

Geographical and Biological Origin of the Influenza Pandemic of 1918: Update and Correction¹

John Saul²

When the Facts Change, I change my mind. What do you do, sir?
Attributed to John Maynard Keynes (1883-1946)

Abstract: During a possibly unique sequence of events in early 1918, an initially mild influenza virus became stranded within a human population composed of healthy young adults, virtually all whose members had well-functioning immune systems. Instead of dying out, the virus adapted to this hostile environment. An earlier reconstruction of the events by which the virus became stranded (Saul 2018) depended on supposed influenza deaths reported by Barry (2004) for January or February 1918 in Haskell County, Kansas. These non-existent deaths would have occurred weeks *before* the first confirmed cases in early March at Camp Funston, Kansas. But the "Haskell" outbreak to which Barry referred, and which caused 3 influenza deaths, occurred later in March 1918 at the Haskell Institute in Lawrence (Douglas County) Kansas, not Haskell County. This was days or weeks *after* the initial outbreak at Camp Funston.

Key Words: 1918 pandemic, influenza, natural selection, evolutionary selection of 1918 influenza virus, Haskell Institute

1918: Context, Update, and Rectification

"Explaining the extraordinary excess influenza mortality in persons 20–40 years of age in 1918 is perhaps the most important mystery of the pandemic" (Morens and Fauci 2007). Its uncertain place of origin is also an unresolved puzzle.

In Saul (2018), and again here, I argue for a sequence of events that enabled the virus to evolve an adaptive trick that enabled it to preferentially infect healthy young adults with well-functioning immune systems. To do so, an initially mild viral strain would have had to make one or more round trips between the general population and populations exclusively composed of individuals in the prime of life such as those at the Camp Funston (Kansas) army training camp or the Haskell Institute for university-aged students from Native American Tribes in Lawrence, Douglas County, Kansas. Other possibilities include the enormous military camp for British and Imperial troops established at Étapes in northern France. The virus would then be stranded in the prime-of-life population.

Members of a pneumonia commission formed in 1918, men whose names "read like a future who's who of American medicine", were similarly persuaded

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² ORYX, 16 rue du Pré-aux-Clercs 75007 Paris, France. ORCID 0000-0002-2282-2430. E-mail: edit-saul@tomebook2.com.

that the emergence of the flu was "intimately linked to war conditions", the overcrowding of barracks, in particular (Honigsbaum 2019).

In the earlier text (Saul 2018), I followed Barry (2004) and proposed that the round trips had been made by soldiers between Camp Funston and Haskell County (Kansas). Barry (2004), however, had misunderstood the proper noun "Haskell", taking it to refer to Haskell County rather than the Haskell Institute (Hayami 2015, Grant 2019). Dependence on Barry negated the historical portion of my argument but left much or all the science intact, though considerably weakened in the loss of evidence for the proposed round trips.

My earlier conclusion, here reproduced unedited, reads: "The influenza pandemic of 1918 emerged from a multi-step natural evolutionary process that selected for an exceptionally fast-acting viral strain in a population in which a slower acting strain would have rapidly died out. We are again reminded of Theodosius Dobzhansky's teaching that 'nothing in biology makes sense except in the light of evolution' (Dobzhansky 1973)."

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