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Steven Gimbel. *Einstein's Jewish Science: Physics at the Intersection of Politics and Religion.* Baltimore: Johns Hopkins University Press, 2012. viii + 245 pp. $24.95 (cloth), ISBN 978-1-4214-0554-4; $24.95 (digital), ISBN 978-1-4214-0575-9.

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Relative Perspective, Invariant Truth

The main premise of *Einstein's Jewish Science* is that there may be a positive aspect to describing science as "Jewish," notwithstanding the difficulties in pinning down definitions for both Judaism and science. Gimbel does not suggest an essentialist characterization of work done by a specific group of scientists, but a theme that can be identified and appreciated across scientific disciplines: a view of nature that combines an understanding of nature *sub specie aeternitatis* and from a limited human perspective. Such a composite view of nature is especially pertinent in the case of Einstein's theory of relativity–in which the physics observed from different inertial systems is different, while the underlying laws of nature are universally constant.

It is the aim of this book to address some of the most loaded cultural-ethnic issues in an inoffensive, meaningful way. Gimbel has proceeded under the assumption that we have come to appreciate the relevance of local knowledge and cultural influences, and to view science not as a pristine, naively objective process taking place in a vacuum–but as a human endeavor within a cultural context. This anti-essentialism belongs to the same cultural swing abhorrent of racism and prejudice. All roads taken by a reader into this book are set within this problematic labyrinth: what constitutes a mode of scientific inquiry relatable to an ethnic group, a religion? ; how is a "Jewish point of view" even entertained as a single, treatable, well-defined *object* (interacting with science, yet another difficult-to-define "object")? ; what would Einstein himself have to say about this book? With all considerations of historiography, philosophy of science, and intellectual biography, a foreboding cloud hangs over the premise of the book: that it is in fact possible to find a constructive, illuminating aspect to the definition of a science as ethnically, religiously, and/or racially oriented. The author is well aware of this compound conundrum, and attempts to assuage the reader's reticence to undertake such a journey. It is in this labyrinth that Gimbel offers a foothold: on the one hand, ethnic pride in the achievements of a single person is shown as relevant; on the other, "Jewish" aspects of scientific achievements are expanded as a style of science (not to be confused with Ian Hacking's use of the term[1] independent from any ethnic group. Judaism may be too large and amorphous for this kind of analysis, but the specific person–Einstein–might be easier to work with.

The title of this book raises a question that frames the entire reading: Is it too soon? Has enough time gone by to allow for appraising famously anti-Semitic (and Nazi) identification of certain turn-of-the-century disciplines and directions in art, economics, politics, and science as inferior and damaging due to their ethnic origin and character, as something other than the inner workings of the psychotic banality of evil? This is of course a more sensitive question than the issue of a technical, psychological, and cultural chronology. Academically and intellectually, there are the evolving disciplines of history, sociology, and philosophy of science to assess. Within this context, dissociation of idea from ideology is as difficult a project as one can aim for. Most do not fare into

this stretch of intellectual territory, where monsters still roam and radioactive warning signs are posted at the borders.

The first half of the book constructs the type of "Jewishness" a scientific theory might have–with Einstein's relativity as a main exemplar. It does not purport to draw direct connections between Jewish thought or culture, and the theory of relativity. The author parses the question of "Jewish science" into three: 1) the existence of a typically Jewish style of thinking; 2) the influence of such a style on the theory of relativity; and 3) whether this influence is negative. Questions 2 and 3 are answered in the negative–as Einstein had clearly not been so influenced, his frame of mind was not Talmudic; the bigoted-nonsense aspect of the "Jewish science" as "bad science" is not deemed relevant for analyzing the character of relativity as Jewish. Gimbel dilates on the first question. He posits this question in a generalized sense of "a Jewish style of thinking, an approach that may not be limited to Jews or found in the work of all or even most Jewish thinkers, but which is typical of a certain type of Judaic inquiry" (p. 69). This is an innocuous version that is assumed to have an answer relevant for the history of ideas.

