

## "I'm taking the side of humanity": On Einstein's Ethics of Science in National Geographic's First Season of *Genius*

Norbert Schaffeld

In 1899, when Albert Einstein (1879-1955) was about to turn twenty, he wrote to his sister Maja claiming: "If everyone lived such a way, namely like me, the writing of novels would never have been invented" (qtd. in Isaacson 39). But, instead of being hypothetically co-responsible for an alternative course of literary development, Einstein's life has inspired numerous novelists, playwrights, and directors to create their own artistic accounts of his multifarious biography. Any collection of this corpus involving Einstein as the protagonist or a major character would include: Alan Lightman's novel *Einstein's Dreams* (1993), Vern Thiessen's play *Einstein's Gift* (2015), Fred Schepisi's film *I.Q.* (1994), Peter Jones' documentary biography *Einstein Revealed* (1996), and Philip Martin's TV production *Einstein and Eddington* (2008), to name but a few. However, especially in terms of the time span covered, its thematic scope, and the length of the production, none of the fictional, dramatic, or filmic representations of Einstein's life and achievements can be favourably compared with the National Geographic channel's highly acclaimed first season of *Genius* (2017)<sup>1</sup> starring Johnny Flynn (1983-) as the young scientist and Geoffrey Rush (1951-) as the prominent physicist. Yet, in spite of many favourable reviews, for instance, in *The Guardian*, *The New York Times*, *The Jerusalem Post*, *The Globe and Mail*, *The Sydney Morning Herald*, and other important papers, the first season of the TV anthology *Genius* has surprisingly not met with the scholarly attention it deserves. The nominations for, among others, the Primetime Emmy Awards and the Golden Globe Awards have not evoked a different academic response. This is odd as the ten-part TV drama, aired on the National Geographic channels of 171 countries and in 45 languages, deliberately addresses a number of issues topical today. Without raising claims to completeness, the list comprises: the ethics of science, academic freedom and scientific counter-discourse, scholars at risk, racism, exile, social closure, the role of gender in academia and research, the balance between professionalism and family, and long-distance relationships. *Genius* thus invites the audience to meaningful historical comparisons that would include many references to present-day situations.

The first season of *Genius*, comprised of ten episodes delineated as chapters, was created by Kenneth Biller, Noah Pink et al. With Walter Isaacson's biography *Einstein: His Life and Universe* as its primary source and a running time of roughly eight hours, this season considers numerous aspects of the life of the theoretical physicist and Nobel Prize winner from his early childhood to his death in 1955. When dealing with Einstein, the first season of *Genius* does not follow a linear approach of what Brewer and Lichtenstein called an event-structure (363-79; Glaser et al. 435), instead, it features a discourse structure (Brewer and Lichtenstein 363-79; Glaser et al. 435), a complex chronological sequence of the events with many analeptic scenes. It is also no coincidence that the final episode of the production juxtaposes the debatable scientific interest in Einstein's brain ("Einstein: Chapter Ten": 46:15-47:25) with a brief review of his life ("Einstein: Chapter Ten": 47:25-48:00). This includes a new scene in which the sharp five-year old Albert drills his father with questions about the workings of a compass ("Einstein: Chapter Ten": 48:00-48:30). Indeed, references such as this are given pride of place in many documentary biographies of Albert Einstein

whenever they attempt to trace "the origin of his famed curiosity" (Radcliff 64). But, before the three major phases of Einstein's life can be scrutinized with respect to the ethical demands they involved, the task of this article, its objectives, and the analytical tools used ask for some clarification.

### **The Task: Studying the Narrativisation of Einstein's Humanist Ethics of Science**

It is the key objective of this article to study the content-related and formal narrative way in which the TV production emphasizes the interdependence between Einstein's ethics of science and the public policies he has to cope with; an interface that merits critical attention because it is increasingly prevalent in contemporary contexts, especially in terms of the growing influence policymakers bring to bear on scientists. In *Genius: Season 1*, the corresponding scenes see the famous physicist walking a fine line between what, for him, are the universal ethics of his profession and the growing demands, gatekeeping practices, and strategic plans of the politicians who dominated German and US-American government policymaking from 1914 to 1945.

What are the structured approaches contemporary philosophers tend to prefer when they elucidate concepts of ethics in the sciences and Einstein's own stance? According to Briggie and Mitcham, science does not represent a value neutral practice that otherwise might have secured its independence from ethics (90), which is generally understood "as the systematic study of norms and values in human conduct" (4). Referring to Snow's idea of the responsibility of scientists, put forward in *Science and Government* (1961), Briggie and Mitcham point to the decision making of the scientist that inevitably involves scientific ethics:

The way science is conducted and used and the magnitude and type of scientific research performed – research that holds increasingly important implications for society – are the result of choices. These choices present profound ethical questions [...] (12)

Briggie and Mitcham go on to differentiate between three major ethical theories: virtue ethics, consequentialism, and deontology. While virtue ethics entails the character of the agent, consequentialism underscores the quality of situations resulting from specific actions. Deontology, in turn, "emphasizes the intrinsic rightness or wrongness of actions themselves" (29). For Michalos, Einstein's moral philosophy was clearly founded on humanistic thought (347) with Aristotelian ethics as one of its forerunners. Aristotle's virtue ethics is known as a significant concept with implications for the "relations between ethics and science" (Briggie and Mitcham 41) when it concentrates on the character of the agents, that is, of the scientists. As humans who want to live well in an Aristotelian sense:

they must develop certain potential character traits, capacities, skills, or excellences in their behaviors or conduct. Insofar as these skills become ingrained into a person and facilitate flourishing [*eudaimonia*, i.e. happiness as an objective quality] they are called good habits or virtues. (Briggie and Mitcham 42; my addition)

How then does the first season together with the various modes it uses delineate Einstein's humanist ethics of science? This central question, and its complementary multimodal part, will be discussed in greater detail. But, prior to that, a terminological

toolbox has to be briefly opened to make sure that readers with different disciplinary backgrounds share an identical point of departure.

