

# Viral Modernity

A large, stylized blue virus particle with numerous spikes is centered in the background. The spikes are of varying lengths and are attached to a circular base. The overall color scheme is blue, with the virus particle being a lighter shade of blue against a darker blue background.

## Covid-19 and The Promise of Open Science

Centre for Research in Digital Education, Edinburgh, 22 May 2020

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# Petar Jandrić

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Petar Jandrić (PhD) is Professor and Director of BSc (Informatics) programme at the University of Applied Sciences in Zagreb (Croatia) and visiting Associate Professor at the University of Zagreb (Croatia). His research interests are focused to the intersections between critical pedagogy and information and communication technologies. Research methodologies of his choice are inter-, trans- and anti-disciplinary. Petar's previous academic affiliations include Croatian Academic and Research Network, National e-Science Centre at the University of Edinburgh, Glasgow School of Art and Cass School of Education at the University of East London. He writes, edits and reviews books, articles, course modules and study guides, serves

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## Editorial: the long read

# Viral modernity? epidemics, infodemics, and the 'bioinformational' paradigm

Michael A. Peters , Petar Jandrić  & Peter McLaren

Published online: 31 Mar 2020

Download citation <https://doi.org/10.1080/00131857.2020.1744226>

**Abstract**

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## Abstract

Viral modernity is a concept based upon the nature of viruses, the ancient and critical role they play in evolution and culture, and the basic application to understanding the role of

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# A viral theory of post-truth

Michael A. Peters, Peter McLaren & Petar Jandrić

Published online: 13 Apr 2000

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The First 80 Days of Covid-19

The first case of the coronavirus disease, Covid-19, was officially reported from Wuhan, China, on 31 December 2019 (World Health Organization 2020a). The coronavirus disease had initially been compared with an ordinary flu, and Dr. Li Wenliang, who raised the alarm in the early days of the outbreak, was investigated by the Chinese police and the Public Security Bureau for 'spreading rumours'. Yet it soon became obvious that Covid-19 is far more dangerous than the flu, and Dr. Li Wenliang, aged 33, died of the infection on 7 February 2020 (Hegarty 2020). In spite of their harsh initial reactions to Dr. Li Wenliang's alleged whistleblowing, Chinese authorities soon exhibited remarkable determination in containing

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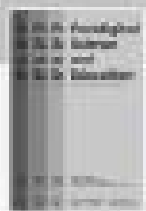
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# Postdigital Science and Education

## Call for Papers - The Day after Covid-19

## The Day After Covid-19

In only few short weeks, the Covid-19 pandemic has changed human life on planet Earth. In popular media, pandemic has started an infodemic of unprecedented scale; fake news and bullshit flourish alongside credible information from sources such as the World Health Organization. In the context of research, the Covid-19 pandemic has initiated historically unprecedented levels of collaboration and openness. Worldwide closures of schools and universities have pushed millions of students and teachers online.



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## Pandemic (Im)Possibilities

Thursday March 24, 2020

Call for short articles for a special issue of "The European Sociologist" - Deadline: 14 April 2020

Special issue of The European Sociologist: Pandemic (Im)Possibilities

The Coronavirus pandemic is changing social life across the world at a very rapid rate. Everyday habits and practices that up until now have been taken for granted are either being altered in multiple ways or halted altogether. Governments are imposing ever stricter conditions upon the behaviours of those within their territories.

But at the same time, new modes of sociality are being created in and through the new social situations constantly coming into existence. People are responding in multiple ways - involving both panic and despair, as well as hopefulness, creativity and ingenuity. To live in the time of pandemic. As some previous possibilities are closed down, new ones may now be opening up, perhaps with far-reaching but unpredictable effects.

Many if not most sociologists will be working from home currently, alongside carrying out familial and other responsibilities. The new working

conditions may even considerably impact the way in which we conduct our research and the way in which we communicate our findings. The new working conditions may even considerably impact the way in which we conduct our research and the way in which we communicate our findings.

