor. A Search for Limits in an Age of High Technology*. Chicago–London: The University of Chicago Press.
Zielonka, J. 2018. *Counter-Revolution: Liberal Europe in Retreat*. Oxford: Oxford University Press.
Zuckerman, H. 2020. "Is 'the Time Ripe' for Quantitative Research on Misconduct in Science?" *Quantitative Science Studies*, 1 (3), 945–958.
https://constitution-unit.com/2016/08/23/fact-checking-and-the-eu-referendum/, accessed on November 7, 2022.

ABOUT THE AUTHOR — PhD, an associate professor for political philosophy at the Nicolaus Copernicus University in Toruń (Poland). Kosciuszko Foundation Fellow for the year 2016. Visiting professor at Brown University (2016) and the University of Oxford (2017). His current research focuses on studies of expertise and experience (SEE) and their implications for participatory and deliberative theories of democracy. He is an author of *General Will in Political Philosophy* (Imprint Academic, 2013) and *Democracy in the Post-Truth Era*. *Restoring Faith in Expertise* (Edinburgh University Press, 2023).

Email: jgrygienc@umk.pl

DIALOGUE AND UNIVERSALISM
32 (3), 2022

Constantin Stoenescu

THE SOCIAL VULNERABILITIES OF SCIENCE AND THE COVID-19 PANDEMIC CRISIS

https://doi.org/10.5840/du202232340

ABSTRACT

According to the traditional image of science, if its achievements are reliable, then they will be communicated successfully and the public will trust in their applicability to solve practical problems. The new perspective on science as "socially robust knowledge" (Gibbons, 1999) is based on two other necessary conditions of knowledge production, namely, transparency and public participation. But the recent Covid-19 pandemic crisis has shown that the institutional weaknesses of the relationship between science and society generates an equally endemic mistrust. Should we go back to "heroic science" and the '"magic of science" to regain trust? Or the pandemic crisis just highlighted that the death of expertise (Nichols, 2017) is inevitable in the public space?

Keywords: Covid-19 pandemic crisis, reliable science, robust science, heroic science, magic of science.

AN ODD CHALLENGE FOR SCIENTIFIC KNOWLEDGE

On the first cover of the December 2021 issue of *Time* magazine we can see a photo with four researchers, Katalin Kariko, Barney Graham, Kizzmekia Corbett and Drew Weissman, accompanied by an eloquent title: "The Heroes of the Year 2021. Vaccine Scientists and the Miracle of mRNA." A passage that mixes several considerations on the method of science and research techniques with the expression of a realistic ontological attitude and the invocation of an Archimedean surprise of finding an inspired solution to the problem seems significant from the perspective of understanding science as a power to change the world. A passage that mixes several considerations about the method of science and research techniques with the expression of a realistic ontological attitude and the invocation of an Archimedean surprise of finding an inspired solution to the problem seems significant to me to understand science as a power to save the world:

> "Progress flows from the gradual accretion of knowledge. In the case of the COVID-19 vaccines, it started with the initially painstaking process of decoding the genomes of all living things; then folded in the development of sequencing machines that reduced that genetic reading time to hours; and finally weaved in the insights—'Put it in a fat bubble!'—that seemed to come in brilliant flashes but were actually the result of wisdom developed over decades working on how to manipulate a finicky genetic material called mRNA. What drives it all might, in less divisive times, seem too obvious to mention: fealty to facts. It's the basis of the scientific method and the structure of our world. Without trust in objective reality, the lights don't turn on, the computer doesn't boot up, the streets stay empty."[1]