What the "progressing story arcs" (Kelleter 12) of the first season of *Genius* unfold is a trajectory of Einstein's life with a complex process of narrative coherence building that heavily relies on a hermeneutical understanding of the meaningful interrelationship between individual parts and the whole filmic text. Seen this way, one logical consequence of the analeptic preferences of the format clearly ensues. The audiences, which also include those of video streaming services, are well advised to follow the unfolding storyworld from one episode to the next in order not to miss the extra piece of multimodal information that, for instance, editing techniques can provide. Audiovisual representations of storyworlds are known to employ, in Thon's words, "mise-en-scène, cinematography, montage, and sound" (75) to achieve a medium-specific depiction. It has long been part of media studies to emphasise the relevance of multimodal configurations which determine the mediality of a specific medium (Thon 72), to combine different semiotic modes in order to convey meaning. Given the well-stocked toolkit of convenient modes, namely image, writing, layout, music, gesture, speech, moving image, and soundtrack (cf. Kress 54), each selected scene of Einstein's season of *Genius* is also discussed in terms of its meaningful multimodal configuration. The latter generates, to use Ryan's phrase, "the total imaginative experience" (Ryan 20). The underlying assumption here is that the narrativisation of Einstein's humanist ethics of science in the first season of *Genius* creates a specific mindscape amongst the audience in terms of its conceptual and nonconceptual variety. While the former operates on the basis of the verbal, the latter's way of representation can be compared to that of the pictorial (Thon 74-75). In short, the complementary part of the paper's objective can be adequately addressed by the following question: To what extent does the first season's multimodal design, support, add, or modify the verbal elements of the narrative and their meaning (Bateman et al. 112-36) whenever and wherever the hero has to negotiate the path of humanist ethics of science in an increasingly adverse or demanding sphere of public policies?

The timeframe of the analysis is not an arbitrary one. As it expands from the beginning of the First World War to the end of the Second World War and its aftermath, my reading of the first season can therefore focus on three major political developments that Einstein had to cope with as a "philosopher-scientist" (Briggle and Mitcham 207): the pro-war mentality of fellow scientists at the Prussian Academy, among them Max Planck (1858-1947) and Fritz Haber (1868-1934); the anti-Semitic Nazi assaults as well as the oppression of Jewish scientists at the end of the Weimar Republic; and the consequences of the Manhattan Project. Given the chronological order of the article, the context of the First World War is the one to begin with.

### **Einstein and the Pro-War Mentality of Fellow Scientists at the Prussian Academy**

Much of the first season of *Genius* is devoted to drawing attention to diverse academic gatekeeping processes, notably in Zurich, Prague, and Berlin. Among those who finally support Einstein's emergent scientific counter-discourse (cf. Schaffeld 36-41) on relativity and who are willing to pave the way towards a proper professorial position are two future Nobel Prize winners; the theoretical physicist Max Planck and the chemist Fritz Haber. His major opponent, however, turns out to be Philipp Lenard (1862-1947), the Nobel Prize winner for physics in 1905, later to become an active supporter of Nazi ideology.

It is in "Einstein: Chapter Five" that Max Planck (Ralph Brown) visits Einstein at his flat in Zurich in 1913. Yet, this filmic narrativisation stands in noteworthy

contrast to the historical situation when Planck, together with Walther Nernst (1864-1941), met Einstein in his office at the Polytechnic (Isaacson 179). The spatial difference matters because it gives the director Kevin Hooks the favourable opportunity to link Planck's entrance to the preceding scene in which Einstein seems to have an epiphanic moment when he and his small son Eduard are fascinated by a little spider rotating on a gramophone record. This is the dialogue that ensues when Planck enters the living room:

EINSTEIN. Herr Professor, what an unexpected pleasure. What, what brings you to Zurich?

PLANCK. Well, to begin with, I've found you an astronomer. Name is Freundlich. He's young, but ambitious.

EINSTEIN. You must tell me all about him, but first, take a look at the spider on the record.

PLANCK. Ah. *Agelena labyrinthica*, I think.

EINSTEIN. Oh, you know each other? [*Planck chuckles.*] Ask her what's the ratio of the diameter of the record to the circumference.

PLANCK. Pi, of course.

EINSTEIN. Not to the spider, it isn't. Because of relativity, the circumference is shorter in the direction of rotation.

PLANCK. I'm not sure I follow.

EINSTEIN. This beautiful little creature has given me the key to formulating general relativity. It cannot be done with three-dimensional geometry. [...] I need four dimensions. This is wonderful, don't you see?

PLANCK. I hope that you'll think that this is wonderful, too. [*Planck presents a letter.*]

EINSTEIN. The Prussian Academy.

PLANCK. It's an official offer. ("Einstein: Chapter Five": 44:50-46:05)

Moving the setting of the scene in which Planck proposes a very attractive position in the Prussian Academy of Sciences to Einstein's private place inevitably helps to secure a revealing multimodal reading. Indeed, the spatial allocation of overlapping character configurations fully supports a mental representation that aligns speech with the moving image. The bottom line is that this scene clearly reflects Einstein's position at the crossroads between science and family life. That he will not opt for the latter becomes obvious the moment Planck enters. When Einstein kindly asks his small son to "[g]o with Mama [Mileva Marić (1875-1948)]" ("Einstein: Chapter Five": 44:49), the audience will surely identify the proleptic quality of that request. In a manner which it is tempting to call typical, the TV production juxtaposes this foreshadowing of the family rift with the attractions that science has in store (Levenson 149-50). Though highly effective on screen, the almost stereotypical epiphanic moment reduces a long thought process on the general theory of relativity and spacetime "to a moment of chance" (Radcliff 66). The fascination of a possible discovery, the insights that follow acts of visualisation, and the wit and humour of someone who is convinced of his scientific mission, they all come into play when the audience has to weigh the public against the private Einstein within the unidirectional or parasocial interaction and relationship provided by the TV drama (Glaser et al. 438-39).

Among the fellows of the Prussian Academy, it is notably Fritz Haber, played by Richard Topol, who has access to both the public and private Einstein. On the day before Walther Rathenau's funeral, which took place on June 27, 1922, the two of them

discuss the future of Jewish scientists in Germany as the police had found Einstein's name on a death list of a right-wing terrorist group. The first part of the scene ("Einstein: Chapter One": 24:54-25:20) uses a low-angle shot to show Einstein and Haber descending an impressive internal staircase, and this spatial image of losing power matches the content of their lively debate on the prospects of Jewish or converted scientists in German research institutions. This was the situation when adverse physicists, such as Philipp Lenard and his fellow travellers of the right, seemed to gradually gain influence so that exile became the only option left for Einstein.

Eight years before the assassination of Walther Rathenau, another political murder constitutes the overriding topic of a dinner party at the Habers' home with Mileva Marić, Albert Einstein, and his secret love, his cousin Elsa, as their guests ("Einstein: Chapter Six": 11:31-13:05). Fritz Haber bluntly directs the conversation towards the murder of the Archduke Franz Ferdinand of Austria and his wife Sophie by a Bosnian Serb which was to be seen as one of the causes of World War I, to confront Einstein's wife, the Serbian physicist and mathematician, on the issue of Slavic nationalism in Serbia. The opposing ascriptions of anarchy and patriotism mark the political perspectives of Haber and Marić, but before long, the German chemist himself will prove to be an ardent nationalist supporting the war with his scientific expertise. While this will lead to a temporary rift between him and Einstein, which will be discussed in more detail later, the Haber character of the pre-war years acts as both a biased intermediary in Einstein's marital quarrels ("Einstein: Chapter Six": 30:13-32:20) and a much-needed academic gatekeeper. Thus he fully supports Einstein's proposal to the Prussian Academy to at least partly finance an expedition to Crimea in the time frame of an eclipse in order to prove that the sun's gravity bends starlight ("Einstein: Chapter Six": 03:11-06:26). In addition, in the TV episode, created by James Hawes and Brian Peterson, he does so against the opposition of Philipp Lenard, a representative of the dominant discourse of practical science, for whom Einstein is nothing but a charlatan ("Einstein: Chapter Six": 13:05-14:07 and 14:40-15:28).