### Pandemic Education: Philosophy of Education in the Time of Covid-19

A [Cambridge Core](#) Call for Papers for a Special Issue (30 March 2020)

The next pandemic will erupt not from the jungle, but from the disease factories of hospitals, refugee camps and cities. Brandy Orest, "How Plagues Really Break," <https://www.nytimes.com/2020/03/20/us/politics/coronavirus-pandemic-will-be-ravaging-like-sheila/>

Covid-19 makes the return of a very old – and familiar – enemy. Throughout history, nothing has killed more human beings than the viruses, bacteria and parasites that cause disease. Not annual diseases like malaria or yellow fever. Not war – not even close. (Huyen Walsh, "Covid-19: The History of Pandemics," <https://www.bbc.com/news/health-5580315>)

There is a literature and philosophy of viruses, of the plague, of the pandemic. Albert Camus' *The Plague* is the classic example of the existential philosophical work. Michel Foucault, Peter Sloterdijk, Timothy Morton, Slavoj Žižek (especially lately in *Pandemic: Covid-19 Shakes the World*), and Giorgio Agamben (especially in "The Invention of an Epidemic"), among others, have addressed the

## Call for abstracts for IRE special issue: Education in the age of COVID-19



Date: 2 April 2020 to 15 April 2020

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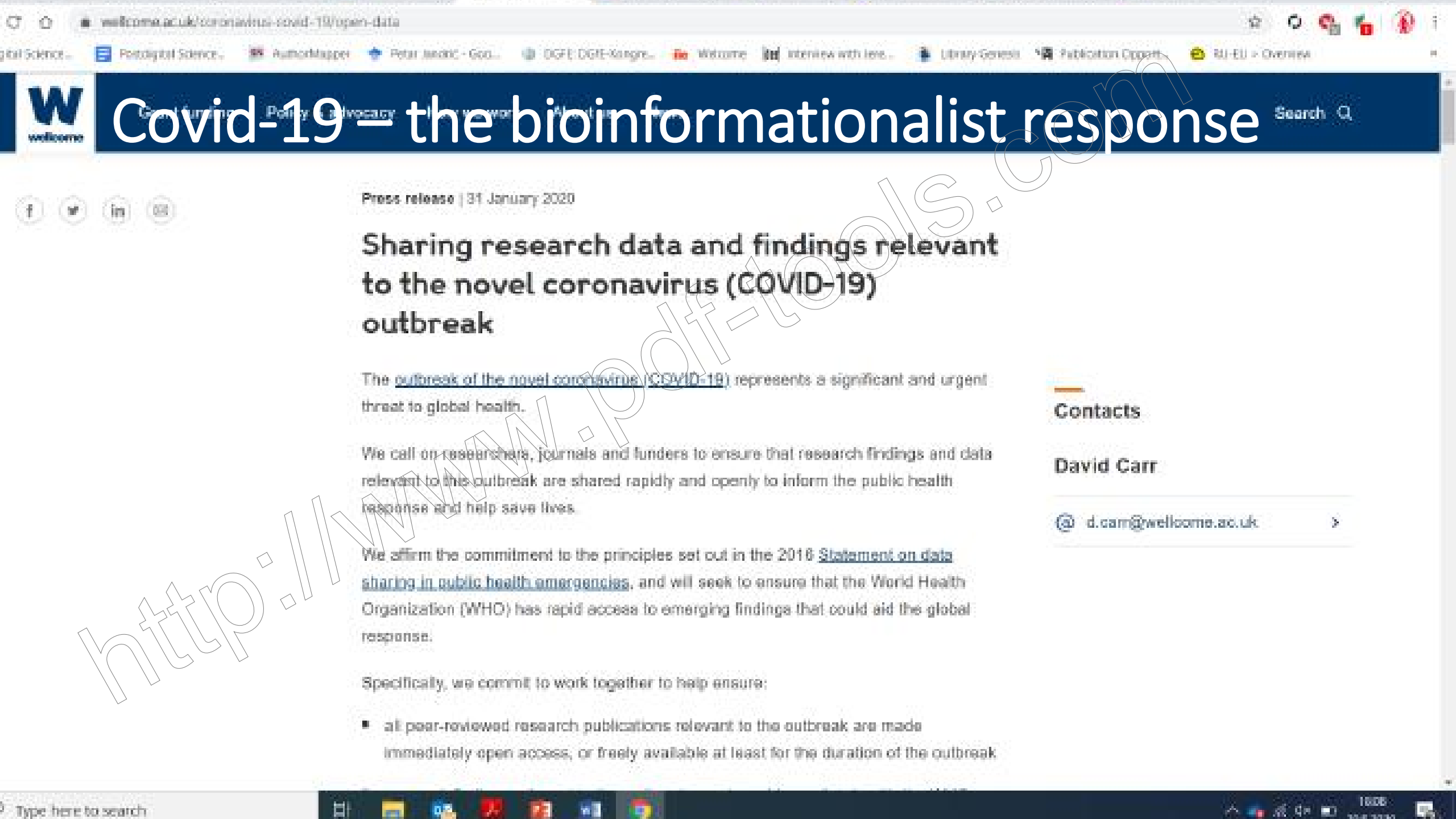
In and Beyond the Era of COVID-19