Let us do a content analysis of this passage that tries to legitimize the Covid-19 vaccine and the mRNA technique. First of all, the first sentence, "Progress flows from the gradual accretion of knowledge," expresses an old-fashioned cumulative view regarding the progress of science, contradicted for decades by the "New Philosophy of Science" which emphasized aspects of discontinuity, the importance of anomalies, and extraordinary research. But let us suppose that the Covid-19 crisis arose at a time when we were doing "normal science" as "puzzle-solving," which, at least on the surface, according to Thomas Kuhn's description,[2] looks like the cumulative picture of scientific progress. However, I believe that the authors of the article did not even intend to take an epistemological position, but rather to insidiously argue that Covid-19 vaccines were developed as a result of an already socially recognized research on genome decipherment and also to justify that the vaccines were quickly produced as a result of sequencing techniques already used. Therefore, the novelty was just to put it in a fat bubble and to shout "Eureka!." Shortly speaking, Covid-19 vaccines are the result of decades of genetic research and development. Secondly, there follow a remarkable phrase, which summarizes the value of scientific knowledge, both as a method and as a realistic description of the world, given by the correspondence with the facts. But even this time I do not think that the authors wanted to assert their adherence to scientific realism and confidence in the objectivity of science. The key phrase is the reference to "divisive times," a sign that the pandemic crisis we are going through make it necessary to revive a natural ontological attitude, springing from common sense.

Then why all this hard work? The stake is not a philosophical one about the nature and limits of science, but one that has to do with the relationship between

---

[1] See Park, A., J. Ducharme. 2021. "The Heroes of the Year 2021. Vaccine Scientists and the Miracle of mRNA." *Time*, 13 December. https://time.com/heroes-of-the-year-2021-vaccine-scientists/. Accessed:a 11 March 2022.

[2] See Kuhn, Th. 1970. *The Structure of Scientific Revolution*. Chicago: University of Chicago Press, 35–42.

science and society, more precisely, the trust in science. As a result, the main problem become the communication of science, especially how the results of science are communicated to the general public not interested in science but only for the health and well-being of their lives. I think it is obvious that the aim is to regain the trust in science. The authors are ready to pay the price of returning to the communication of scientific results in terms of heroism and the magic of science. It is enough to repeat the title: "The Heroes of the Year 2021. Vaccine Scientists and the Miracle of mRNA." They know that Covid-19 pandemic crisis has divided society over public trust in science, and the challenge for scientists is to regain authority and prestige marred by ignorance and credulity. But they cannot do it alone, it depends on how science is communicated throughout society.[3]

FROM "RELIABLE SCIENCE" TO "ROBUST SCIENCE"

The modern science was understood as a pursuit of truth and it was defined in terms of objective knowledge. To reach the truth, the researcher must be objective, free from any external influences, isolated in the so-called "ivory tower." Any external contamination caused by interests, emotions, prejudices and other idiosyncrasies takes him away from the truth and leads to error. Galileo clearly expressed this view of scientific research: "The conclusions of natural science are true and necessary, and the judgement of man has nothing to do with them."[4]

"The standard view of science"[5] is based on some presuppositions. Natural external world is real and objective, namely, independent of any mind. Therefore, its properties do not depend on any observer, but can be known through impersonal observations. Any scientific theory, understood as a system of hypothetical-deductive structured statements, is intersubjectively communicable and intersubjectively testable, being in this sense under the control of experience. If these criteria of logical consistency and empirical confirmation are met, then science is trustworthy or reliable.

According to this model, science was conceived as a social institution with a certain normative structure guided by values such as universalism, communism, disinterestedness, and organized skepticism which frame together the

---

[3] This does not mean that we have to blame only the absence of some epistemic virtues. Our very society, the much-trumpeted knowledge-based society, has shown its own weaknesses. I looked at these issues in another paper. See Stoenescu, C. 2020. "Criza COVID-19 și societatea bazată pe cunoaștere." In: *Revista de Filosofie Aplicată*, 3, 117–135.

[4] Galilei, G. 1953. *Dialogue on The Great World Systems*. De Santillana, G. (Ed.). The Salisbury Translation. Chicago: University of Chicago Press, 63.

[5] Scheffler used this label in his book *Science and Subjectivity*. See Scheffler, I. 1967. *Science and Subjectivity*. New York: Bobbs-Merrill.

ethos of science.[6] These values are the "pure" source of scientific practice and they ensure the subjective adherence of researchers to the methodology of science in the sense that they believe that only in this way can the goal of describing the world in terms of truth be achieved.