Later on, in episode 7, created by James Hawes and Kelly Souders, it is Lenard who even manages to successfully prevent an early Nobel Prize nomination for Einstein ("Einstein: Chapter Seven": 42:47-43:15). The editor here uses a telling contrast cut to juxtapose this moment of politically motivated scientific misconduct with the previous scene, set at Cambridge University in 1919 in which the British astronomer Arthur Stanley Eddington (1882-1944) presents his nonchalant and quirky guest of honour at a press conference which only well-versed historians will classify as fictitious (Stanley 317-18):

FIRST JOURNALIST. Mr Eddington, what did your photographs prove exactly?

EDDINGTON. That gravity bends light passing next to the sun by approximately 1.7 arc-seconds, just as Dr Einstein predicted.

SECOND JOURNALIST. Meaning what?

EDDINGTON. Meaning, gentlemen, that the greatest of all scientific generalizations, the laws of Sir Isaac Newton, have just received their first major modification in over two centuries. We are all witness to one of the most resplendent achievements of human thought in our lifetime. – [*in a humorous manner*] Write that down. [*laughter among the journalists*] ("Einstein: Chapter Seven": 42:10-42:46)

Based on their photographs taken during the full solar eclipse of 29 May 1919, Eddington and his two expedition teams provided what was considered to be valid confirmation of the deflection of light by the sun as Einstein himself inferred when formulating the field equations in 1915 (Isaacson 255-62; Stanley 252-95). As indicated above, Eddington's fulsome praise of Einstein's achievements and his mock serious, but nevertheless firm recommendation to put it on paper, establish a well-founded scientific opposition to the essence of the following scene, in which Philipp Lenard denounces general relativity as a hoax ("Einstein: Chapter Seven": 42:47). What this contrast cut makes clear is the striking evidence of his adversative scientific outlook. Lenard's successful attempt to discredit Einstein's findings in front of the Nobel physics committee as "philosophical conjectures cloaked in equations designed to deceive" ("Einstein: Chapter Seven": 43:03-43:06) betrays his stance as experimental physicist, his ideological approach to the natural sciences as well as his thinly disguised anti-Semitism. And it is, of course, no coincidence that the nonconceptual representation, especially the *mise-en-scène* of the dimly lit room in which the meeting takes place, adds to the conspiratorial nature of Lenard's intervention whose historical counterpart is known to have "worked behind the scenes to make sure that Einstein was not awarded the prize" (Isaacson 286). Here, as elsewhere, this season's recurrent focus on the antagonistic powers of the experimentalists is likely to be reinforced by a dramatized visualization. Within the frame of an alternative spatio-temporal configuration, it transforms what might have been an exchange of letters into a telling scene which is characterised by a specific spatial interrelationship or, in other words, proxemics that puts Lenard in the central position as if he were presiding over the meeting. In their analysis of the 63 Nobel Prize nominations for Einstein, which cover the years between 1910 and 1922, Hillman et al. do not hint at a real meeting of the sort shown in the episode (97-107). Yet, their account leaves no doubt that the historical Lenard had a decisive influence on some committee members. Their study *The Man Who Stalked Einstein* (2015) prompts us to consider that Lenard "had some interchanges with certain physics committee members wherein there had been agreement that Einstein's theoretical ravings were inappropriate for Nobel Prize consideration" (93). Hillman et al. go on to argue that for more than a decade Einstein's "critics on the committee adopted Philipp Lenard's argument that the theory did not conform to common sense" (97), that it "was belief, not science" (104).

Roughly five years earlier, at the beginning of the First World War, the first season foregrounds Philipp Lenard as one of the outspoken advocates of the militarisation of science. In this scene, Walther Rathenau, who was then in charge of the War Raw Materials Department (Volkov 644-45), beseeches a prominent assembly of scientists to support the army in order to prevent an early surrender that would otherwise be inevitable due to the lack of an ammunition stockpile. Lenard is the first to voice his support and this is met with great acclaim by the scientists in the room. Within the specific spatial character configuration of this scene and its inbuilt proxemics, Einstein is sitting next to his colleague and friend Haber. But when the latter passes on the document to be signed by Einstein, the young physicist pauses and addresses the initiator of the campaign saying in what could be regarded as a slightly sombre tone, "Dr Rathenau, some of us still indulge in the wild notion that scientists are meant to unravel the mysteries of the world, not find new ways to destroy it." But before the addressee can answer, it is Lenard who both mockingly and menacingly replies, "We are all free to make choices. And history will take note." ("Einstein: Chapter Seven": 05:18-05:44), whereupon Einstein puts away the fountain pen as a symbolic act of his ethical position as a humanist scientist. It is interesting to notice that

the TV production appears to file away the philosophical twist that the historical Einstein used to reconcile the notions of free will and choice on the one hand with his understanding of determinism on the other. Isaacson explains Einstein's pragmatic solution which maintained that, "[a]cting *as if* people were responsible for their actions would, psychologically and practically, prompt them to act in a more responsible manner." (392; emphasis in the original) In the highly dramatized, yet fictitious scene (Rowe and Schulmann 12), Einstein manages to withstand the enormous pressure of his scientific peers, but there is an imminent threat uttered by Lenard and a clear indication of the beginning of a conflict with Haber. When considering the narrative processing of the history of science, it will soon become obvious that this scene is exemplary of the first season as a whole and its attempt to combine the features of dramatization, emotionalization, personalization, and fictionalization (Glaser et al. 434-42) to develop a generic scientific as well as ethical literacy whose underlying knowledge acquisition can essentially be affected in a positive or negative way (Glaser et al. 442).

Einstein's ethical clash with Haber involves two major disputes covered in the seventh episode. The first is set in an extensively built laboratory where Haber, the chemist who used to work on fertilizers and explosives, is now experimenting with chlorine gas to be tested on rats. In agreement with the historical Einstein who believed in humanistic moral philosophy and pure research (Michalos 346, 347), the fictionalized Einstein is deeply shocked and does not accept Haber's reasoning that using this chemical weapon will bring about a quick end to the war:

EINSTEIN. You'd burn a man's insides, make him drown in his own phlegm?

