

Preface

A Circular Walk Around Carl Friedrich von Weizsäcker's Writings

Carl Friedrich von Weizsäcker has been called a polymath. He ranked close to Alexander von Humboldt,¹ probably the last scholar of all the contemporary sciences and arts at the same high level. True, this was impossible for anyone of the twentieth century to achieve. But one can say that Weizsäcker was in communication and discourse with the sciences and arts of his time. He was a physicist by training, a philosopher by deep affinity and academic professorship and a peace researcher through a sense of obligation. This demonstrates his wide range of expertise, added to by widespread interests in nearly all areas of human knowledge and wisdom. In particular, the experience and truth of religion was the lodestone by which he oriented himself. And he wrote remarkable papers which showed how his theological knowledge and thinking informed his philosophy and political thinking.²

This series of volumes includes some of Carl Friedrich von Weizsäcker's selected major contributions to physics (PSP-22), philosophy (PSP-23), religion (PSP-24), and politics and peace research (PSP-25). Although several of his works have been translated into English, Weizsäcker's work is not much referred to in the English-language discourse. During his lifetime he was in contact with wise and important thinkers and policymakers from around the world. His correspondents included the Dalai Lama, Henry Kissinger, Gopi Krishna and Joseph Rotblat, to name but four. But it was only in the German-speaking community that he reached an eminent position as a person of immense influence on public opinion. For several

¹ See Reimar Lüst: "C.F. von Weizsäcker and The Kaiser Wilhelm/Max Planck Society", in: Lutz Castell and Ottfried Ischebeck (Eds.): *Time, Quantum and Information: dedicated to C.F. von Weizsäcker in commemoration of his 90th birthday* (Berlin–Heidelberg: Springer-Verlag, 2003): 17–23.

² See also at: http://afes-press-books.de/html/SpringerBriefs_PSP_C.F.v._Weizsaecker.htm.

decades, from the 1960s to the 1980s, he was among the best-known scientists in Germany and he had been a ‘star’ since 1957.

At that time he played a leading role in the group of 18 German atomic scientists who signed the Göttingen Declaration, refusing any kind of collaboration in research on and development of an atomic bomb.³ They insisted that the German government should give up all plans for equipping the German military with nuclear armaments.⁴ Such an intervention was considered a scandal by the political establishment of West Germany and the reaction of the government was harsh. The scientists were summoned to Chancellor Konrad Adenauer to be disciplined. But meanwhile public debate had supported the arguments of Weizsäcker and his colleagues, among them Nobel laureates such as Werner Heisenberg, Otto Hahn and Max von Laue.

The nuclear experts were able to defend their position. This was the birth of the publicly-concerned scientist as an actor in German political discourse. Carl Friedrich von Weizsäcker appeared on the cover of the influential weekly ‘Der Spiegel’. Two years later, with others, he founded the Federation of German Scientists (Vereinigung Deutscher Wissenschaftler; VDW); this has since become a platform for discussions about the responsibility of scientists and science in general.⁵

It should be remembered that several members of the Göttingen Group had been involved in the ‘Uranverein’ (‘Uranium Club’), the nuclear research group under the fascist system in the German Reich. After the end of war and after the US had dropped its atomic bombs on Japan, the Germans had a difficult role in the debate about the responsibility and guilt of scientists for their use. They claimed that they had had no opportunity to take a decision for or against the bomb. Because of limited resources they had ceased working on military technology at a very early stage and had concentrated on the production of civil nuclear energy. From the point of view of allied physicists, that seemed as if it was they who were being accused. Their brave and successful efforts against evil seemed converted into guilt. For them, that was not acceptable. Heisenberg and Weizsäcker in particular faced some resentment. Thus, in 1957 they were not interested at all in seeing their names connected with nuclear research for military ends.

Without any doubt Weizsäcker felt a deep responsibility for the prevention of any further use of nuclear weapons. The establishment of a peace that was politically

³ See Götz Neuneck: “The Atomic Bomb Reveals the Political Responsibility of Science”, in: Lutz Castell and Ottfried Ischebeck (Eds.), *op. cit.* 2003: 27–58.

⁴ See (in German) Ilona Stölken-Fitschen: “Die Göttinger Erklärung im zeithistorischen west-deutschen und internationalen Kontext”, in: Stephan Albrecht et al. (Eds.): *Wissenschaft–Verantwortung–Frieden: 50 Jahre VDW* (Berlin: Berliner Wissenschafts-Verlag, 2009): 81–90.