Whether we review this system of values or not, it is important that, from this perspective, knowledge will be considered objective precisely because scientists use such impersonal and universal criteria. Merton himself states: "Objectivity precludes particularism."[7] Thus, the norm of organized skepticism requires that any statement be analysed and tested on the basis of criteria of logical consistency and empirical accuracy. The norm of collectivity demands the free movement and communication, of knowledge, and the norm of universalism presupposes both the use of the criteria of objectivity in the evaluation of statements and the recognition of researchers' merits.

Therefore, the standard epistemological model of science and the normative structure of science as a social institution are interrelated and they explain also the social structure of scientific community as a meritocracy and the relation of scientific community with the wider society.[8] The main epistemic consequence of this model was that failures, errors and any other anomalies were explained both by deviations from the method of science and by violations of the rules of the scientific ethos. As long as the methodological rules are followed and the moral norms are respected, science will prove to be reliable and it will progress for the benefit of society as a whole.

This standard view of knowledge production has been challenged as, starting with the *New philosophy of science* (having Thomas Kuhn, Paul Feyerabend or Stephen Toulmin as representatives) and *The sociological turn* in the historiography of science (with the *Strong programme* proposed by David Bloor and Barry Barnes), it was argued that the so-called external social context influences the content of science and proves to be an epistemic factor.

---

[6] This nomative structure of science was proposed by Robert Merton: "The institutional goal of science is the extension of certified knowledge. The technical methods employed toward this end provide the relevant definition of knowledge: empirically confirmed and logically consistent statements of regularities (which are, in effect, predictions). The institutional imperatives (mores) derive from the goal and the methods. The entire structure of technical and moral norms implements the final objective. The technical norm of empirical evidence, adequate and reliable, is a prerequisite for sustained true prediction; the technical norm of logical consistency, a prerequisite for systematic and valid prediction. The mores of science possess a methodologic rationale but they are binding, not only because they are procedurally efficient, but because they are believed right and good. They are moral as well as technical prescriptions." Merton, R. 1973. *The Sociology of Science. Theoretical and Empirical Investigations*. Chicago–London: University of Chicago Press, 270.

[7] Merton, R. 1973, op. cit., 270.

[8] Mulkay, M. 1977. "Connections between the Quantitative History of Science, the Social Theory of Science and the Sociology of Science." In: *Proceedings of the International Seminar on Science Studies*. Helsinki: Academy of Finland, 54–76.

This paradigm shift in the production of knowledge was radically synthesized and simplified by the theory of the transition from the so-called "Mode 1" to "Mode 2" of knowledge production.[9] This transition was described later as follows:

> "The old paradigm of scientific discovery ('Mode 1')—characterized by the hegemony of theoretical or, at any rate, experimental science; by an internally-driven taxonomy of disciplines; and by the autonomy of scientists and their host institutions, the universities – was being superseded by a new paradigm of knowledge production ('Mode 2') which was socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities."[10]

It is easy to compare the two modes of knowledge production: if according to Mode 1 "pure" science was applied empirically or technologically according to the model of deductive theory testing, in the case of Mode 2 both the selection of scientific problems and the use of results occur depending on the context of their application. If in Mode 1 scientists, isolated in the "ivory tower," free from any social, economic and ideological constraints, have the profile of autonomous researchers, dedicated to the quest for truth and devoted to the values of the universality of science, in Mode 2 the research is directed from outside or context driven, in the sense that the urgency of research projects is determined by society, according to institutional rules and various interests, other than the purpose of discovering the truth. Therefore, science is not free from the social context, its co-evolution is directed by external factors both to the theories as such and to the scientific community in a narrow sense.

Gibbons went even further and proposed rethinking the relationship between science and society in terms of the social contract:

> "Under the prevailing contract between science and society, science has been expected to produce 'reliable' knowledge, provided merely that it communicates its discoveries to society. A new contract must now ensure that scientific knowledge is 'socially robust,' and that its production is seen by society to be both transparent and participative."[11]

The very idea of a "robust science" which is transparent and participative generates a new perspective on the burden of responsibility at the level of sci-

---

[9] The initial version of this theory was stated by Michael Gibbons, Camille Limoges, Helga Nowotny, Simon Schartzmann, Peter Scott, and Martin Trow. See Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., Trow, M. 1994. *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. London: Sage Publications.