HABER. They're slaughtering our boys.

EINSTEIN. Because we attacked them.

HABER. Are you taking their side?

EINSTEIN. I'm taking the side of humanity.

[...]

EINSTEIN. My friend, listen to me. You don't have to go through with this. It's not too late. We're scientists. Not purveyors of death and destruction.

HABER. During times of peace a scientist belongs to the world. But during times of war, he belongs to his country.

EINSTEIN. Peace cannot be kept by force, Fritz. It can only be achieved by understanding. ("Einstein: Chapter Seven": 26:42-28:05)

It is worth noting that throughout the dispute, the other scientists present go about their work, as if nothing unusual is taking place. The positioning of science between nationalism and transnationalism (Rowe and Schulmann 1, 51), between destruction and protection, seems to be no longer an issue and, indeed, while the following scenes show Planck mourning his fallen son and Einstein signing the pacifist "Manifesto to Europeans" (Nicolei 64-66), the very next sequence focuses on Haber in uniform at Ypres in Belgium where he is supervising the deployment of chlorine gas and inspecting the large number of dead soldiers on the enemy lines. After his return to Berlin, Haber is celebrated as a war hero by high-ranking officers at a dinner on the occasion of his promotion to captain. But, the toast and the festive mood come to an abrupt end when his wife Clara, who has always opposed her husband's war research, leaves the table and kills herself with Haber's army pistol on the staircase of the villa; out of sight, but not out of earshot from the revellers. This extreme act of protest does not emanate from the creators' imagination, although a subtle spatio-temporal shift can

be noted to intensify the drama. Clara's historical suicide, which she committed in the garden early the next morning after the dinner (Leitner 214-15), is a fact that has inspired many readings and literary responses; for example, Barbara Schaffeld's poetic reflections foregrounding Clara's own professional background with a PhD in chemistry, her "[h]umanist protest against the perversion of science" (48; my translation) as well as her role as a women's rights campaigner.

Haber's jingoistic war-time notion of science and Einstein's contrasting belief in its transnational character (Rowe and Schulmann 1) finally inspire a clarifying talk. The location is the Prussian Academy in 1919 where a soiree is underway in honour of both Planck and Haber for their respective Nobel Prizes in physics and chemistry, which in line with historical data are awarded for 1918, but which they receive in 1919. Haber's research on the synthesis of ammonia from nitrogen and hydrogen gas was important for the production of fertilizers as well as explosives (Smil 2004). But Einstein, who has to be persuaded to attend, also knows the darker side of the scientist who now stands forlorn in the middle of a large foyer full of guests who seem to be ignoring him. The spatial reading which the surroundings inspire tallies with the historical situation. Matthew Stanley, for instance, states that as a pioneer of chemical weapons, Haber "had been isolated from other scientists since the end of the fighting" (309). Einstein makes the first move by approaching Haber, but his congratulations are of a very restrained nature:

EINSTEIN. A Nobel in chemistry, that is something.

HABER. I'm not a genius like you, Albert. All I did was see a problem and find a way to fix it. That's what I try to do, I suppose. Fix things.

EINSTEIN. Yes, of course. Or destroy them.

HABER. That is entirely unfair.

EINSTEIN. Did you not invent a new way to destroy human life?

HABER. Yes, but that was not my only innovation. I'm being honoured tonight for the good I've done.

EINSTEIN. Life cannot be balanced like an equation, Fritz. Good deeds do not erase the evil ones.

HABER. I certainly pray to God you're wrong for once, Albert.

EINSTEIN. Perhaps I have been too harsh.

HABER. Perhaps you haven't. ("Einstein: Chapter Seven": 45:05-45:52)

The shot-reverse-shot sequence and its inbuilt over the shoulder shots underscore the dynamic of the dispute and ask the audience to take sides. Yet, this turns out to be less simple than initially expected as the key subject of identification, Einstein, finally offers a more conciliatory tone. In view of the specific multimodal design of the scene, the audience might have guessed all along that the soft diegetic piano music, which is part of the soiree, is a reliable piece of prior information that will match with the later propositional elements of the conversation once Einstein has decided to tone down his original harshness. Indeed, towards the end of the talk, the controversy between the chemist, whose career encompasses the life-enhancing as well as the deadly forces of science (Charles 2005), and the pacifist, whose humanist principles of ethical science forbid any military exploitation, gives way to an attitude of reconciliation. This representation of the relationship between Einstein and Haber corresponds with historical data. Fritz Stern, for one, argues that from their first meeting in 1911 until Haber's death in 1934, the personal ties between the two remained (67) and that although during "the war Haber and Einstein had become fraternal opposites, [...] their



friendship persisted despite their radically different views." (124) With Haber in mind, Stanley observes that, "Einstein did not have many close friends, and he greatly valued the ones he had despite their moral and political differences" (309).

As has been mentioned before, another good friend of Einstein, the German Foreign Minister Walther Rathenau, was assassinated in 1922. Shortly after the murder, Einstein, the historical person as well as the fictionalized character, is warned by the police "that he might be next. His name appeared on the target lists prepared by Nazi sympathizers. He should leave Berlin, officials said, or at least avoid any public lectures" (Isaacson 304; "Einstein: Chapter One": 22:45-23:47). In the TV production, the question of leaving Berlin becomes a real issue some ten years later, and it is the filmic representation of the prime motives for Einstein's exile that is addressed in the next section.

### **The Nobel Laureate and Nazi Science Policies at the End of the Weimar Republic**

Even in the face of the alarming results of the federal election held in July 1932 when the Nazi Party won 230 seats and became the largest party in the Reichstag but failed to secure a majority (Evans 289-95), Einstein is still prone to playing down the danger in front of his second wife Elsa. Yet he has to change his mind when he witnesses how storm troopers beat up Jewish business people outside a department store. Einstein protests and is immediately recognized and then followed by a member of the Hitler Youth and a storm trooper. The next scene demands one's attention with its eye-opening visualization of the threat to Einstein. While the boy, who is obviously impressed by the scientist, asks him to sign a little Swastika flag whereupon Einstein pretends to have lost his pen, the storm trooper, who has by now reached the two, calls off the boy and despicably spits in Einstein's face ("Einstein: Chapter One": 56:16-58:00). It is the implication of this scene close to the ending of "Chapter One" that neither the man nor the scientist will see a future in Germany. The cliffhanger of this episode, created by Ron Howard, Noah Pink, and Kenneth Biller, then shows the Einsteins at the US Embassy in Berlin, on the day before their planned departure in 1932, when they are interrogated by an initially distant and unconcerned Raymond Geist (1885-1955), Deputy Consul General, who is conducting the inquiry at the request of J. Edgar Hoover (1895-1972). Having just faced the threat posed by the Nazis, Einstein suddenly finds himself in a position of being considered a threat himself because the Bureau of Investigation is worried about his political creed (Isaacson 400-01). It does not take Geist long to address the central question:

GEIST. Are you now or have you ever been a member of any political organization?

