

“But Nature Started It”: Examining Taubenberger and Morens’ View on Influenza A Virus and Dual-Use Research of Concern

Nicholas G. Evans

Charles Sturt University, Canberra, Australia

In a recent article (1), Jeffery Taubenberger and David Morens examined the way that nature purportedly breaks the rules of the seven experiments of concern that characterize the current paradigm of dual-use research of concern (DURC). They argue that we ought to be mindful that

influenza pandemics, epidemics, and epizootics will continue to wreak havoc for the foreseeable future at the cost of countless lives. In considering the relative merits of supporting or thwarting safe research aimed at better preventing and controlling influenza by elucidating fundamental viral mechanisms, IAV’s own actions should surely be borne in mind (1) [“IAV” stands for influenza A virus].

Yet such an argument, I argue, is a strange way of characterizing the problem of dual use, much less advancing the case for pursuing DURC.

The strangeness of this article is borne out first in the idea of IAV continually undergoing such “dual use experiments.” While evolutionary pressures cause IAV to mutate in ways that mirror the outcomes of the experiments of concern listed in recent U.S. policy (2), it seems a mistake to anthropomorphize nature. The key behind current U.S. policy is to review proposed research that “produces, aims to produce, or is reasonably anticipated to produce one or more of the effects” listed in the experiments of concern (2). To claim that nature conducts research is playing fast and loose with the criteria; that nature breaks the rules smacks of an animism that is hard to fathom.

Second, even if nature does conduct experiments, these experiments are hardly dual use in any relevant sense. The “dual” in “dual use” explicitly identifies research that may be used to benefit or harm humanity (3–6). Yet the evolution of IAV, at least in the cases that Taubenberger and Morens raise, has no benefits to human or animal health (3). If anything, the claim that the authors use to guide their reader’s intuitions—the horrors that nature visits on us via IAV—relies on the idea that there is nothing good to be expected from the natural evolutionary mechanisms that drive IAV.

Finally, it is hard to understand why nature “breaking all the rules” would motivate us to break the rules. Since the 2004 “Fink Report” on DURC (3), the power of nature to cause harm via evolutionary mechanisms creating a gain of function in IAV has been understood; it is understood that two of the legitimate aims of DURC are to understand emerging diseases, such as novel strains of IAV, and to attempt to mitigate the harms caused by such emergence (3, 4). What remains unanswered, here as elsewhere, is the question of how to properly realize the purported

benefits of such research (6, 7). This is a challenge that any opponent of current regulations must address; simply advocating the dangers of IAV does little to combat regulations.

This leaves us with the unsettling impression that the authors want to convince us that “nature started it” and that the only way to finish it is to mirror nature’s efforts. Yet holding up the lives lost to IAV as an example says nothing about how compelling DURC is to pursue unless it can be shown that DURC is the best or only option that we have available to us. As I have argued, that is much more ambiguous than the authors admit.

There is no doubt that investigating the therapeutic modalities available to us through DURC will produce some benefit; no one denies that. The questions should be what types of benefits will these modalities bring and what else is needed to realize these benefits. Claiming that nature is breaking all the rules does not get Taubenberger and Morens the conclusion they want. They have to show that the best way to approach nature breaking the rules is to break the rules ourselves.

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Address correspondence to Nicholas G. Evans, neva9257@gmail.com.