

## FORUM: REVIEWS AND COMMENTS

## SCIENCE IN SILENCE

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**Summary:** Intellectual and cultural benefits from extended periods of self-isolation have a long history. The ongoing decline in academic freedom, however, distinguishes the coronavirus disease from previous crises. Despite the unprecedented political and economic challenges, as well as the devastating societal disruptions caused by the global COVID-19 pandemic, this study focusses on the fresh opportunities the current coronavirus restrictions offer to question extant academic models and paradigms, in the spirit of creating a more equitable and sustainable research system in the future.

**Zusammenfassung:** Es lassen sich zahlreiche Beispiele für intellektuelle und kulturelle Errungenschaften die aus Phasen längerer Selbstisolation hervorgegangen sind nennen. Ein schleichender Verlust akademischer Freiheit während der letzten Jahrzehnte unterscheidet die aktuelle Corona Pandemie in dieser Hinsicht jedoch von bisherigen Krisen. Ungeachtet der politischen und ökonomischen Herausforderungen, sowie ihrer gesellschaftlichen Auswirkungen, bieten die globalen COVID-19 Maßnahmen Anlass akademische Modelle und Paradigmen zu hinterfragen. In der vorliegenden Studie werden systembedingte Limitierungen diskutiert und Wege für eine gerechtere und nachhaltigere Wissenschaftslandschaft skizziert.

**Keywords:** academic ethos, basic research, collective responsibilities, COVID-19, critical thinking, global crises, intellectual freedom, knowledge transfer

In 1348 CE, while escaping the Black Death in the countryside of Tuscany, Boccaccio writes ‘The Decameron’ (BOCCACCIO 1353). Three centuries later, as the plague ravages London in 1666, an apple falls at Newton’s feet, marking the beginning of his formulation of the law of gravity (NEWTON 1686). Two hundred years ago in the wake of the Tambora eruption, during the ‘year without a summer’, Mary Shelley creates ‘Frankenstein’ (SHELLEY 1818). Today, the coronavirus disease 2019 (COVID-19) and its associated political restrictions and economic consequences are affecting societies worldwide on an alarming level (BEDFORD et al. 2020). Since intellectual and cultural benefits from extended periods of self-isolation have a history, one might expect there are those for whom a voluntary or imposed isolation will inspire great work drawn from deep reflection (despite the reality of the vast majority who are experiencing severe challenges and limitations). To the academic world, what distinguishes this crisis from previous ones is the grow-

ing wedge driven between maintaining the principles of intellectual freedom and the amount of time and resources that is needed for deep thinking, in tandem with an overt threat to intellectualism and rational thinking. The current restrictions therefore present a fresh opportunity to question extant academic models and paradigms, and to prepare for a more equitable and sustainable post-COVID world (ERINGFELD 2020), where basic research is considered as valuable as applied science.

As alt- and biblio-metrics have become central to the evaluation of academic work (CHAPMAN et al. 2019), scientists and scholars of this generation are confronted with increasing pressure from institutions and funding agencies to find a balance between quality and quantity. The proliferation of pseudo-accredited conferences, ill-informed consultants and profit-oriented publishers has created a disruption to how we value academic productivity and in so doing consumes valuable resources and time that otherwise would be dedicated to



support basic research. Consequently, the climate of our academic world has changed towards one that is increasingly entrepreneurial and market-oriented. The tendency towards rewarding projects and investigators that are motivated by economic forces and topical themes undermines scholarly endeavours conducive to risk, novelty and creativity. The mantra of ‘publish or perish’ and the race for ‘mega-grants’ have created a climate of envy and frustration (ABBOTT 2020) among colleagues and institutions that threatens the ethical and professional standards of scientific inquiry in the past. If the marketing of research ideas and personal data absorbs more time, and receives more rewards than the effort to engage in actual field-changing thought (GEMAN and GEMAN 2016), there will be no incentive to pursue creative explorations beyond conforming to current trends and doing whatever is needed to get a paper published or a grant awarded.

Underpinning the evolution of our modern research landscape is the common belief that good science depends on ever-growing international networks. While enhanced collaborations can translate into innovative research, it should be a means to a goal and not the goal itself. It is critically important that at the centre of any research project, no matter what its design might be, it is the inspiration, creativity and stamina of individuals that matter. As we reflect on the ideal research environment, one that is conducive to fundamental discovery, we cannot escape the conclusion that creative processes should not be subservient to organisational demands, but rather the other way around (FLEXNER 1939). For most universities there seems to be no incentive to economize on the growth of administrators and administrative structures with respect to all other institutional sectors (FURSTENBERG 2020). The paradox is, that despite whatever enhanced efficiency administrative investments claim to provide, in reality they translate into increasing volumes of paperwork and time-consuming bureaucratic tasks for researchers. As pressures on university budgets mount, so does the pressure on academics to garner grants with massive overheads. One perverse effect of this situation is that the mere receipt of a grant, in itself, both legitimizes a project and the institution that received the award, whether or not the achievements are consequential. This begs the question, by whose standard then is legitimacy conferred? Such a model is clearly unsustainable at pretty much every level, but its effects are especially insidious when it comes to fundamental research, where ‘success and productivity’ are difficult to evaluate because

their significance may not be immediately realized. Ultimately, deep thinking, which we regard as a key to transformational research, is at risk of being marginalized.

COVID-19 should force scholars all over the world to reflect on their research goals and the ways to achieve them. Limited mobility and a careful utilization of virtual space allows us to step back and take a breath. With more time to read, think and write, we have an opportunity to return to those principles that shaped the academic ethos of the past. Curiosity-driven investigation is one that exposes facts or introduces new perspectives that broaden or refine theoretical discourse. Hypothesis-driven research should prioritise those challenges that constitute the present frontiers of knowledge in any given field. While we acknowledge the importance of debate, its purpose should be to advance knowledge, not flatten or impede it. More specifically, research should move in a direction in which academic evaluations are based on quality rather than quantity, and pseudo-quantitative metrics should not have the power to decide an individual’s career or the future of an institution. Along these lines, we argue for a recruitment system that does not penalize scholars for switching between disciplines and welcomes career changers from outside academia. In order to increase knowledge, journals should accept, and grant agencies should request, fewer but better articles. Rather than focussing on an applicant’s track record, grant agencies should equally consider if the proposed research has the potential to move a field or discipline into uncharted territory. A more balanced distribution of funds between early and mid-career scholars would reduce the bottleneck in the academic system created by the disproportionately high number of PhD students and post-doc researchers competing for positions.

The responsibility to find lessons from the current pandemic lies with each of us. These moments of silence we have been forced to accept have created an opportunity for everyone to take a deeper look at our current research environments, funding guidelines and publication practices. The need to recalibrate our positions in support of basic, fundamental research is all the more urgent now as social trust in knowledge has been severely affected. For this reason alone, universities and academic institutions should reflect on their collective responsibilities, and by all costs avoid the politicization and commercialization of science. Last but not least, academia is well advised to maintain its reflective stance, despite any perceived economic or political uncertainty as-

sociated with the current crises, from coronavirus to climate change. Where else will meaningful leadership and intellectual guidance come from if not from our longest surviving institutions dedicated to providing basic truths and extolling those universal laws that serve humanity? Together, we have the duty (and privilege) to consider reprioritizing altruism, creativity and innovation, as well as critical thinking and dialogue within and between the natural sciences, social sciences, and humanities, because a simple business-as-usual scenario after COVID-19 would be a missed opportunity.

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