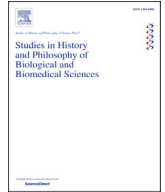




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## Counterfactuals and history: Contingency and convergence in histories of science and life



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### ABSTRACT

This article examines a series of recent histories of science that have attempted to consider how science may have developed in slightly altered historical realities. These works have, moreover, been influenced by debates in evolutionary science about the opposing forces of contingency and convergence in regard to Stephen Jay Gould's notion of "replaying life's tape." The article argues that while the historians under analysis seem to embrace contingency in order to present their counterfactual narratives, for the sake of historical plausibility they are forced to accept a fairly weak role for contingency in shaping the development of science. It is therefore argued that Simon Conway Morris's theory of evolutionary convergence comes closer to describing the restrained counterfactual worlds imagined by these historians of science than does contingency.

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From remarkable simplicity arises immense complexity, yet a basic theme still emerges which confers on evolution a broad predictability. If indeed we can delineate the architecture of life, then two tantalizing prospects arise. Perhaps we can really begin to explore the reality of alternatives, of evolutionary counterfactuals. And possibly ... we shall discover in the end that there are none.

Simon Conway Morris, *Life's Solution* (2003, 48).

The notions of contingency and counterfactualism have often gone together when thinking historically, and this is largely true across the two cultures divide. For the paleontologist Stephen Jay Gould, for instance, it was the central role of contingency in the evolution of life that made history of central relevance to evolutionary biology. He famously expressed this through a counterfactual thought experiment that foregrounded the accidental nature of human existence, an existence that depended, he claimed, on an unlikely sequence of unpredictable contingencies. Historians, as well, have often stressed the contingent nature of human history in order to challenge the twin philosophies of determinism and

inevitability, though for much of the last century historians have largely resisted engaging seriously and explicitly with counterfactual reasoning. If current trends in the history of science are any indication, however, such is clearly changing.

Indeed, a series of counterfactual studies have appeared recently concerning episodes in the history of science, notably the work of Gregory Radick (2005a, 2005b, 2008), Joel Mogyk (2006), and Peter Bowler (2008, 2013).<sup>1</sup> All of these studies have attempted to think about the pathways not taken in the historical development of science and technology. And, interestingly, they have all done so with reference to debates in evolutionary biology that shed light on the nature of historical change. While Gould's thought experiment about the possible histories of life clearly inspired these studies of the possible histories of science, particularly in regard to the role of contingency, they also share some affinity with Simon Conway Morris's seemingly opposing claim about the limited solutions that are actually available for the history of life as evidenced by evolutionary convergence. It is in this way that these recent counterfactual histories of science take into account both the possibilities and the constraints of history. Far from presenting virtual worlds

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<sup>1</sup> See also Pessoa, Jr. (2001), Henry (2008), French (2008), and Fuller (2008).

that look nothing like our own, these studies conform to a “restrained” counterfactual framework that highlights alternative possibilities in order to shed further light on what actually did happen rather than what did not.

After briefly giving a history of counterfactual history, this article will consider the recent restrained versions of the genre that have been produced within the history of science. These studies will then be discussed with reference to debates within evolutionary science about the role of contingency in the history of life. While there is little doubt that these recent counterfactual histories have helped legitimize the genre, the role of contingency—once thought to be integral to the counterfactual—has been minimized in order to construct plausible counterfactual narratives of science that are still tethered in some way to what actually happened.

## 1. Contingency and virtual counterfactual histories

Richard Evans (2014) is only the most recent authority in the historical profession to denounce counterfactual history as little better than entertainment for those unwilling to accept the actual course of history. His criticism of counterfactual scenarios as “wishful thinking” is more than an echo of E. H. Carr’s (1961) now fifty-year old observation that the counterfactual “parlor game” was often played in the hope that history could have turned out differently. Rather than constructing plausible alternatives based on a rich understanding of the archival record, most counterfactual histories have imagined impossible alternatives that tend to expose a given historian’s (typically conservative) ideological commitments.

With reference to the last two hundred years of counterfactual historical writing, it is difficult to find much fault with Carr’s and Evans’s criticism of the genre, a genre that has tended to be as illogical as it is implausible. Arguably the first such history was written by Louis Geoffroy, an admirer of Napoleon, who set out to follow Napoleon’s own speculations about what could have been had the Russians not set fire to Moscow, thereby allowing Napoleon to hunker down in the city during the fateful winter that led to his demise. *Napoléon apocryphe, 1812–1832* ([1836] 1841) supposes that after a winter respite in Moscow, Napoleon would have been able to succeed in his attempted conquest of Europe, which would have been followed soon after by conquests of Asia, Africa, and the Americas. This truly universal monarchy would also have been a progressive one, spreading both Christianity and liberal policies while preserving local legislatures. Wishful thinking indeed.