⁵ See (in German) Hans-Joachim Bieber: “Carl Friedrich von Weizsäcker und die Vereinigung Deutscher Wissenschaftler”, in: Klaus Hentschel and Dieter Hoffmann (Eds.): *Carl Friedrich von Weizsäcker: Physik-Philosophie-Friedensforschung. Leopoldina-Symposium vom 20–22. Juni 2012 in Halle Saale* (Stuttgart: Wissenschaftliche Verlagsgesellschaft Stuttgart, 2014): 377–388.



This photo shows Carl Friedrich von Weizsäcker (+2007), in the *middle* in a conversation with Otto Hahn (+1968), Nobel Laureate in Chemistry in 1944 (on the *left*) and Max von Laue (+1960), Nobel Prize in Physics, 1914 (on the *right*) during a meeting of the Nobel Prize Laureates in Lindau, Germany. *Source* Archives of the Max-Planck Society, Berlin-Dahlem

secured and not built on military power became his life's aspiration.⁶ He was sure that any weapon, once invented, will be built, and once built, will be used—even-
tually. But in the nuclear age that is no longer an option. Here Weizsäcker agreed
with the Russell–Einstein Manifesto and became a member of the Pugwash
Movement. The VDW undertook to act as the German section of Pugwash. The

⁶ See (in German) Mark Walker: “‘Mit der Bombe leben’—Carl Friedrich von Weizsäcker's Weg von der Physik zur Politik”, in: Klaus Hentschel and Dieter Hoffmann (Eds.): *Carl Friedrich von Weizsäcker: Physik-Philosophie-Friedensforschung. Leopoldina-Symposium vom 20–22. Juni 2012 in Halle (Saale)* (Stuttgart: Wissenschaftliche Verlagsgesellschaft Stuttgart, 2014): 343–356.



This photo was taken probably during a reception of the Order Pour-le-Merité (in the residence of the German Federal President). This photo shows Carl Friedrich von Weizsäcker (on the *right*), Werner Heisenberg (in the *middle*) and Walther Gerlach (on the *left in the background*) who were signatories to the Göttingen Manifesto. *Source* Archives of the Max-Planck Society, Berlin-Dahlem

active struggle for peaceful international relations remained part of Weizsäcker's work.⁷ He spent a huge amount of his energy and resources on peace research, which he saw as a realistic, non-utopian task. Arms control, nuclear deterrence and strategic as well as tactical military research had their place on the agenda of Weizsäcker's institutes in Hamburg and Starnberg. In parallel, he developed his philosophical works and was engaged in the development of quantum theory, never forgetting his fundamental basis of religious thinking and belief.⁸

⁷ See (in German) Klaus Gottstein: "Die VDW und die Pugwash Conferences on Science and World Affairs", in: Stephan Albrecht et al. (Eds.): *Wissenschaft–Verantwortung–Frieden: 50 Jahre VDW* (Berlin: Berliner Wissenschafts-Verlag, 2009): 359–378; Götz Neuneck: "Die deutsche Pugwash-Geschichte und die Pugwash-Konferenzen–Ursprünge, Arbeitsweise, Erfolge–Das Ende des Kalten Krieges und die Herausforderungen der Zukunft", in: Stephan Albrecht et al. (Eds.): *Wissenschaft–Verantwortung–Frieden: 50 Jahre VDW* (Berlin: Berliner Wissenschafts-Verlag, 2009): 377–392.

⁸ See (in German) Klaus Michael Meyer-Abich: "Begegnungen und Wiederbegegnungen–Philosophie und Religiosität des Physikers Carl Friedrich von Weizsäcker", in: Klaus Hentschel and Dieter Hoffmann (Eds.): *Carl Friedrich von Weizsäcker: Physik-Philosophie-Friedensforschung. Leopoldina-Symposium vom 20–22. Juni 2012 in Halle (Saale)* (Stuttgart: Wissenschaftliche Verlagsgesellschaft Stuttgart, 2014): 525–538.