# Bioinformationalism: Information theory and genomics

- In our postdigital age, contagious diseases such as Covid-19 are at the same time biological (they arrive from nature, and affect human bodies), social and cultural (they illicit socially and culturally constructed responses) and digital (Covid-19 research is enabled and powered by digital technology).
- Developed within a postdigital context, world's response to the threat of Covid-19 says a lot about the viral nature of our modernity.







# Covid-19 – the bioinformationalist response

Press release | 31 January 2020

## Sharing research data and findings relevant to the novel coronavirus (COVID-19) outbreak

The outbreak of the novel coronavirus (COVID-19) represents a significant and urgent threat to global health.

We call on researchers, journals and funders to ensure that research findings and data relevant to this outbreak are shared rapidly and openly to inform the public health response and help save lives.

We affirm the commitment to the principles set out in the 2016 Statement on data sharing in public health emergencies, and will seek to ensure that the World Health Organization (WHO) has rapid access to emerging findings that could aid the global response.

Specifically, we commit to work together to help ensure:

- all peer-reviewed research publications relevant to the outbreak are made immediately open access, or freely available at least for the duration of the outbreak

### Contacts

David Carr

@ d.carr@wellcome.ac.uk

# SARS-CoV-2 and COVID-19

A new virus and associated respiratory disease

Springer Nature is committed to supporting the global response to COVID-19 enabling fast and direct access to the latest available research, evidence, and data.

The need for continued access to research and learning has never been more important. We recognise our role in this and are working with global organisations, such as the World Health Organisation and the initiative from the White House Office of Science and Technology to make all relevant global research, and data, immediately available. We also continue to work directly with teachers, lecturers, librarians, students and institutions to support their work. See more from our CEO, Frank Wrancken Peeters.

So far we have:

- ✓ Enabled free access to over 19,000 articles and book chapters on our platforms
- ✓ Published over 490 new COVID-19 articles and supported all researchers in making their underlying experimental data sets available for free and reuse
- ✓ Made available, via Research Square, over 160 COVID-19 preprint articles

Below, you will find links to key resources, free content and updated information related to COVID-19, alongside key policies and information in supporting



# COVID-19: Novel Coronavirus Content Free to Access



As a leading publisher of trusted science, technology, medicine, humanities and social sciences research, Taylor & Francis is committed to helping public health authorities, researchers, clinicians and the general public contain and manage the spread of COVID-19.

This microsite provides links and references to all relevant COVID-19 research articles, book chapters and information that can be freely accessed on Taylor & Francis Online and Taylor & Francis ebooks in support of the global efforts in diagnosis, treatment, prevention and further research into COVID-19. As signatories to NIH's Access to Research initiative, along with the Wellcome Trust's coordinated action on sharing research data and findings relevant to the outbreak, Taylor & Francis has been working with WHO to ensure this content is clearly signposted. We are also aligning the OSTP's initiative to centralise resources on PubMed and are currently working with them to ensure rapid human and machine-readable access (where possible) to research articles and data through the NLM's LitCovid portal.



## Breaking Research & News

### Tweets by @tandnewsroom



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The number of Asian Hornets, *Vespa mandchurica*, is on the rise in North America. This study shows just how potentially lethal they are with 30 to 50 people dying each year in Japan alone bddy me/2WfNca3/M

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Paul R. Carr &lt;prcarr@gmail.com&gt;