[10] Nowotny, H., P. Scott, M. Gibbons. 2001. "Introduction: Mode 2 Revisited. The New Production of Knowledge." *Minerva*, 41, 179.

[11] Gibbons, M. 1999. "Science's New Social Contract with Society." *Nature*, 402, 81.

ence as a social institution. If in the case of Mode 1 we discuss mainly about an individual responsibility derived from the ethos of the scientific community and correlated with its normative structure, in Mode 2 the responsibility acquires an institutional character, and it is articulated with *l'esprit de finesse* not only by the so-called "invisible college" but also by the explicit bureaucratic and formal hierarchy of institutionalized science where some procedures are officially recognised at the level of scientific community and the bureaucratic network offer decisional positions and managerial roles for the members of society at large.

If we accept that the relationship between science and society works according to Mode 2, then we will have a heuristic tool to understand better why politicians and civil servants are trying to use the relationship between science and society to get useful innovations and technologies, why managers support research to maximize their profit, why managerial universities try to find in this relationship a legitimacy for their own activities. Those who still believe in the traditional image of science will say that all these tendencies are eroding science, undermining its autonomy and distorting its status as objective research. Can science remain objective if it is concerned with satisfying special needs and making money? But have not we reached the point from which it is no longer possible to return to the old ideals, and all we have to do is accurately manage the real science and to make it socially robust?

The Covid-19 pandemic crisis marks as well as possible this transition from reliable science to robust science and the tension between the two. We were faced not only with the need for a supplementary theoretical research, but also with the practicality of making and approving a vaccine. Scientific research had already reached a stage where a new type of vaccine based on genetic techniques could have been tested. Therefore, the urgency was a practical one: how to use the theoretical results and to propose a new vaccination technology, And although the theory was logically and empirically reliable, science as an institution caught into a social framework revealed its vulnerabilities just because the practical problem was an usual one, namely, resolving a crisis situation as soon as possible. Why some people did not believed in the scientists capacities to produce a therapy and fell into the trap of conspiracy theories? But, in spite of these unexpected social precariousness, are we justified in blaming science for any guilt if its pure image has been wrinkled? Are the sources of these vulnerabilities internal to science or they have sprung up from the social environment itself?

FROM "HEROIC SCIENCE" TO "SCIENCE UNDER ASSAULT"

The traditional image of reliable science gives it the most favors: science leads to the truth, scientists are like heroes, and the scientific community is a model of meritocracy. The model of heroic science assumes that all hard work is carried by scientists like Galileo, Newton or Einstein, brilliant creative minds

who boldly explore the unknown and enrich our view of the world. But as the relationship between science and its applications began to be viewed in terms of the technological advantages it brought to society, interest in scientific activity also acquired a societal and political dimension.

It was observed that the public appreciates in science not what scientists are doing but other two issues: techniques and natural magic: "The first is the collection of devices that make the life easier to live, or the destruction of life more efficient. The second is the production of strange and wonderful effects without recourse to supernatural agents."[12] Although scientific projects are described and communicated to the public in terms of objective knowledge, they are recognizable as pure natural magic and they are appreciated precisely because they have the power to dominate the natural phenomena.

The tradition of the so-called "heroic science" was challenged and changed by the contemporary industrialized science:

> "scientific research, even of the most inspired and revolutionary sort, is not accomplished by a great man opening his eyes to the world about him, but necessarily grows out of the matrix of a body of highly technical special results. […] Finally, to be able to do this work, the scientist must be an accomplished craftsman."[13]

It becomes obvious that without an industrial organization of science and managerial strategy regarding scientific knowledge it would be impossible for the scientific community to continue its research, "but the assimilation of the production of scientific results to the production of material goods can be dangerous, and indeed destructive of science itself. For producing worthwhile scientific knowledge is quite different from producing an acceptable marketable commodity, like soap."[14]

The progress of knowledge is now possible only through the use of complex technical tools that require a collective effort that forces the scientific community to open up to society and to accept various servitudes to the state and industry. Among other things, this means that the heroes of science no longer practice knowledge for the sake of knowledge, they no longer choose their own research priorities, but wait for the decision to be made by policy makers based on interests.