EINSTEIN. That is none of your business. [...]

GEIST. [...] but you have a history of – how shall I put this – controversy, which calls into question your loyalties. [...] And it is my job to ensure that any individual coming to our shores does not pose a threat.

EINSTEIN. If you wish to talk about threats, Mr Geist, perhaps you should take a look outside your window. Have you noticed the charming fellows in brown shirts who call me Jewish swine and want people like me dead?

GEIST. If you are referring to the National Socialist Party, they are not in power.

EINSTEIN. Oh, no? You want to take a walk with me?

GEIST. Professor, I have not called you here today for a lesson in German politics.

EINSTEIN. I'm not giving you one because I doubt you'd be smart enough to be in my class. [...]

GEIST. [...] unless you answer my questions to his [Hoover's] satisfaction, you will not be granted entry to the United States of America. ("Einstein: Chapter One": 1:02:52-1:04:29)

It is only in "Chapter Eight" that the cliffhanger, the hallmark of popular seriality, is resolved after the narrative progression of further frame scenes of the interrogation. These are interrupted by analeptic scenic references crosscutting to, for instance, Chaim Weizmann's attempt to win Einstein for the Zionist cause, Walther Rathenau, Einstein's affair with his secretary Betty Neumann, his nomination for the Nobel Prize, Lenard's predated joining of the Nazi Party, Einstein's meeting with Niels Bohr, the above-mentioned humiliation by the storm trooper, and Lenard being welcomed by Hitler.

Before the interrogation begins, "Chapter Eight" moves back in time to New York's Lower East Side, showing a family of Russian Jewish origin brutally arrested in 1920 in the course of the Palmer Raids conducted against alleged anarchist or communist immigrants ("Einstein: Chapter Eight": 01:54-02:40). The very next scene introduces J. Edgar Hoover who, in his report to Attorney General A. Mitchell Palmer, accentuates the success of the operation while glossing over the acts of extreme violence (cf. Ackerman 175-80). Palmer in turn predicts a very promising future for him ("Einstein: Chapter Eight": 02:40-03:13). The first two scenes of "Chapter Eight" will no doubt leave a profound impact on the audience who now hears the bridging voice of Geist revealing in 1932 that he is "conducting this inquiry at the request of Mr J. Edgar Hoover, director of the United States Bureau of Investigation" ("Einstein: Chapter Eight": 03:13-03:17). As part of the continuity editing, the next shot shows the mirror image of Geist reflected by the shiny surface of the meeting table before the camera tilts and tellingly focuses on the real person. Thus, the receptive suspense about the possibility or nature of Albert and Elsa's exile is built and kept up in two interrelated ways. Whereas Hoover is clearly depicted as an utterly ruthless persecutor of what he considers to be leftist immigrants, the film language or, more precisely, its cinematic code, indicates that we are confronted with a representative of the US Embassy whose standpoint might oscillate between following instructions and opting for individual deviation.

When the fictional Einstein is confronted with the suspicion that he is believed to be a member of the Communist Party, he does not take the issue seriously at first. He expresses his sympathy for what he considers to be socialist ideas, such as economic fairness and a community mindset (Michalos 345). Einstein, however, makes it absolutely clear that the alleged membership of the Communist Party is ridiculous: "But the notion that I should join the Communist Party, a commitment that would require I surrender my autonomy to the authority of the state, that, good sir, is a nonsense." He goes on to argue: "Zionism, Communism, these are not the threats that should be concerning you, Mr Geist. It's Fascism that should have you trembling." ("Einstein: Chapter Eight": 20:07-21:33)

In the course of the interrogation the atmosphere of an aggressive, even at times presumptuous, rhetoric on the one hand and administrative rigidity on the other gives way to a slightly more relaxed tone that contains witty word play, a sense of humour, revealed in Geist's character and Einstein's, as well as a growing mutual empathy which is expressed in telling gestures. In this respect, three decisive and interrelated

topics seem to be significant. Bohr's quantum theory, the notion of God, and the latent influence that Geist's charitable Methodist mother obviously had on him:

GEIST. [...] These particles, smaller than we can see, even with a microscope, are measurable only as probabilities, where they might exist in space? How fast they might be going?

EINSTEIN. Very good.

GEIST. So it's a game of chance, then? A mathematical guess?

EINSTEIN. According to Bohr. But I do not believe God plays dice with the universe.

GEIST. You know, in all this talk of you being a Jew, this is the first time you've mentioned God.

EINSTEIN. That's another one of those words that can mean many different things.

GEIST. But you do believe in God?

EINSTEIN. If I say no, will it prove I'm a communist? (*Geist chuckles softly.*) What I believe is the universe is so extraordinary, only God could have created it. (*Geist nods approvingly. Non-diegetic piano and violin music begins.*) My job is simply to figure out how He did it. (*Geist makes an affirmative facial gesture.*) What about you, Mr Geist? Are you a religious man?

GEIST. I was raised Methodist.

EINSTEIN. Are you still?

GEIST. (*smiles*) Well, mother was the true believer. (*He chuckles.*) Every holiday, she would make extra food, and she'd pile me and my brother into the Studebaker with all the dishes, and we'd drive across town to the train station. That's where all the men who were out of work went to get warm. And we would serve them all plates. ("Einstein: Chapter Eight": 34:52-36:13)

The reference to the authentic quotation, "that He [God] does not play dice" (qtd. in Isaacson 335) leads to Einstein's understanding of the relation between religion and science. Its dialogic importance is underscored by the non-diegetic piano and violin music. In this scene, the fictionalized Einstein seems to match his historical model who, in an article for the *New York Times Magazine* published in 1930, maintained "that the cosmic religious experience is the strongest and the noblest driving force behind scientific research" (234). Thus, both the fictionalized and historical Einstein prove to be disciples of Spinozan thought (Michalos 347) when they tie their philosophy of science to a non-orthodox religious impulse.