Ever since Geoffroy’s alternative history of the Napoleonic wars, military historians have been at the forefront of attempting to answer “what if” questions about past battles and diplomatic politics, largely in the format of short, speculative essays. Napoleon, unsurprisingly, has figured heavily in this literature, such as in G. M. Trevelyan’s “If Napoleon Had Won the Battle of Waterloo” (1907) and H. A. L. Fisher’s “If Napoleon Had Escaped to America” (1931). Both of these essays were included in J. C. Squire’s *If It Had Happened Otherwise* (1931),<sup>2</sup> which also included essays by such well-known public and literary figures as Winston Churchill and G. K. Chesterton.

While Squire’s edited collection was the book Carr specifically had in mind when he criticized the genre of counterfactualism as a “parlor game,” there was a larger philosophy of history at work in the book’s conception that implied that the essays were more serious than their content otherwise suggested. As Squire explained in the two-page introduction, “There is no action or

event, great or small (leaving predestination out of our account) which might not have happened differently, and, happening differently, have perhaps modified the world’s history for all time” (1931, v). In this regard, Squire was putting to practice a central historiographical assumption that he argued was too often ignored when historians actually went about their work. This is what the Dutch historian Johan Huizinga in 1934 would refer to as the “indeterminist point of view.” According to Huizinga, “The historian ... must always maintain towards his subject an indeterminist point of view. He must constantly put himself at a point in the past at which the known factors still seem to permit different outcomes. If he speaks of Salamis, then it must be as if the Persians might still win; if he speaks of the *coup d’état* of Brumaire, then it must remain to be seen if Bonaparte will be ignominiously repulsed. Only by continually recognizing that possibilities are unlimited can the historian do justice to the fullness of life” ([1934] 1973, 292).

More recent counterfactual studies have sought to engage more seriously with this “indeterminist point of view,” notably the 1997 collection edited by Niall Ferguson, *Virtual History: Alternatives and Counterfactuals*. While Ferguson’s introduction seeks to legitimize the genre by promoting a certain amount of realism in the “virtual histories” that are pursued, the essays fall into some of the familiar traps of the original counterfactual studies, Ferguson’s own essay being a particularly stunning example. After criticizing the “wishful thinking” that seemed to define previous counterfactual histories in the introduction, in his counterfactual essay Ferguson supposes that had Britain stayed out of the First World War, Germany would have been quickly victorious, and would have then established something approximating a European Union. There would have therefore been no Hitler, no Second World War, and no Holocaust. Meanwhile the British Empire would not have declined, and would have acted as a counterbalance to a German-dominated Europe. Given this more recent and apparently more critical effort, it is difficult to disagree with Evans that the genre of counterfactualism is at best a form of entertainment and at worst an academic cover for what would be otherwise blatant propagandizing. Indeed, while the purpose of these studies is often ostensibly justified to foreground the central role of contingency in human history—to show that there were moments in the past when alternatives were possible—it is somewhat telling that the world that is created just happens to be one more suited to the historian’s own sympathies.

That the genre tends to expose often hidden historiographical presuppositions is interesting in its own right,<sup>3</sup> but Evans fails to appreciate that there are other forms of counterfactual reasoning that need not construct such “virtual” speculations. Of course a certain amount of counterfactual reasoning is often implied whenever causation is invoked, whether the historian relying on this form of reasoning realizes it or not (Kaye, 2010, 38–40). But there are other more explicit forms of counterfactual reasoning that seek to explore the possibilities of alternatives that are more “restrained” than their virtual counterparts. According to Allan Megill (2007), the restrained counterfactualist considers moments when alternative histories were possible, but only to understand further the actual processes of history. “[T]he speculations of the restrained counterfactualist,” in other words, “are pinned down in the end by what actually happened” (Megill, 2007, 153). This is precisely the framework of counterfactual history that historians of science have been recently pursuing by seeking to present plausible counterfactual histories that examine moments when it seems possible to envision alternative pathways. And in doing so, these historians have also been exploring the larger

<sup>2</sup> Actually, Trevelyan’s piece was not included in the original edition of Squire (1931) but was included in the second edition published in 1932.

<sup>3</sup> On this important aspect of counterfactualism see Wurgaft (2010) and Hesketh (2014).

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