But as a craftsman's work, science is exposed to different pitfalls if our judgements are influenced by some expectations and interests, especially when the scientists are at the border of knowledge. Medical research[15] and space ex-

---

[12] Ravetz, J. R. 1971. *Scientific Knowledge and Its Social Problems*. Harmondsworth: Penguin Books, 13.

[13] Ibid., 15.

[14] Ibid., 22.

[15] Bruno Latour analyzes the social conditions that led to the acceptance of Pasteur's theory, emphasizing that the experimental evidences on the existence of microbes was viewed from an

ploration[16] are two of the best examples of this complex interaction between science and the social context.

Transparency of decisions and deliberative participation are necessary but not enough to achieve valuable scientific results. Even if the members of a scientific community share a strong validated knowledge according to all the criteria of logical correctness and empirical adequacy, it is necessary for this community to have internal standards on the basis of which to preserve and protect the personal integrity of its members, including sanctions and severe corrections. Only in this way can the scientific community withstand external influences and prove strong enough to ensure the supremacy of science over ignorance. Therefore, the robustness of science also depends on the moral virtues of the community members not only on the epistemic ones and on the epistemic quality of the final product of the research. It is quite simple, the most remarkable scientific discoveries can become deadly dangers if they are used by some villains.

This means that the pressures on science as a social institution and on the scientific community are multiple, coming from different directions. Helga Nowotny[17] tried to draw attention in several articles, published in the 2000s, to the real nature of science as a social institution caught in a social context and subjected to an external assault. I mention the claims that the scientific knowledge have to be understood as a competitive advantage, the dilemma of defining science as a pure public good or as a commodity in the process of privatization and secrecy, finally, the tension between the tendency towards the privatization of research and the public control, both in the form of setting research priorities and evaluating results.

Science is gaining more and more public importance in our contemporary society and it is becoming a structuring component of the social system through the increasingly strong interaction with the economic sector. In fact, economic competitiveness itself is redefined in relation to science, and scientific knowledge becomes a competitive advantage that can make a difference in the market in a way that outperforms traditional resources such as land, labour or capital. This change is all the more evident in the case of new information and communications technologies, but also in other research on nanotechnologies, new materials or the pharmaceutical industry, in all these cases science being a profitable long-term investment. Science and technology are so intertwined at a higher level of both of them so that they become dependent not only on each

ideological perspective. See Latour, B. 1988. *The Pasteurization of France*. Cambridge, Mass.: Harvard University Press.

[16] Ian Mitroff proves that the success of the Apollo landing program has depended on the involvement of the highest political actors. See Mitroff, I. I. 1974. *The Subjective Side of Science. A Philosophical Inquiry into the Psychology of Apollo Moon Scientists*. Amsterdam: Elsevier.

[17] See Nowotny, H. 2005. *The Public Nature of Science Under Assault. Politics, Markets, Science and the Law*. Berlin– Heidelberg: Springer.

other, but also in their depth nature, so that we can talk not only about the industrialization of science, but also about the "scientification of technology"[18] because technology incorporates scientific knowledge so that science becomes the "strong core" of technology. Scientific research has reached the point from where it can move forward only using research tools that incorporate the most advanced technologies, from particle accelerators looking for the "particle of God" to genetically engineered laboratories where even coronaviruses can be investigated. On the other hand, new technologies require a level of training similar to scientific research, and the application of technologies itself becomes a source of experiments and scientific discoveries. As a result, science and technology are moving away from common sense and the public, a fact which creates a gap between the two. This is why communicating science to the public is becoming increasingly important, and communicators are becoming a kind of mediators and creators of science public image. Some of them have public responsibilities, they take decisions. I think we can talk about a new kind of public responsibility for these communicators of science just because the public image of science becomes decisive in making decisions about science.