After reviewing scientific moments that carry the mark of a religious vocation without incurring instinctive resistance from the lay reader (although historians of science may flinch) such as Isaac Newton ("Protestant science") and Renee Descartes ("Catholic science") with their respective approach to space and time, Gimbel places Einstein in this scientific-religious-conceptual tradition: "What is 'Jewish style' about Einstein's approach in devising the theory of relativity is his commitment to the existence of an absolute truth that can only be glimpsed through limited perspectives. This notion of a larger truth, expressing itself in the world through context, is formally similar to Talmudic discourses in a way we do not see in the work of Descartes and Newton" (p. 103).

"Jewish science," according to Gimbel, is both a Gods-eye view and a contingent set of truths as gleaned from a limited human perspective. Thus time and space dilations are both dependent on a point of view (the inertial system of the viewer) and part of a theory of invariants (for the totality of events). This legacy of a Talmudic mode of reasoning–which Einstein himself did not experience–does not define every Jewish scientist's work and can be observed anywhere in the scientific community. Works of different scientists and disciplines are examined through the lens of this style. Some are found to be Jewish-style science–such as Emile Durkheim's sociology– and some not, as is the case with Gimbel's description of Sigmund Freud's psychoanalysis (a surprising conclusion given its notorious "Jewishness").

The second half of the book deals with the place Einstein's work and his nonconformist personality had in the politics of science and culture–especially in the political torrents of Weimar Republic. This survey goes deeper into what the Nazis considered as problematic in a Jewish theory, delineating three aspects of "Jewishness": inherent *unhealthiness* contrary to the Aryan constitution and jealous of it, subversive, international *disloyalty,* and pernicious *modernity* where words can distort anything with "Scientific Dadaism."

According to Nazi persecution of anything Jewish, Einstein's work had to be purged so that the true and healthy Germanic experimental science could prosper. Such a science would tune the Aryan genius to the rhythms of the world. It must not be contaminated by empty semantic word-play and self-referential mathematical constructs that do not deal with an actual reality, and therefore lead nowhere–since unlike German experimentalism, "Jewish science" does not have direct contact with the concreteness of reality and the world-spirit pulsating through it. Gimbel surveys the politics, culture, and ideology of this approach to science, from Goethe to the scientific aspirations of the Nazi regime. The German experimentalist balks at the growing influence of theoretical modeling (and dismisses experimental verification by the diligent Arthur Eddington and two international observation teams as "data-fudging"). There is more to this rejection, and the book seeks the deeper story than the one offered by the champion of Aryan science, Philipp Lenard. Jewish style is not the rehabilitated caricature of a Jew from Nazi propaganda to a healthy scientific mode of thinking. That part is not necessary–the tension between theory and practice dates back to the dawn of science, as Einstein himself was well aware.

Einstein's Jewish science is subjected to a bifurcated analysis: As a conceptual mode it is a positive, fruitful influence on science, with some correlation with Talmudic reasoning, but is not related to the Jewishness of Einstein or any specific scientist. Separately, regarding the particular case of Einstein, his public persona and historical contingencies shape his "Jewishness." Gimbel draws a picture in which these distinct aspects of science, culture, ethnicity, and religion reinforce each other while remaining separate.

In what may be considered a salute to the entrenched

persistence of pernicious ideas from the past, Gimbel closes the book with an adumbration of a current Internet-age resurgence of anti-"Jewish science" outbursts. In some cases Einstein himself is the target, with personal and anti-Semitic overtones governing the narrative. Whichever way these are explained or simply exhibited, Gimbel makes sure that complacency does not set in, since bad ideas have a way of sticking around. One might speculate that the end of the book actually makes it clear that it *is* in fact too soon. However, though this is not made explicit, it seems that the philosophical guideline is that if we were to wait around for malignant, bigoted notions to fade away before discussing a positive sense of "Jewish science" (or his version of "Jewish-style science"), it would be a very long wait indeed.

It is important to keep in mind that this book belongs to the genres of popular science and the history of science, written by an academic but not structured to cater to all the needs of an ongoing academic conversation. That being said, there is a feeling of conceptual and historical quasi-Hegelian connect-the-dots that fits the analysis a bit too neatly: Catholic (absolutist, deductive top-down science), Protestant (absolutist, inductive bottom-up science) ,and finally Jewish (synthesis?) styles are compared, glossing over important distinctions that should make the intellectual historian grimace.