For the time being, however, the multimodal indication of a change of atmosphere is replaced by a retarding moment that results from Hoover's denial to approve the visa in spite of Geist's positive recommendation. Elsa Einstein has to use her good contacts at *The New York Times* to provide the provocative substance for an article whose public impact will offer the Einsteins a second chance (Isaacson 400). Recent research, however, revealed that only hours after the interview, Geist had sent a telegram to the State Department which then granted approval irrespective of the public ultimatum (Breitman 13). In a scene that also does not have an approximate equivalent in historiography (Breitman 11-15), but which spatially underscores the informal nature of the meeting, Geist visits Einstein in his flat to present a package deal that gives the conditions for issuing the visa. The physicist should sign a declaration that he does not belong to the Communist Party. Although Einstein dismisses this after pointing to the discrepancy between the myths of the American democracy and the

present situation, Geist nevertheless stamps the passports, thus risking his job. Anticipating an undeserved danger to career development for someone whom he has come to understand, Einstein ultimately signs the document, as did his historical counterpart (Isaacson 401). Yet, he does so not without adding a moving coda expressing his wish that Elsa and he "will not be the only Jews you help find their way to America's shores" ("Einstein: Chapter Eight": 49:27-49:32). As the closing credits of episode 8 make clear, this wish will indeed be fulfilled in the years to come (Breitman 239-45). Although the circumstances are in all likelihood fictitious, Einstein's humanitarian position adheres closely to the commitment of the historical expatriate, especially in terms of refugee relief which he understood as his "public and private endeavour" (Isaacson 445).

"Chapter Eight" of the first season of *Genius* creates a multimodal space where a twofold type of political oppression affects the prominent Jewish scientist. Created by Kenneth Biller, Angelina Burnett, and Francesca Butler, this episode foregrounds Einstein's struggle to manoeuvre his way between Nazi attacks and Hoover's violent measures against alleged subversives and Jewish migrants. Immediately before Hoover's initial denial of the visa, we see Lenard, the author of the forthcoming *Deutsche Physik* (1936/37), approaching the Nazi headquarters where he is about to meet Hitler with whom the historical physicist had begun a personal relationship roughly a decade ago (Hillman et al. 122). The portentous voice over provides a revealing look into Lenard's mindset which assumes an ideological difference between a "healthy German spirit" and its corresponding Aryan science and "the foreign spirit of Judaism, which arises as a dark power everywhere. And which is so clearly designated in everything that belongs to Einstein's theory" ("Einstein: Chapter Eight": 43:57-44:13). In her well-researched work on Einstein and Lenard as adversaries in physics and contemporary history, Charlotte Schönbeck produces clear evidence of Lenard's stand of denouncing the theory of relativity as a manifestation of what he in the early 1920s claims to be the dark power of a foreign spirit (36). According to Schönbeck, this amalgam of fierce scientific controversy and personal as well as political attacks (1) began in the summer of 1920 when the Anti-Einstein campaign reached a peak during the course of a conference held at Berlin's Philharmonic Hall. In the TV version, but not in historical writing (Schönbeck 26), Lenard is the string-puller behind this gathering organized by the anti-Semite Paul Weyland (1888-1972). And it seems that the first season of *Genius* intends to introduce this right-wing nationalist, whose office is placed in the headquarters of the *German National People's Party*, as the one who inspires Lenard's strategy to give more momentum to his critique of general relativity by adding an anti-Semitic component ("Einstein: Chapter Seven": 46:08-48:03), an approach that the real Lenard adopted in his public statement from 1922 onwards (Schönbeck 31, 38). In the filmic representation as well as in history, Lenard finds useful allies and supporters amongst his students, colleagues, and members of the Nazi party including Hitler and Goebbels. After the seizure of power in 1933, the latter's fictionalized counterpart welcomes him as the Chief of Aryan Physics who as his first official act intends to purge "the Prussian Academy of all foreign and impure influences" ("Einstein: Chapter Nine": 03:29-03:32) with Haber as one of the victims of enforced political conformity. Lenard even takes part in the book burning where the audience of the episode witnesses Einstein's publications go up in flames while his vociferous opponent gives the Nazi salute ("Einstein: Chapter Nine": 03:43-04:54).

It would be hard to overlook the significance that the editing acquires when it presents Einstein situated between two diverse powers enforcing political conformity.

While Hoover's agents act ruthlessly against would-be anarchists, socialists, communists, and Jewish migrants, thereby exerting the executive force of a political and anti-Semitic oppression, Lenard comes to add an anti-Semitic ideological compound to the deep scientific reservations he as a representative of the ether concept and follower of Euclidean geometry has about Einstein's theory (Schönbeck 31, 34). This is not to say that the two analeptic perspectives pointing to Hoover and Lenard are congruent. They rather bespeak attitudes which eventually curtail the freedom and creativity of scientific research that can only properly unfold when – in a Bernsteinian sense – “the political equilibrium among nations” is a given (Rowe and Schulmann 1). In his essay “What I Believe” (1930), the historical Einstein identifies three major principles of his political views, and these are first, his rejection of autocratic systems of government, second, the positioning of “the creative individual and not the political state as society's most precious asset,” and third, the stance to categorise “the military mentality as the single worst manifestation of the ‘herd mind’ in modern society” (Rowe and Schulmann 16-17). As a democrat, transnationalist, and cultural Zionist (Schönbeck 23; Rowe and Schulmann 1, 16-17, 33) who believes in the humanitarian and universal nature of the ethics of science, the fictional Einstein cannot but sign the declaration that he is not a member of the Communist Party.

Needless to say that in retrospect Einstein was well advised to leave Germany for Princeton a few months before the Nazis would take over, burn his books (“Einstein: Chapter Nine”: 03:43-04:54), and enforce the political conformity of German scientists thus driving even Haber into exile (“Einstein: Chapter Nine”: 07:46-09:19; 10:50-11:54). But as will be shown in the next section, the questions of ethical science that once dominated the debates with Haber are about to recur in a hitherto unknown dimension.

### **The Expatriate Physicist and the US Nuclear Weapon**

At the end of “Chapter Nine”, which covers the years 1933-1946, a thoughtful Einstein is presented in his house in Princeton holding a copy of *Time* magazine the cover of which shows a caricature of him in front of the atomic cloud with the caption “COSMOCLAST EINSTEIN: All matter is speed and flame” (“Einstein: Chapter Nine”: 49:07-49:43). This sarcastic headline bespeaks a popular understanding of the physicist's role in the invention of the atomic bomb, which is also brought up in the film *The Beginning or the End* (1947) – much to the critical disappointment of the cinemagoer Einstein (“Einstein: Chapter Ten”: 16:16-17:13). Yet, the audience of “Chapter Nine” will have access to a more complex rendering of his part. Indeed, as far as the relationship between the ethics of science and policymaking is concerned, most of the storyline of this episode, created by Kenneth Biller and Raf Green, is devoted to the US race to develop the bomb with Werner Heisenberg (1901-1976), the head of the German nuclear weapons programme, as its alleged major competitor. The Heisenberg team does not achieve its objective, but the relevant episode suggests that this is not due to the lack of scientific expertise. In the first scene of “Chapter Nine”, set in 1944, Moe Berg, the former baseball player who now works as a spy for the Office of Strategic Services, receives the order to kill Heisenberg in Zurich should his guest lecture reveal that he knows how to build the bomb. Later in “Chapter Nine”, Berg meets Heisenberg and introduces himself as Thomas Ritter, a Swiss physics teacher. Walking Heisenberg back to his hotel, Berg [Ritter] is eager to direct the conversation to the topic of the bomb, the creation of which the German theoretical physicist dismisses as highly improbable. Heisenberg seems to see through Berg's intentions and

has the presence of mind to opt for a rhetorical repartee using the scientific terminology that he is famous for:

HEISENBERG. If you were a real physicist, one who knew how to build such a weapon, and you knew it would help your country win a war but that it could also kill thousands, what do you suppose would weigh stronger, your patriotism or your moral qualms?