Josef Rotblat, Nobel Peace Prize Laureate, former secretary general and then president of Pugwash Conferences on Science and World Affairs, Hans-Peter Dürr, Right Livelihood Award Recipient, Chairman of the Vereinigung Deutscher Wissenschaftler VDW (1991–1997; 2000–2002) and Carl Friedrich von Weizsäcker, Chairman of VDW (1969–1973), during a discussion meeting on “For a Nuclear Weapon Free World” at the University of Munich in April 1997. *Source* Michael Schaaf, Johannesburg, South Africa

In the four other volumes of this series, the editors present selected papers on philosophy, politics, physics and religion, providing a selection of key texts.⁹ This introductory volume offers an overview of Carl Friedrich von Weizsäcker’s immense and creative written output. These texts are still worth reading as relevant contributions to the pressing questions of our times and of the future—at least, as long as atomic weapons exist, and as long as philosophy, politics and religion are challenged to deal with those problems. Furthermore, the philosophical

⁹ See the selected texts in the four subsequent anthologies of the selected writings of Carl Friedrich von Weizsäcker edited after the celebration of his 100th birthday in 2012: Michael Drieschner (Ed.): *Carl Friedrich von Weizsäcker: Major Texts in Physics* (Cham–Heidelberg–New York–Dordrecht–London: Springer-Verlag, 2014); Michael Drieschner (Ed.): *Carl Friedrich von Weizsäcker: Major Texts in Philosophy* (Cham–Heidelberg–New York–Dordrecht–London: Springer, 2014); Konrad Raiser (Ed.): *Carl Friedrich von Weizsäcker: Major Texts on Religion* (Cham–Heidelberg–New York–Dordrecht–London: Springer, 2014); Ulrich Bartosch (Ed.): *Carl Friedrich von Weizsäcker: Major Texts on Politics and Peace Research* (Cham–Heidelberg–New York–Dordrecht–London: Springer, 2014); see for details at: http://afes-press-books.de/html/SpringerBriefs_PSP_C.F.v._Weizsaecker.htm.

interpretation of quantum theory will remain a relevant approach to the epistemic foundation of this field.¹⁰

The collection starts with a paper written by Weizsäcker in 1969, in which he reflects on the agenda of the new “Max Planck Institute for Research into Living Conditions in a World of Science and Technology”. One can recognize the visionary shape of the think tank located in Starnberg near Munich.¹¹ It was a unique enterprise that focused on the interaction between humankind and nature in creating a future which is worth living in. The key issue is the need for security: “I am constantly employing the concept of *politically secured* world peace. This is because I do not consider a world peace as stable based only on the peacefulness of sovereign nations capable of waging war.” (C.F. von Weizsäcker) The Starnberg Institute became a workshop for peace-building.

In ‘Soliloquy’, one can accompany Weizsäcker as he reflects on his roots. It comes from a volume called ‘Bewusstseinswandel’ (“Change of Consciousness”); the author is reflecting on his own development. Entanglement with the dark times of German history and his involvement in research in the Third Reich are dominant themes of the poem.

Is it reasonable to confess one’s own fear? It is, said Weizsäcker and such a confession is not for the timid. He wrote “About the Courage to Admit One’s Own Fear” at a time of intense and emotional debate throughout Germany about the upgrade of intermediate nuclear forces with Pershing two missiles. He published the article in one of the leading daily newspapers a week before the parliament’s decision. To understand the existential fear Weizsäcker felt, one has to take notice of his anticipation of what the Soviet Union would be able to handle: “The current poor prognosis for its economy is just one more sign of danger for me. For one thing will not happen: it is not going to ‘collapse with a sigh.’” Every attempt to accelerate the arms race and to overextend the Russian economy would risk a nuclear inferno as result. In a postscript, he later confessed that he had been wrong. Meanwhile, the end of the Cold War was rapidly approaching. But again, he pointed to the need to encourage Gorbachev, to help him stabilize the system and not to try to beat the Russians when they were weak. They now “would be integratable into a more peaceful world order”.

In his Introduction to “Limits to an Atomic Economy” by Klaus Michael Meyer-Abich and Bertram Schefold, published in 1986, Carl Friedrich von Weizsäcker withdrew his support for civil nuclear energy. This was a necessary change in his

¹⁰ See Michael Drieschner: “C.F. von Weizsäcker’s Philosophy of Science and the Nature of Time”, in: Lutz Castell and Ottfried Ischebeck (Eds.): *Time, Quantum and Information: dedicated to C.F. von Weizsäcker in commemoration of his 90th birthday* (Berlin Heidelberg: Springer-Verlag, 2003): 187–202; Klaus Michael Meyer-Abich: “Science and Its Relation to Nature in C.F. von Weizsäcker’s Natural Philosophy”, *ibid.*, 2003: 173–185.