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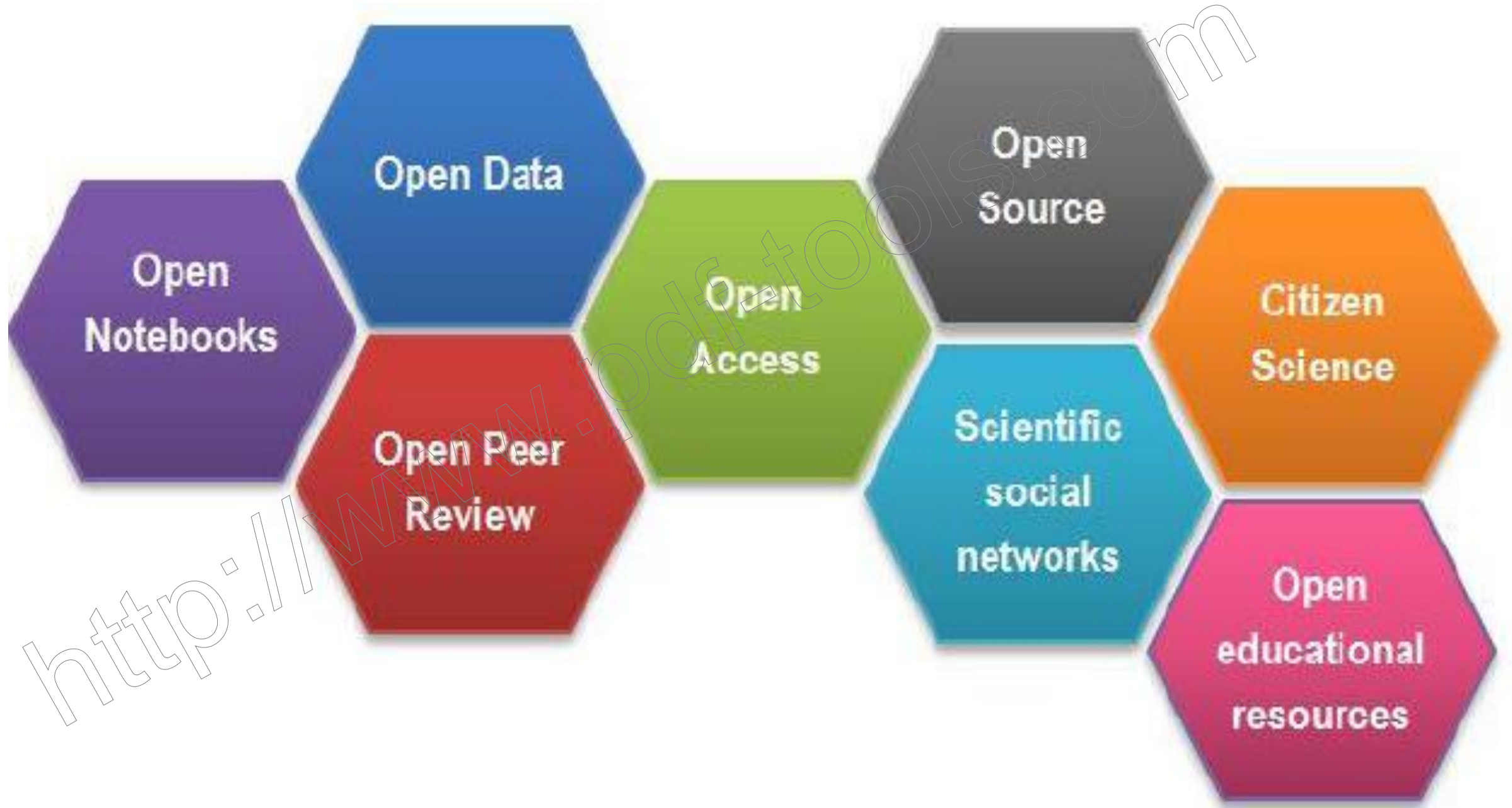
Thank you for submitting your paper "Shooting yourself first in the foot, then in the head: Normative democracy is suffocating, and then the Coronavirus came to light" to Postdigital Science and Education. Our systems have flagged that your paper is relevant to the novel coronavirus, SARS-CoV-2. As a result, there are a number of additional steps that we urge you to take, and some further steps that we will be taking that you should be aware of.

The global pandemic due to the novel coronavirus SARS-CoV-2 represents a significant and urgent threat to global health and as such Springer Nature has signed a [joint statement](#) committing to ensure that research findings and data relevant to this outbreak are shared rapidly and openly to inform the public health response and help save lives.

As part of this commitment, Springer Nature has undertaken to notify the World Health Organization (WHO) of all research that this directly relevant to the outbreak. As such, we will automatically share your research paper with the WHO on your behalf, unless you advise us that you do not wish us to do so within the next 48 hours.