Science is communicated to the public in different ways, from text schoolbooks to articles in magazines. Using distinctions proposed by Catherine Milne,[19] we shall distinguish between four different types of science stories: (a) heroic, (b) discovery, (c) declarative, and (d) politically correct. Each of these types of story is based on and promotes a particular set of philosophical assumptions about science which are implicitly used as a framework for each story itself. These science stories have to be good stories for the public and, first of all, to have a factual significance. Some of the well-known science stories are those about Galileo dropping cannon balls from the Tower of Pisa, Galileo and his Inquisition trial, Newton and the falling apple, Kekule's dream, or James Watt boiling kettle. Even if they have a doubtful authenticity and a fictitious content, they are successfully used as exemplarities to learn how a scientist is doing heroic science. This way of describe science has become the standard mode of science communication and can be found both in textbooks and in popularization articles: any scientific achievement involves such a heroic episode. But as the epistemological perspective shifts and science has been put into context, other perspectives, including that of political correctness, have become acceptable. Science as a social institution becomes a part of society: it not only provides knowledge, but also is subjected to a real assault because society has some expectations from it and some economic and political interests prevail.

---

[18] See Böhme, G., W. van den Daele, W. Krohn. 1978. "The 'Scientification' of Technology." In: *The Dynamics of Science and Technology*. Krohn, W., E. T. Layton, P. Weingart. (Eds.). Dordrecht: D. Reidel, 219–250.

[19] Milne, C. 1998. "Philosophically Correct Science Stories? Examining the Implications of Heroic Science Stories for School Science." *Journal of Research in Science Teaching*, 35 (2), 175–187.

COVID-19 PANDEMIC CRISIS AND THE DISEASED AUTHORITY OF SCIENCE

Heroic stories help to reinforce the notion of scientific knowledge as a privileged form of knowledge. According to Steve Woolgar, science has been traditionally presented as "something special and distinct from other forms of cultural and social activity"[20] and this imagine emerged in the 17th century enforced the idea that scientific knowledge is determined by the nature of external world and not by the subjective human struggle to unlock the secrets of nature. From this view was derived the idea that the scientific authority is unlimited and have to be beyond any doubt or reproach. But it is a social vulnerability of science to think that if a human activity looks and acts like science it has to produce scientific knowledge. Not even science has this privilege, being fallible and open to error.

The Covid-19 pandemic crisis is that kind of phenomenon that reveals all the weaknesses of science as a social institution from its adequacy to social framework to some of its epistemological traits that have social consequences, such as the lack of certainty. Therefore, the task for scientists and policy-makers is to develop policies that may keep science trustworthy. But we know that without a national and international institutional framework even the most outstanding scientists cannot be sure that his advices are accepted and implemented. The necessary trust between scientists, policy-makers and the public is a common task for all the parts.

The old principles of science policy and communication that enhance the efficiency and quality of science as a part of society have been brought back to attention:[21]

— Fostering capacity to provide advice that fits the national context;

— International cooperation, especially the role of the World Health Organisation as the intergovernmental body that is able to act for monitoring and coordinating the response to the global pandemic crisis;

— Promoting mutual understanding and trust between people and networks;

— Being prepared to learn from past experience;

— Communication with the public in the age of social media.

All these principles were challenged by the pandemic crisis: the national contexts were not only different but also divergent, the international coordination was difficult, the social understanding was more disturbed than coherent, the mitigation measures were not taken before the crisis happen, and, moreover, the communication with the help of new information technologies in the "virtual agora" has often been won over by pseudoscientific channels or networks.

---

[20] Woolgar, S. 1988. *Science: The Very Idea*. London–New York: Routledge, 26.

[21] See OECD. 2022. "Science Advice in Times of Covid-19;" https://www.oecd.org/sti/science-technology-innovation-outlook/Science-advice-COVID/. AccessED: 30 April 2022.