BERG [RITTER]. I suppose if I were a true patriot, I would have to push those qualms aside.

HEISENBERG. Would you really? Tell me, do you know my uncertainty principle?

BERG [RITTER]. Of course. The more precisely you measure a particle's velocity, the less precisely you know its position.

HEISENBERG. So perhaps the more precisely you attempt to take my measure, the less precisely you will know my position. ("Einstein: Chapter Nine": 41:37-42:46)

Heisenberg's witty remark on the growing uncertainty to define his position and his earlier comments on the complexity and hence unlikelihood of building the bomb seem to have an effect on Berg. Yet, the latter's final reaction is preceded by moments of suspense. When Berg responds to the question about patriotism and moral qualms, the camera again shows his hand reaching into the coat pocket where the audience knows his pistol is hidden. But then he pulls his hand out again to shake hands with Heisenberg, a telling emblematic image that is no doubt evocative of the assumed origin of the handshake. The German physicist survives this meeting because Berg assumes that Heisenberg does not pose a threat. Yet, when the audience sees the physicist again as a prisoner of war in a British camp in 1945, it becomes clear that he knew how to develop the bomb. One of his fellow detainees, the scientist Carl von Weizsäcker, wonders how the Americans were able to construct the bomb, whereupon Heisenberg answers to everyone's surprise: "It's an extremely simple process, actually. Get me a pencil and a piece of paper and I'll show you" ("Einstein: Chapter Nine": 48:48-49:03). Indeed, this scene suggests that Heisenberg had the theoretical expertise to construct the bomb and, in retrospect, there is some indication that the TV production earlier on prompted us to consider a Heisenberg character whose moral qualms might have prevented him from developing a weapon of mass destruction ("Einstein: Chapter Nine": 28:40-29:28).

Following the first season's line of argument, the audience will have to identify the volatile news and intelligence about the development of the bomb in Germany as the key motivator for Einstein's contradictory political initiatives. Before, and after, a scene set in Heisenberg's laboratory where his qualms become obvious, Einstein is presented as someone who once again has to deal with the ethical aspects of war time science. He is at first approached by the scientist Leó Szilárd (1898-1964) who almost implores him to write a letter to the President trying to convince him that "America's scientists must build the bomb before the Germans do" ("Einstein: Chapter Nine": 28:05-28:07). For the time being, however, Einstein takes a pacifist stance. He refers to his debate with Haber and maintains that "[s]cience must never be used for violence" ("Einstein: Chapter Nine": 28:21-28:23). After cross-cutting to Heisenberg, the film visualizes Einstein's moral dilemma through the number of draft letters he has discarded. It is only when Helen Dukas, his assistant, asks him what kind of advice his dead wife would have given that Einstein recalls a conversation with Elsa and then

starts to write the final version of the letter to Roosevelt. Here the audience will be reminded of an earlier scene set in Princeton in which the Einsteins learn that their German apartment and cottage have been raided by the Nazis:

ELSA EINSTEIN. The girls have managed to save most of your papers.  
 EINSTEIN. Poor Herr Hitler. What will he use for kindling the next time he wishes to read by the fire?  
 ELSA EINSTEIN. This isn't funny, Albert.  
 EINSTEIN. I know. That is why we must fight, Elsa. Fight Hitler however we can.  
 ELSA EINSTEIN. We haven't any guns.  
 EINSTEIN. I have a voice. I can write. I can speak out, tell anyone who will listen that this man is a threat, that other governments must use all peaceful means to oppose him. ("Einstein: Chapter Nine": 05:18-05:46)

Six years later, Einstein does indeed use his public voice, but the restriction of fighting Hitler purely by peaceful means is no longer an issue. Factual narratives have explained that the historical Einstein only "helped prepare the famous letter" (Rowe and Schulmann 41), but the following paraphrase and the quotation given in the television film are authentic parts of the letter's final version. Einstein's voice-over accompanies part of the writing process before the bridge voice is that of the President himself who, pushed in his wheelchair, reads a section aloud in front of his staff:

EINSTEIN [VOICE-OVER]. 'Based on this new phenomenon, it is conceivable, though much less certain, that an extremely powerful bomb of a new type may be constructed.  
 A single bomb ...'  
 ROOSEVELT [*The first words overlap with Einstein's voice-over.*]. 'A single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory.'  
 ("Einstein: Chapter Nine": 30:14-30:36; cf. Einstein 360)

In the episode, if not in history (Rowe and Schulmann 361), Roosevelt reacts immediately and issues the instruction to implement a programme the objective of which is to develop an atomic bomb. It is his long-standing opponent Hoover who strikes Einstein, the US-citizen-to-be, off the list of potential participants ("Einstein: Chapter Nine": 31:15-31:37; Isaacson 477-78) although the audience later learns that Einstein has agreed to check at least a few calculations on gaseous uranium at the personal request of Vannevar Bush, chairman of the Office of Scientific Research and Development ("Einstein: Chapter Nine": 36:43-38:28; Isaacson 480-81).

However, once the fictionalized Einstein hears that Heisenberg's group will not be able to produce an atomic weapon, it is again Szilárd who passes on the news and approaches his friend to write another letter to the President (Isaacson 484). This time it is with the intention that the weapon, the objective of the Manhattan Project, should never be used. In contrast to the historical Einstein who wrote a letter of introduction for Szilárd (Einstein 365-66), the audience of episode 9 sees Einstein's assistant typing the final lines before he signs it on what must have been the 25 March 1945.<sup>2</sup> The moment the envelope is sealed, a voice-over of a male news anchor announces the death of President Franklin Delano Roosevelt on 12 April 1945. This voice bridge continues into the next scene where an employee of the Oval Office collects the letters addressed

to the dead President and puts them in a box to be transported elsewhere. As the camera zooms in on Einstein's sealed letter, the news presenter notifies that, "Vice President Truman and the cabinet are meeting now at the White House to settle all matters of public importance." ("Einstein: Chapter Nine": 45:00-45:05) The meaningful synchronicity of diegetic and non-diegetic action operates as a multimodal shorthand telling the audience that Einstein's warning will not be on the next President's priority list (Isaacson 484) who will proceed to decide that the first atomic bomb should be dropped over Hiroshima on 6 August 1945.