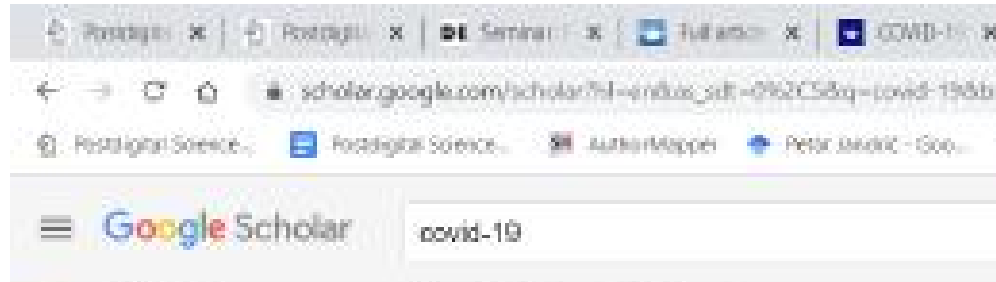
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Google scholar search on Covid-19 virus published between 1 January and 28 February 2020 returned 2,140 unique results (36 articles per day)



**COVID-19: consider cytokine storm syndrome**  
 P. Merits, D. McAuley, M. Brown, E. Sanchez, ... - The Lancet.  
 As of March 12, 2020, coronavirus disease 2019 (COVID-19) has infected 049 people worldwide, carrying a mortality rate of approximately 2%. There is an urgent need to understand the pathogenesis of this disease. There is an urgent need to understand the pathogenesis of this disease. There is an urgent need to understand the pathogenesis of this disease.

**Presumed asymptomatic carrier transmission of COVID-19**  
 Y. Bai, L. Yao, T. Wei, F. Tian, D.Y. Jin, L. Chen, M. Wang, ... - JAMA.  
 Methods | In January 2020, we enrolled a familial cluster of 3 respiratory symptoms who were admitted to the Fifth People's Hospital in Wuhan, China, and 1 asymptomatic family member. This study was a descriptive study of the clinical course and outcomes of these patients.

**COVID-19 and Italy: what next?**  
 A. Remuzzi, G. Remuzzi - The Lancet, 2020 - Elsevier  
 The spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has taken on pandemic proportions, affecting over 100 countries. The response to prepare health systems worldwide is imperative. The response to prepare health systems worldwide is imperative. The response to prepare health systems worldwide is imperative.

**An interactive web-based dashboard to track COVID-19 in real time**

E. Debb, H. Du, L. Gardner - The Lancet infectious diseases, 2020 - thelancet.com

In December, 2019, a local outbreak of pneumonia of initially unknown cause was detected in Wuhan (Hubei, China), and was quickly determined to be caused by a novel coronavirus, namely severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak was quickly determined to be caused by a novel coronavirus, namely severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak was quickly determined to be caused by a novel coronavirus, namely severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

## Information revolution

Scientists are sharing more information using preprints than they did during any previous outbreak. The number of published papers is exploding as well.



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## Undiscovered Public Knowledge: a Ten-Year Update

Don R. Swanson\* and Neil R. Smalheiser†

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### Abstract

Two literatures or sets of articles are complementary if, considered together, they can reveal useful information of scientific interest not apparent in either of the two sets alone. Of particular interest are complementary literatures that are also mutually isolated and noninteractive (they do not cite each other and are not co-cited). In that case, the intriguing possibility arises that the information gained by combining them is novel. During the past decade, we have identified seven examples of complementary noninteractive structures in the biomedical literature. Each structure led to a novel, plausible, and testable hypothesis that, in several cases, was subsequently corroborated by medical researchers through clinical or laboratory investigation. We have also developed, tested, and described a systematic, computer-aided approach to finding and identifying complementary noninteractive literatures.

### Specialization, Fragmentation, and a Connection Explosion

By some obscure spontaneous process scientists have responded to the growth of science by organizing their work into specialties, thus permitting each individual to focus on a small part of the total literature. Specialties that grow too large tend to divide into subspecialties that have their own literatures which, by a process of repeated splitting, maintain more or less fixed and manageable size. As the total literature grows, the number of specialties, but

of unnoticed and unintended logical connections.