At least we have learned that openness and transparency are critical and that the careful communication of uncertainties and alternatives is necessary. All governments have been criticised for their secrecy or for the fact that they didn't assured a rapid access to different data or for their so-called conspiracy. It was a critical situation that generated a major vulnerability of science caused by public weaknesses, from lack of scientific education and ignorance to credulity and naïveté. Moreover, the Covid-19 pandemic crisis has shown once again that politicians are driven by interests and not guided by science, although they claim otherwise. Other issues that were highlighted by the crisis were the communication of science and the balance between emotions and critical reflection, the various cultural influences in understanding the crisis situation, as well as the ethical consequences or repercussions of the way in which it was communicated.[22]

The vulnerabilities of science communication that have undermined science as a social institution in terms of its credibility and authority have consisted mainly in the prevalence of fake news, various other forms of misinformation or disinformation, and the spread of conspiracy theory. The medical crisis has fostered the expansion of such phenomena to an unprecedented level in recent decades as new forms of social media have developed and created a "global village" network.

Anyway, the impressions were stronger than ever since an expert like Elizabeth Bik frustratedly told to *France Press* on June 21, 2021: "I think the combination of a pandemic with social media and people deliberately putting out misinformation, that gets a lot of people thinking that all science is fraudulent, which it is not."[23] I believe that this statement captures the main vulnerability of science as a social institution that emerged as a result of the takeover of a substantial part of the communication of science by social media. The road to misinformation, fake news and conspiracies was open. But the problem is that there was a public, even too numerous, willing to believe all this. How do we explain this vulnerability?

The authority of science was undermined by a couple of forces and trends that struck in the prestige and authority of science, especially in the positions of experts who thus faced an anti-intellectual environment.[24] The disorder begins right at the academic and university level, that is, right where knowledge is produced, research is done, and science is learned. Self-esteem takes the form of overestimating one's work and, along with academic narcissism, leads to an inflation of academic grades and an over-confidence in own capacities to fulfil

---

[22] For a development of these topics, see O'Hair, H. D., M. J. O'Hair. (Eds.). 2021. *Communicating Science in Times of Crisis: COVID-19 Pandemic.* New Jersey: Wiley Blackwell.

[23] AFP–France 24. 2021. "Science under Scrutiny: Covid Crisis Throws Spotlight on Scientific Research." https://www.france24.com/en/live-news/20210621-science-under-scrutiny-covid-crisis-throws-spotlight-on-scientific-research. Accessed 30 April 2022.

[24] See Nichols, T. 2017. *The Death of Expertise. The Campaign against Established Knowledge and Why It Matters.* Oxford: Oxford University Press.

different academic tasks. The tendency is to award higher and higher academic grades without a correlation with the academic structure and educational needs and with the real quality of the work.

The other trend is to use social media, especially the internet resources and networks, to communicate science and express views on it. Therefore, every person has many alternatives and options, but, unfortunately, the choices are made without academic criteria of selection based on expertise. As a result, the experts are assaulted by opponents who do not start from scientific criteria but are based on the shortcomings and ignorance of the public. The result is an anti-intellectual environment dominated by an inability to understand the complexity of nature, a sense of frustration, and an attitude of rejection the scientific evidence to the advantage of a conspiratorial approach.

The Covid-19 pandemic crisis has shown that although we have never had so much knowledge, we have never been so exposed to fake news and anti-intellectualist manipulations that have led to the marginalization of experts and the undermining of trust in science. I think that this is not just a matter of communicating science but reveals vulnerabilities related to the deep structure of society and the ways it works. Making science robust from the perspective of its relationship with society becomes an urgent task.

REFERENCES

AFP–France 24. 2021. "Science under Scrutiny: Covid Crisis Throws Spotlight on Scientific Research." https://www.france24.com/en/live-news/20210621-science-under-scrutiny-covid-crisis-throws-spotlight-on-scientific-research. Accessed: 30 April 2022.

Böhme, G., W. van den Daele, W. Krohn. 1978. "The 'Scientification' of Technology." In: *The Dynamics of Science and Technology*. Krohn, W., E. T. Layton, P. Weingart. (Eds.). Dordrecht: Reidel, 219–250.

Galilei, G., 1953. *Dialogue on the Great World Systems*. De Santillana, G. (Ed.). The Salisbury Translation. Chicago: University of Chicago Press.