These two letter-related film sequences again disclose the technique of spatio-temporal transition and compression, this time supported by the partial overlap of the voices of Einstein and the President in the context of their correspondence of 1939 and the bridge voice of the news anchor at the time of the failed delivery of 1945. In both cases the audio-visual effect inspires a reading that links moments of dramatization to a personalized understanding of decision-making processes in the political field. In alignment with this view, the character configurations of the relevant scenes provide another interpretative grid with which the first season of *Genius* can be mapped. Since the audio-visual focus lies on the communication between Einstein and Szilárd on the one hand, and Einstein and the President on the other, "Chapter Nine" of the TV production consequently leaves no room for J. Robert Oppenheimer's (1904-1967) role in the Manhattan Project to be foregrounded. It is only in the last episode of the season, created by Kenneth Biller and Mark Lafferty, that the former wartime director of the Los Alamos Laboratory emerges as one of the major constructors of the bomb. The occasion is Einstein's 68th birthday when Oppenheimer, who is among his guests, is surprised by his host's bad mood:

OPPENHEIMER. I seem to have stumbled onto the wrong gathering. I was meant to attend a birthday party, not a funeral.

EINSTEIN. Did you see what [Otto] Halpern's wife asked me to sign?

OPPENHEIMER. That? It's from last year.

EINSTEIN. So what? It's my face on the cover of *Time* magazine in front of a mushroom cloud.

OPPENHEIMER: It's a wonderful likeness.

EINSTEIN. You're the one who actually built the damn thing, but still everyone blames me. ("Einstein: Chapter Ten": 02:37-02:58)

In keeping with Levenson's argument that, "Einstein had next to nothing to do with the invention of nuclear weapons" (426; cf. Michalos 353), much of the American part of the first season of *Genius* is devoted to placing the prominent political voice of the "public citizen" (Michalos 339) at the centre of his war and post-war years. The TV production narrativises Einstein's ethics of science as well as his profound influence by joining conceptual and nonconceptual representations of his ability or, for that matter, time-conditioned failure to gain Roosevelt's approval. The editing as well as the multimodal design of the letter-sequences, which skilfully combine the propositional and pictorial, underscore Einstein's role as a warning voice initially against an assumed Nazi threat and then later against the more and more apparent disastrous impact of the atomic bomb. It is the episodes' achievement to set the political voice of Einstein apart from the actual development of the bomb, thus following Isaacson who discusses Einstein's position in the popular imagination in the aftermath of the *Time* magazine cover and article to conclude that his entanglement with the Manhattan Project was only "marginal" (Isaacson 485). At this point, Rowe and Schulmann are slightly more



categorical stating that Einstein "had no involvement whatsoever with nuclear research either during or after the war" (41). In full view of the editing of the relevant letter-scenes, which draw attention to the political level of the biopic, the TV audience is particularly prone to perceiving the expatriate physicist of the final two episodes as a public voice which will soon re-enter the pacifist arena. This move is well-documented in the last episode's reference to the Russell-Einstein-Manifesto released in July 1955, almost three months after Einstein's death ("Einstein: Chapter Ten": 36:00-36:49).

## Conclusion

In the attempt to address the content-related and formal narrative way in which the first season of *Genius* emphasizes Einstein's ethics of science vis-à-vis the policies of his day, this article turned to three major phenomena that Einstein had to face as a physicist: the pro-war mentality of his fellows at the Prussian Academy, the anti-Semitic Nazi assaults together with the oppression of Jewish scientists at the end of the Weimar Republic, and the impact of the Manhattan Project. The relevant scenes and sequences of this season of *Genius* were also studied with respect to their meaningful multimodal design and complex chronological discourse structure in order to find out how the narrativisation of Einstein's scientific ethics benefits from the audio-visual imagery accompanying the purely propositional content that the scripted dialogue affords.

Against the backdrop of the First World War, Einstein's humanist perspective on the ethics of science turns out to have two major opponents; one is the physicist Philipp Lenard who favours the militarization of science and the other is Einstein's friend, the chemist Fritz Haber, who becomes an ardent nationalist and backs the war effort with his scientific expertise. As the corresponding antagonistic debates expose, science and its ethics are situated between nationalist and transnationalist approaches or, more precisely, between the means of destruction and protection. The multimodal narrative processing of these ethical aspects of science fuses moments of dramatization, emotionalization, personalization, and fictionalization. It thus advances a generic or popular scientific and ethical literacy that due to the parasocial interaction on the part of the audience might add a lasting mode of notable identification to the matter-of-fact variety already generated by historical narration.

At the end of the Weimar Republic, when Einstein becomes the witness and victim of anti-Semitic violence, he and his wife are caught in a dilemma the forces of which are marked by Nazi oppression and Hoover's deep hatred of Einstein. The meaningful editing of the scenes accentuates the scientist's position between two distinct powers that each in their own way extort political conformity and hence inhibit the freedom and creativity of scientific research. In the case of Lenard, an anti-Semitic ideology conjoins with the scientific reservations he has about Einstein's general theory of relativity. In contrast to the representative of Aryan physics, the fictionalized protagonist is defined as a democrat, transnationalist, and cultural Zionist. Einstein adheres to the humanitarian and universal nature of science while simultaneously attributing his understanding of science and its ethics to a non-orthodox religious motive in a way that is reminiscent of Spinozan thought.

The relationship between the ethics of science and public policies also looms large in the last two episodes of the TV production which correlate Einstein's apparently contradictory political drive with the changing news on the state of the development of the atomic bomb in Nazi Germany. In the two letter-sequences, the audio-visual effect of the continuity editing supports a personalized understanding of policymaking whose character configuration involves Szilárd, Einstein, and Roosevelt and not Oppenheimer, the most prominent constructor of the bomb. It is with an

informed sense of Einstein's discursive influence that the narrative separates the public voice and the scientific ethics of the Nobel prize laureate from the actual development of the bomb as the objective of the Manhattan Project. After a running time of eight hours, the TV audience of this first season of *Genius* will finally witness an aged Einstein, whose renewed pacifism once again joins his humanist ethics of science, although the Cold War world he now lives in seems less and less inclined to listen to him.

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## Notes

<sup>1</sup>The second season (2018) retells the life of Pablo Picasso, while the third season (2021) foregrounds Aretha Franklin. There are plans for a fourth season, which will be aired on Disney+ with a focus on Martin Luther King Jr. and Malcolm X.

<sup>2</sup>Unfortunately, the scene contains a goof. On very close inspection of the still and with an eye for the details of paragraph endings as well as the slightly out of focus date, it becomes clear that the letter Einstein's secretary has just typed is the first one sent to the President in August 1939. The prop master must have been forced to economize on time.

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