### The Significance of Complementary Noninteractive Literatures

If two literatures each of substantial size are linked by arguments that they respectively put forward -- that is, are "logically" related, or complementary -- one would expect to gain useful information by combining them. For example, suppose that one (biomedical) literature establishes that some environmental factor A influences certain internal physiological conditions and a second literature establishes that these same physiological changes influence the course of disease C. Presumably, then, anyone who reads both literatures could conclude that factor A might influence disease C. Under such conditions of complementarity one would also expect the two literatures to refer to each other. If, however, the two literatures were developed independently of one another, the logical linkage illustrated may be both unintended and unnoticed. To detect such mutual isolation, we examine the citation pattern. If two literatures are "noninteractive" -- that is, if they have never (or seldom) been cited together, and if neither cites the other, -- then it is possible that scientists have not previously considered both literatures together, and so it is possible that no one is aware of the implicit A-C connection. The two conditions, complementarity and noninteraction, describe



inadequate even to serve their own profession. They take the above disciplines much more seriously. As Kuhn pointed out for scientific paradigms, a discipline is a path-dependent entity, whose research horizons are constrained by the world-view implicit in its foundational theories and methods. This invariably leaves gaps, not only in the literal sense of disciplines ignoring certain areas altogether but also in the more figurative sense of their ignoring those researchers who have actually published in those areas. The one field that has truly come to grips with this matter is Library and Information Science, which coined the phrase 'undiscovered public knowledge' to characterise the vast majority of published research that remains un- or under- utilised by the academic community of researchers.

The University of Chicago library scientist Don Swanson (1986) coined the phrase to dramatise how solutions to long-standing problems may already be present in the academic literature, but academics are not motivated to read across fields sufficiently to put the pieces from different disciplines together. So the critique here is at least three levels: 1) there's more stuff than can be reasonably read; 2) disciplinary specialisation exacerbates the problem; 3) as a result, when we ask money for 'new research', we may end up reinventing the wheel, in the sense that the answer may already exist and we just don't know it. The last point, which I think is quite profound, goes to question of whether research funding is spent efficiently, given the general state of ignorance by academics of their own avowed body of knowledge. If library and information scientists were taken more seriously in research policy-making, we could address this problem properly.

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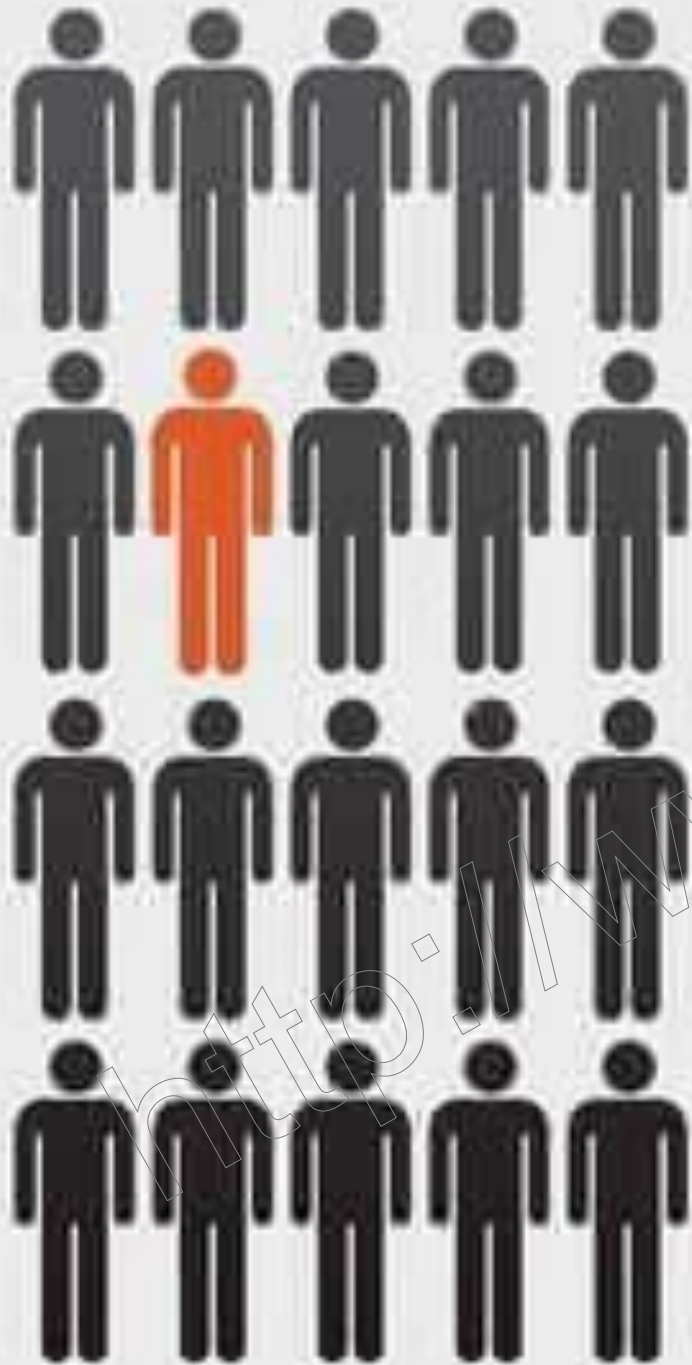
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The objects of study in the work summarized here are complementary structures within the scientific literature. The recognition of meaningful associations and ultimately that of complementarity require a high level of subject expertise. The unruly problems of meaning within the natural language of titles and abstracts present serious obstacles to more fully automating this process of knowledge discovery. Our computer aids are therefore designed to enhance and stimulate human ability to see connections and relationships. These aids necessarily derive from the immense databases that provide the routes of intellectual access to the literature. Our goal thus far has been to produce a working practical system that yields immediate results in furthering the aims of biomedical research, and which at the same time generates data and problems that contribute to understanding literature-based scientific discovery.