¹¹ See (in German) Horst Kant and Jürgen Renn: “Eine utopische Episode—Carl Friedrich von Weizsäcker in den Netzwerken der Max-Planck-Gesellschaft”, in: Klaus Hentschel and Dieter Hoffmann (Eds.): *ibid.*, 2014: 213–242; (in German) Ariane Lendertz: “Ein gescheitertes Experiment—Carl Friedrich von Weizsäcker, Jürgen Habermas und die Max-Planck-Gesellschaft”, *ibid.*, 2014: 243–262.

position since he had been stressing the mismatch between nuclear power plants on the ground and nuclear deterrence through control of escalation for many years. The only way to justify these operations was by siting the nuclear power plants underground. This was not acceptable to industry or politicians because of the costs involved and the security risk. Weizsäcker now joined the authors in arguing that the demand for energy could be better and more safely met through renewable technologies: “Under this presumption I now definitely advocate solar energy as the main energy source, supported by energy savings made feasible by technology, and I oppose nuclear energy as the main energy source; to no greater extent can I view fossil fuels as a supportable main source of energy for the longer-term future.” This was indeed a landmark in the nuclear debate in Germany and led more or less directly to Germany’s opting out of the nuclear energy programme of today.

The title “The Conditions of Freedom” contains an implicit reference to a text from 1963. In “The Conditions of Peace” (which is included in PSP-25 with texts on politics and peace research), Weizsäcker had defined the essential conditions for a viable future for mankind given the preconditions of the antagonism between East and West. The guiding tenet of that era was the avoidance of armed conflict. After the peaceful changes in Europe, an “unanticipated, tremendous gift”, there seemed to be a chance for a sustainable change in world politics.¹² The next steps could be taken without the immediate threat of nuclear warfare. But everyone has to be aware that any action “is surrounded by continual great peril”. Weizsäcker did not want to be the spoilsport who disturbed the joy of the real changes that had taken place, but he saw the chance to get more people to see and feel the dangerous reality behind those real changes. Mankind had to face them before a new military confrontation and renewed old thinking could destroy the window of opportunity. The reasonable joy about the “tremendous gift” should not lead to the dangerous delusion that everything is on the right path now:

Among the responsibilities for humanity, the cultural sphere, nations, the environment, the economy and society, not one of them could not, in principle, be solved by the common application of reason by people. Yet hardly does such an enormous claim appear in our thinking before we realize: The current state of consciousness of humanity is not capable of such reasonable action (C.F. von Weizsäcker).

The experience of the great influence of the Protestant Church in the former German Democratic Republic and also of the Catholic Church in Poland encouraged him to count on the peaceful power of religious people around the world to develop a new level of consciousness. The “Conditions of Freedom” could establish a sustainable politically based peace and be understood as the real “Conditions of Peace”.

¹² See Ulrich Bartosch: “‘Weltinnenpolitik’ als Weg zum Ewigen Frieden? Carl Friedrich von Weizsäckers realistischer Idealismus als Theorie einer nachhaltigen Politik”, in: Klaus Hentschel and Dieter Hoffmann (Eds.): *Carl Friedrich von Weizsäcker: Physik-Philosophie-Friedensforschung. Leopoldina-Symposium vom 20–22. Juni 2012 in Halle (Saale)* (Stuttgart: Wissenschaftliche Verlagsgesellschaft Stuttgart, 2014): 323–340.

In February 1989, Weizsäcker delivered a speech in Stuttgart. He received the Theodor Heuss Prize, well known in Germany, and took the opportunity to promote and tell people about the convocation of Christianity in Seoul that was planned for and realized (as the World Convocation on Justice, Peace and the Integrity of Creation) in 1990. He refers again to the persistent danger: “It is easy to contend that it would be impossible to overcome war; one would then just have to honestly admit that this is to say that there is no future for humankind in the technical age.” This focuses on the very core of Weizsäcker’s political thinking. In the same speech he insisted that history demonstrates the reality of peaceful change and of the establishment of political and legal frameworks which end the institution of war within their borders. The development of German–French relations was for him one of the clear proofs. He formulated three aims: “1. securing world peace, 2. an internationally enforceable legal system, 3. internationally agreed and enforceable environmental protection”. His wish was that the change of consciousness essential for achieving these aims might be on its way. He was encouraged by the enormous changes of those years.