Gibbons, M., C. Limoges, H. Nowotny, S. Schwartzman, P. Scott, M. Traw. 1994. *The New Production of Knowledge. The Dynamics of Science and Research in Contemporary Societies*. London: Sage Publications.

Gibbons, M. 1999. "Science's New Social Contract with Society." *Nature*, 402, C81–C84.

Kuhn, Th. 1970. *The Structure of Scientific Revolution*. Chicago: University of Chicago Press.

Latour, B. 1988. *The Pasteurization of France*. Cambridge, Massachusetts: Harvard University Press.

Merton, R. 1973. *The Sociology of Science. Theoretical and Empirical Investigations*. Chicago and London: University of Chicago Press.

Milne, C. 1998. "Philosophically Correct Science Stories? Examining the Implications of Heroic Science Stories for School Science." *Journal of Research in Science Teaching*, 35 (2), 175–187.

Mitroff, I. I. 1974. *The Subjective Side of Science. A Philosophical Inquiry into the Psychology of Apollo Moon Scientists*. Amsterdam: Elsevier.

Mulkay, M. 1977. "Connections between the Quantitative History of Science, the Social Theory of Science and the Sociology of Science." *Proceedings of the International Seminar on Science Studies*. Helsinki: Academy of Finland, 54–76.

Nichols, T. 2017. *The Death of Expertise. The Campaign against Established Knowledge and Why It Matters. Oxford: Oxford University Press.*

Nowotny, H., D. Pestre, E. Schmidt-Aßmann, H. Schulze-Fielitz, H.-H. Trute. 2005. *The Public Nature of Science under Assault. Politics*, *Markets*, *Science and the Law*. Berlin, Heidelberg: Springer.

Nowotny, H., P. Scott, M. Gibbons. 2003. "Introduction: 'Mode 2' Revisited. The New Production of Knowledge." *Minerva*, 41, 179–194.

OECD. 2022. "Science Advice in Times of Covid-19;" https://www.oecd.org/sti/science-technology-innovation-outlook/Science-advice-COVID/. Accessed 30 April 2022.

O'Hair, H. D., M. J. O'Hair. (Eds.). 2021. *Communicating Science in Times of Crisis: COVID-19 Pandemic*. New Jersey: Wiley Blackwell.

Park, A., J. Ducharme. 2021. "The Heroes of the Year 2021. Vaccine Scientists and the Miracle of mRNA." *Time*, 13 December; https://time.com/heroes-of-the-year-2021-vaccine-scientists/. Accessed 11 March 2022.

Ravetz, J. R. 1971. *Scientific Knowledge and Its Social Problems*. Harmondsworth: Penguin Books.

Scheffler, I. 1967. *Science and Subjectivity*. New York: Bobbs-Merrill.

Stoenescu, C. 2020. "Criza COVID-19 și societatea bazată pe cunoaștere." *Revista de Filosofie Aplicată*, 3, 117–135.

Woolgar, S. 1988. *Science: The Very Idea*. London, New York: Routledge.

ABOUT THE AUTHOR — PhD, Professor, Department of Theoretical Philosophy, Faculty of Philosophy, University of Bucharest, Romania. Books: *Theory of Knowledge. Topics-Texts-Bibliography*, 1999, co-author; *Experience and Meaning.* 2002, *Knowledge Management*, 2007, co-author; *Language*, *Experience*, *Knowledge*, 2009; *Naming and Extensionality*, 2010; *An Epistemological Perspective on Knowledge Management*, 2011; *Environmental Ethics. Reasonable Arguments and Critical Notes*, 2016; *Essays on the History of Romanian Philosophy*, 2016; *Philosophy and Ecology. Concepts, Explorations, Applications*, 2019. He has published more than 130 studies in different journals and volumes on epistemology, philosophy of science, logics, Romanian philosophy, environmental ethics. He edited books on topics devoted to Austrian philosophy, Karl Popper, Willard Orman von Quine, knowledge management, ethics of research. He translated works by John St. Mill, Moritz Schlick, Karl Popper and others. His new philosophical domains of interests are sociology of science and environmental ethics.

Email: constantin.stoenescu@filosofie.unibuc.ro