**MANY ARE CALLED**  
**BUT FEW ARE CHOSEN**







political work involved in their production and their subsequent implications for a range of education practices and settings.

Ben's book *Big Data in Education: The digital future of learning, policy and practice* was published by Sage in 2017, and Ben is a co-editor of the journal *Learning, Media and Technology*. He maintains a research blog at [codeactsineducation.wordpress.com](http://codeactsineducation.wordpress.com) and on Twitter he is @BenPatrickWill.

Abstract:

## **NETWORKED LEARNING BODIES: MAKING LEARNERS MACHINE READABLE THROUGH PSYCHODATA, BRAIN DATA AND BIODATA**

Ben Williamson, University of Edinburgh

Networked technologies have been central to the advance of data infrastructures and analytics in education, as they permit the movement of data from sites of learning to centres of digital analysis and back. Recently, interests in educational data analytics have begun to merge with practices and technologies from the human sciences, especially the psy-sciences, neuroscience, and genomics. New forms of analysis are being made possible through biometrics, neurotechnologies, and bioinformatics. These advances make the human body and life itself 'machine readable' as signals of underlying biological processes, and are making the body of the learner intelligible in new ways through their 'psychodata', 'brain data' and 'biodata'. In this presentation, I explore how 'networked learning bodies' are produced through emerging assemblages of biometrics, neurotechnologies and bioinformatics—bodies that are understood as complex biological systems, but are also produced through analyses and calculations performed on traces in databases. Networked learning bodies appear as the outcome of computational analyses that depend on data infrastructures, analytics algorithms and the apparatuses of new digital laboratories for educational research, knowledge production, and policy influence. **These developments are poised to transform how educational research is conducted** and how the bodies and lives of students are perceived as objects of policy and practice.



LESLEY GOURLAY



## Viral modernity? Elements of viral-digital philosophy (VDP)

Viral modernity is a concept that is based upon the nature of viruses, the ancient and critical role they play in evolution and culture, and the basic application to understanding the role of information and forms of bioinformation in the social world. The concept draws a close association between viral biology on the one hand and information science on the other – it is an illustration and prime example of bioinformationalism (Peters, 2012) that brings together two of the most powerful forces that now drive cultural evolution. The concept of viral modernity applies to viral technologies, codes and ecosystems in information, publishing, education and emerging knowledge (journal) systems. Evolutionary bioinformatics indicate the conceptual closeness between the two.

Philosophy and the humanities more general are marked by two emergent and profound developments that have already begun to determine their future shape and major theoretical preoccupations: the ecological turn and the digital turn. At the most basic level



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It seems inevitable that digital and biological information will become more integrated in the future. This scenario raises the question of how such an organic-digital fusion might become a symbiosis that coevolves through natural and artificial selection. In a fusion of digital and biological systems, both could contribute their functions to generate a higher unit of organization, similar in effect to previous evolutionary transitions [43]. Such a transhuman vision is referred to as the technological singularity [79]. (Gillings et al., 2016: 188)