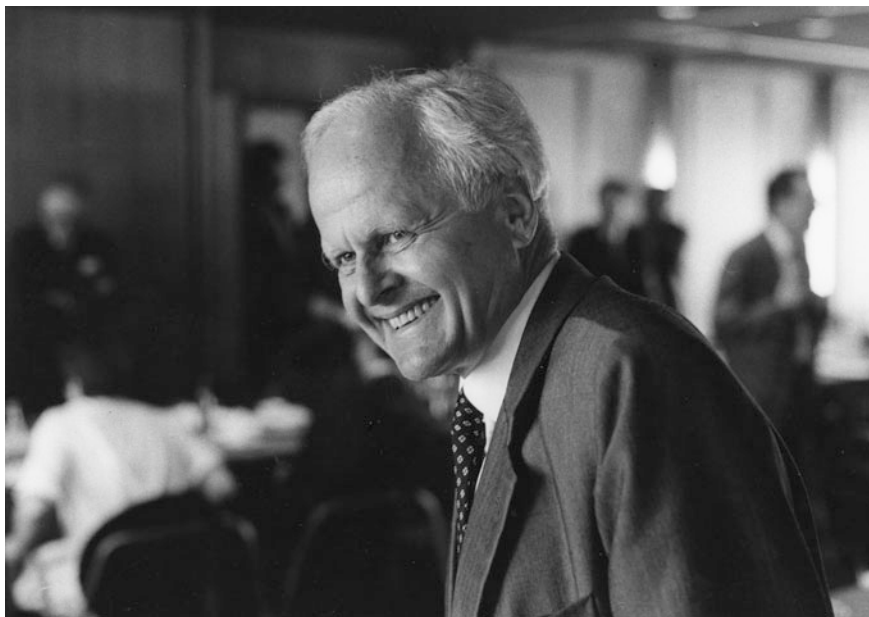
The “Circular Walk” represents Weizsäcker’s way of philosophical thinking in a hermeneutic mode. It contains passages from a remarkable book which he published parallel to the work on his magnum opus “Zeit und Wissen” (“Time and Knowledge”), planned in two volumes, which is mentioned in it. One can say that “Der Mensch in seiner Geschichte” (“Humankind in its History”) is a kind of testament. Weizsäcker once again brought together all the major streams of his thinking. Individual development as the origin of individual thinking and knowledge, as well as the development of humankind as the origin of its environment, condition and sphere of impact, are both reflected. The author does not aim for a definitive treatise. He wants to deal with thinking as a work in progress: “Respecting philosophical procedure, the distance maintained here from any ‘hierarchical’ claim to a ‘system’ is important; such claims have pervaded the two millennia of the history of philosophy. Instead I employ here the vocabulary ‘round tour’ or ‘circular path’: one may enter a circle anywhere but must then walk around a few times.” One can see Plato’s cave allegory as a frame for the method Weizsäcker is explaining in the chosen passage.

It must be underlined that Carl Friedrich von Weizsäcker was a physicist by training and in his heart. In the “Circular Walk” one can read:

Science, specifically theoretical physics, is my profession by training, in which I am also still employed today. Philosophy is the attempt to understand what we think and what we do; for me, for instance, it was initially an attempt to understand science. Politics, by contrast, is the grim duty of the physicist in the age of the atomic bomb (C.F. von Weizsäcker).

One should add that his research on quantum theory led him directly to philosophical questions and vice versa. On this essential field of Weizsäcker’s work, texts are included in the two volumes on physics and philosophy in this series.¹³

¹³ See Michael Drieschner (Ed.): *Carl Friedrich von Weizsäcker: Major Texts in Physics* (Cham–Heidelberg–New York–Dordrecht–London: Springer-Verlag, 2014): 75–110; Michael Drieschner (Ed.): *Carl Friedrich von Weizsäcker: Major Texts in Philosophy* (Cham–Heidelberg–New York–Dordrecht–London: Springer, 2014): 109–126.