Some scientific topics pertinent to Einstein, which are not covered in the narrative, definitely justify their own explication: Are the rest of Einstein's works in the miraculous year also Jewish-style science? What of his early contribution to quantum mechanics and then his later opposition to it? Gimbel portrays the wave-particle duality and Einstein's treatment of the photoelectric effect as an instance of Jewish style in science (accepting both the wave and particle nature of the particle) (p. 101), but also recounts his rejection of quantum mechanics with religious overtones (with the famous quote of God not playing dice with the nature of reality). There is brief mention of Spinoza and his influence on Einstein, a conceptual avenue that should be explored further (p. 29).

The proposed style itself could be more significant for appreciating Einstein's work if it could be used to describe how Einstein's theory of relativity would be different (less or more powerfully descriptive) from the version we would have gotten (and almost did, p. 68) from Henri Poincaré.[2]

The "Jewish style" of science as described by Gimbel is not a constricting, essentialist, deterministic shape of an ethnic or cultural mind-set. Quite the contrary, it is a loose term used to describe a certain aspect of Talmudic literature; once described it doesn't even pertain necessarily to Jews in particular, but to those research modes that accept multiple viewpoints of an absolute truth in the background, an idealized notion of Talmudic discourse (often enough *not* the style of discourse one encounters in Jewish circles). If taken as a popular description, without pretentions of hard proof, it is an easier pill to swallow–as far as disdain from whiggish histories go. At the same time its impact and poignancy are reduced: "Jewish-style" science, has similar constraints on the conceptual menu as a Jewish-style deli might have on its cutlets. As Gimbel puts it, "Again, this is a metaphorical sense of the word 'Jewish'. There is no claim here that it is in any way related to Torah, Talmud or anything else connected with Jewish history or customs" (p. 111). Of course dubbing Einstein's theory of relativity as a Jewish style by no means makes it (and Einstein himself) less of a target for those who look to it as a scientific antichrist. As the author shows, an essentialist view of this scientific mode remains just as venomous.

The question of Jewish science or the "Jewish genius" is difficult to assail for various reasons, not the least of which is the knee-jerk reaction to anything adopted as concrete truth by the Nazis. It seems safer to dismiss the whole issue than to open the racist box where achievements are interpreted as some ethnic baggage, turned into a sign of something essential. Gimbel nevertheless makes the effort to bypass this aversion. He lays out the opposition offered by people like Philip Lenard, and does not get bogged down with refutations of the Nazi portrayal, nor by the opposite, overly enthusiastic lionization of Einstein's "Jewish mind." Putting those to rest, a new possibility emerges that makes Jewish science the legacy of all science. Einstein's own exploits in the Weimar Republic and later in the United States, complete the political picture of his science and remain an important lesson to those scientists who think of their work and influence as separate from the public sphere.

There are many more Jewish modes of reasoning that directly and indirectly impacted on science and ideas over the course of history. As Gimbel acknowledges, there is much more to Talmudic reasoning than a pluralistic metaphysics, with the various cultural, legal, religious, and conceptual influences poured into the ongoing conversation that is the Talmud. The dialectic perspective of an absolute truth and a contingent access to it is indeed a part of the Talmudic frame of mind, but by no means is it the only one. Overall the main premise rings true but partial. For example, it seems to me that

the impact of Jewish thought on the rationality of the world-picture, physical and metaphysical, should be at least mentioned (such as the influence of Kabbalah and Hermetic traditions at the roots of the scientific revolution), but this is not meant as a critical appraisal of omission. A noncommittal style as proposed in the book is an enticing conversation opener; I certainly hope to hear the rest of the conversation.

Notes

[1]. Ian Hacking, "'Style' for Historians and Philosophers," S*tudies in History and Philosophy of Science Part A* 23, no. 1 (1992): 1-20.

[2]. Cf. Peter Galison, *Einstein's Clocks, Poincaré's Maps: Empires of Time* (New York: W. W. Norton, reprint, 2004).