If we imagine this bioecological model of information, we can discern both an "ecology of good ideas" such as that expressed in the virtuous circle of exchange that takes place in open science where information is shared and build upon by members of the scientific community, and an "ecology of bad ideas" as the viral circulation of fake news in a post-truth world (Peters et al., 2018). Gregory Bateson (1972: 492) remarks: "There is an ecology of bad ideas, just as there is an ecology of weeds." The rest of that sentence that gets forgotten has a special valence in an age of post-truth, Bateson continues, "and it is characteristic of the system that basic error propagates itself". The history of the basic error that keeps getting propagated Bateson maintains is the idea of 'self' that we have been acculturated to in the West and that has become part of our eco-mental system as the basic operating premise of our thought and experience. Anthropologically speaking, nineteenth century evolutionists encourage an erroneous way of viewing our relations with the environment destroying the earlier forms of animism that was based on an empathy with the natural environment and separating "the notion of mind from the natural world" (Bateson, 1972: 493). The "mind separate from the body, separate from the society, and separate from nature" is the

I enrolled in a doctorate distance part-time starting in Jan 2001. My third essay, written in S1 2002, was published as a research article in an international journal - the first of my papers in EPAT (Educational Philosophy and Theory). It appeared in 2005, two years before I handed in my thesis for examination. When I won my Fast-Start Marsden research grant in 2014, I had 8 journal articles on my CV - today, including co-authored, I'm at ~50... once I realized the importance of publishing to my academic career, I put writing first, day after week after month after year. That's how I publish 10+ articles a year: no 'tricks' - only excellent literacy education, sound mind, passion and hard work, js 🤓

   You, Daniella Forster and 23 others

7 Comments



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## Bioinformationalism: Information theory and genomics (Petar Jandrić)



contrast, goes further in this, according to Ross. In the terms that he adopts from Gilbert Simondon, Stiegler diagnoses the current "ecology of spirit" as "disindividuating" the person: the person (as consumer) is "devalorized,"<sup>24</sup> regarded and treated merely as consumer; whereas ideally we should strive, with our technologies, toward "psychic and collective individuation."<sup>25</sup> In contrast to Bateson, Ross argues, because Stiegler accounts for this, his politics are more powerful, notwithstanding the initial affinities between their two accounts of mind/spirit:

Like Bateson, Stiegler understands the genesis, flourishing or floundering of individual and collective mental processes in terms of a kind of ecology. Whereas Bateson speaks of an ecology of bad ideas, however, for Stiegler what matters more than the bad ideas is the quality of the ecology itself—bad ideas, or no ideas, are the *result* of a bad ecology, that is, of a system that leads not to psychic and collective individuation but to their opposite, to disindividuation. Politics, today, according to Stiegler, can consist only in the struggle against *this* tendency and its multiple consequences.<sup>26</sup>

As we've seen, this is not an isolated instance of the critique of Bateson's lacking political perspective. I will return again to Bateson's politics shortly and argue that notwithstanding shortcomings, his approach in my view *can*

## Postscript (Michael Peters, Petar Jandrić, and Peter McLaren)

Utilising aspects of a viral-digital philosophy we have outlined a concept of bioinformationalism that trades on earlier work in postdigital studies to engage with the history of epidemics and the institutional response to Covid-19 or Coronavirus. At the beginning of March 2020, the world has passed through the early stages of the pandemic, based on one of seven human strands of a virus that started in the city of Wuhan and spread within China killing more than 2,500 people, and threatening the rest of the world where currently numbers contracting the virus are greater than within China. Bioinformationalism is a concept that allows us to observe parallels between viral forms in biology and information and to differentiate between good and bad ideas, as in open science, that develops a virtuous exchange and sharing of ideas, and fake news that propagates error and falsehood through conspiracy theories based on generating fear as a means of control and domination.

We have written this article in the early days of the Covid-19 outbreak. While we developed our viral-digital philosophy, analysed success and limits of open science, and waited for our open reviews, on March 11 the World Health Organisation "declared Covid-19 a pandemic, pointing to the over 118,000 cases of the coronavirus illness in over 110 countries and territories around the world and the sustained risk of further global spread" (Ducharme, 2020). Writing from New Zealand, Croatia, and the U.S., we have suffered different levels of exposure (at the moment of writing, one of us has just started a two-week self-isolation) and witness different governmental responses. Another one of us who teaches in the US has seen visiting scholars he has brought to his university from China just prior to the outbreak of the virus speak early



Thank you!



Thank you!

Petar Jandrić