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Make the Best of the Crisis Whilst it Lasts: Time to Think Like Never Before...

As one pathogen, a virus of the Orthocoronavirinae family (SARS-CoV-2, or the agent of COVID-19), took its hold on humanity, another started to loosen its grip. The latter was *Dataproducus compulsivans*[1]—the infectious agent responsible for severe obsessive result-generation syndrome (SORS). *D. compulsivans* had evaded all efforts to produce a vaccine against it: the pathogen could not be cultured outside the human body; rather the culture medium in which it survived and was transmitted best was a type of research culture based on career anxiety as the main ingredient. Once in the body, *D. compulsivans*—a so-called "memetic pseudovirus"—produced a single-stranded meme by hijacking the one-track mind of its human host. Passed to other members of a research group via close professional contact such as group meetings or departmental seminars, the pseudovirus would rapidly spread to whole institutes: the mechanism of transmission—via a so-called "memetic infectious particle"—was simple: the optical and auditory nerves were the point of entry through which the meme ultimately established itself in the limbic system or "paleomammalian cortex," a part of the brain that facilitates emotion, behaviour, motivation, long-term memory and sense of smell. Importantly, the limbic system includes the amygdala, a small almond-shaped structure (from Greek *amygdale* = almond) considered to be the most ancient of the limbic components.

Until relatively recently, the amygdala was thought to be involved primarily with generating instinctive reactions to fear or threat. However, it is now evident that it rather conveys cues from external emotionally relevant events that have been remembered to their "storage location" in the brain's neural circuitry, so that they may be reactivated and produce a given behavioral response.[2] This is, in essence, a type of learned behavior, and it is triggered much faster than cognitive processes in the frontal cortexes: hence we do, indeed, react instinctively and rapidly to things that we perceive as dangerous or otherwise threatening, and sometimes wish we had "stopped to think" instead... Ah, that was it: "thinking." That reminds me of where I was in the story. So, the long-term effect of *D. compulsivans* infection was an increase in learned behavior at the expense of thinking. The learned behavior was that associated with fear of "failing" in research, and it was encoded in the pseudoviral meme for productiveness. Productiveness was measured in the culture medium by quantity of publishable results, or "data," and hence the emergent behavior in sufferers was an instinctive, unthinking (i.e., compulsive) drive to produce data. Evolutionarily, this secured the continuance of *D. compulsivans*, because the more that others saw and heard of infected fellow researchers producing data, the more they fell prey to the infection themselves.

What happened next is quite extraordinary: a real virus, and not one to be messed with, basically shut down everyone's labs and offices; millions of researchers had to stay at home. At first, the fear was great: most researchers had no ability to generate new data. But as "learned helplessness" started to set in, it was accompanied by a certain boredom. And increasingly researchers started experiencing a reality that others had expressed in witty quotes, from Scott Adams' "I've noticed that my best ideas always bubble up when the outside world fails in its primary job of frightening, wounding or entertaining me" to Steve Jobs' "I'm a big believer in boredom. Boredom allows one to indulge in curiosity, and out of curiosity comes everything." Now all the data and results sitting out there in published papers and repositories—and, importantly, in their own laptops—would act as the researchers' food for new insights, hypotheses, novel ideas in general: their substrate for deep, integrative understanding of a type rarely possible in the rat race of hands-on research. If they had not had time to think about results before, they certainly had it now.

D. compulsivans became dormant in the hosts' neurons, rather like the herpes simplex and varicella zoster virus. But where to publish all of these thought-provoking new insights, ideas, or testable hypotheses? One had to look very hard, but in the publishing ecology, a tiny number of peculiar, rather delightful, journals had clung on in their inhospitable niche, buffeted by financial realities and impact factors. Rather like the explosive radiative evolution of class Mammalia following the demise of the dinosaurs 65 million years ago, these publications were about to come into their own and (it was to be hoped, in a rather shorter evolutionary epoch), fundamentally shape the scientific literature that we know today.

As biology makes the best of a crisis whilst it lasts, so must researchers. We at BioEssays invite you to think freely and generate the memetic diversity that keeps not only our journal alive, but scientific creativeness itself.

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[1] A. Moore, *BioEssays* **2012**, *34*, 1290005.
[2] H. J. Markowitsch, A. Staniloiu, *Neuropsychologia* **2011**, *49*, 718.

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