Carl Friedrich von Weizsäcker. *Source* Archives of the Max-Planck Society, Berlin-Dahlem



Carl Friedrich von Weizsäcker in a private conversation in his home in Starnberg near Munich with Ulrich Bartosch (chairman of VDW) (2009–2015) in winter 1993. *Source* C. Bartosch

In addition, there are English-language publications available for specialists.¹⁴ The work presented here is taken from “Zeit und Wissen”, a book of more than a thousand pages, and elaborates on the book’s title:

The title (translated as) “Time and Knowledge” suggests the direction of the inquiry: It involves *time as a precondition of knowledge*. Consequently, the *modes of time* are involved primarily. We now know what has passed, in the form of facts; we now know what will be, in the form of possibilities. The now elapses incessantly. We can measure the time elapsed since a definite past event as a matter of fact, e.g., since the striking of midnight by a clock, hence by means of clocks. We anticipate future time. The outcome of these riches in the ontology of classical physics and also in conventional quantum theory is nothing but temporal intervals measurable on clocks, idealized as measured in the continuum of real numbers (C.F. von Weizsäcker).

Like physics and philosophy, religion has a central position in Weizsäcker’s thinking. Indeed this leads on from rational and logical thinking in science to the *Wahrnehmung* of reality. The English meaning of this word lies between ‘perception’, ‘cognition’, ‘subception’ (a psychologist’s word for “subliminal perception”), and ‘awareness’. Religion covers an important part of human expression and of the reality of life. It is not an outdated, old-fashioned way of looking at and understanding the world. It is a contemporary alternative approach to reality, wider than science can conceive. Religion has the serious task of saving the future of humankind, and it contains special, absolutely essential opportunities for peaceful human understanding. Religion has a unique role in philosophy and science:

Quantum theory teaches us not to believe in a substantial distinction between matter and consciousness anymore; behavioural research on animals and the psychology of the subconscious teach us to reflect very much more critically than before about the causality of human conduct. Neither can one think that science had just won, however, and that theology and philosophy had become ineffective and obsolete. The step into philosophy, as a matter of fact, happens every time the sciences notice that they do not know what the words mean in which they expound their methods; the ‘body/mind problem’ in biology and medicine is a relevant example here. And theology always regarded it as a duty to pass judgment on everyday human morality Theology is neglecting its duty when it withdraws from secular daily life. On the other hand, a social science that does not feel the hidden continuing truth of the Sermon on the Mount has not understood its subject matter adequately. What is involved is a common problem of theology and philosophy, of science and everyday morality (C.F. von Weizsäcker).

Due to the formative influence of religious experience and creed on Weizsäcker, one volume is dedicated to this theme.

In the sense of closing remarks and at the same time making reference to ‘Wahrnehmung’ as a kind of holistic approach to reality, the poems from 1945 are placed at the end of the book. They allow an intimate insight into Weizsäcker’s self-perception. They need receive little comment in this Introduction. It has to be mentioned that the then 33-year-old young man at this point was interned at Farm

¹⁴ See with many references: Lutz Castell and Ottfried Ischebeck (Eds.): *Time, Quantum and Information: dedicated to C.F. von Weizsäcker in commemoration of his 90th birthday* (Berlin–Heidelberg: Springer, 2003).

Hall in God manchester near Cambridge (England), together with all the scientists who had been part of the “Uranium Club” under the Nazi regime. He reflects in these poems on the situation of someone on the losing side who does not want to be seen as someone on the side of pure evil—while knowing that he has been doing his work in the charge of an actual evil regime. It is an essentially German position he is reflecting on. Some brief information about the persons mentioned: Carl Friedrich’s younger brother *Heinrich Viktor* (1917–1939) fell in the first days of World War II. His younger brother *Richard Karl* (1920–2015) later became the President of Federal Republic of Germany (1984–1994). His father *Ernst Heinrich* (1882–1951) had served as an undersecretary in the German foreign ministry (1938–1943), and was later appointed ambassador to the Holy See in Rome (–1945).

It is the intention of this book to build a bridge to the thinking of Carl Friedrich von Weizsäcker. It tries to deliver the supports for this bridge through selected papers, knowing that this cannot possibly cover the complete works of this eminent scholar. It will achieve its aim if readers are encouraged to enrich their own reflection. If so, Weizsäcker would be confirmed as what he ought to be in the view of the editors of the five volumes in this series: an original thinker who can help us understand our world.

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