weizenbaum journal OF THE DIGITAL SOCIETY

SPECIAL ISSUE 03

WEIZENBAUM JOURNAL OF THE DIGITAL SOCIETY
Volume 3 \ Issue 3 \ w3.3.4 \ 10-23-2023
ISSN 2748-5625 \ DOI 10.34669/WI.WJDS/3.3.4

Information on this journal and its funding can be found on its website:
https://wjds.weizenbaum-institut.de

KEYWORDS

humanism
philosophy
anthropology

INTERVIEW

The Image of Man in Artificial Intelligence

A Conversation with Joseph Weizenbaum

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ABSTRACT

Joseph Weizenbaum fled the Nazis to emigrate to the USA, later studying mathematics and becoming a professor of computer science at the Massachusetts Institute of Technology. He achieved fame for the ELIZA program, which simulates a psychotherapist that (at least superficially) tries to understand its client on a psychological level. That program represents a very early precedent for the chatbots now simulating human language. Weizenbaum's research led him to develop a critical attitude toward the possibilities, limits, and uses of computers. His seminal work, *The Power of Computers and the Powerlessness of Reason*, concerned the effects of computers on the world of human experience, at that time a new, explosive, and largely uncharted field. This current text makes available in English for the first time an interview with Joseph Weizenbaum conducted in 1998. The interview focuses on the development of artificial intelligence, arguments about analogies between humans and artificial intelligence, and perspectives on critical thinking about the relationship between humans and computers.

1 Joseph Weizenbaum: A Biographical Sketch

Born in 1923 to Jewish parents, Joseph Weizenbaum fled Nazi Germany for the USA in 1936 and later studied mathematics. As an assistant at Wayne University in Detroit, he started working with computers, wrote the Slip programming language, designed the computer system for the Bank of America (in 1955), and taught as a guest lecturer at Stanford University. In 1963, Weizenbaum became a professor of computer science at the Massachusetts Institute of Technology (MIT), where he taught until his retirement in 1988. He achieved fame for the ELIZA program, which simulates a psychotherapist that (at least superficially) tries to understand its client on a psychological level. The program's answers and questions resemble a psychotherapist from the Carl Rogers School.

Weizenbaum became active in the peace movement during the Vietnam War and continued to be involved henceforth. He co-founded the Computer Professionals for Social Responsibility and the Forum of Computer Scientists for Peace and Social Responsibility in the Federal Republic of Germany. In 1976, his seminal work, *The Power of Computers and the Powerlessness of Reason*, was published for the first time. The book concerns the effects of computers on the world of human experience, at that time a new, explosive, and largely uncharted field. In two other books ("Kurs auf den Eisberg" and "Wer findet die Computermythen?"), he draws attention to the close connection between the military and computer science research and vehemently criticizes propo-nents of artificial intelligence (AI).

2 A Personal Recollection: Joseph Weizenbaum as Science Critic, Mystic, and Human Being

When I think back to Joseph Weizenbaum on the occasion of this interview's publication, I recall how stimulating and gratifying it was to converse with him.[1] Three encounters have remained particularly entrenched in my memory.

For context, Weizenbaum was a frequent guest at my parents' house in Freiburg during my youth. There, he poked fun at the scientific establishment with verve over dinner, once delivering a critique of the power of paradigms informed by the sociology of knowledge developed by Ludwik Fleck and Thomas S. Kuhn.[2] On one especially memorable occasion, he invented an epistemological parable off the cuff, employing his idiosyncratic mixture of friendly, mischievous shrewdness and narrative joy. He called this parable the *Curriculum Vitae of a Counterexample*. Listening to him speak, I had the realization that this scientist thinks radically differently. Despite just a short time earlier being commonly recognized as gifted and innovative, he was now offering a counterexample to what the mainstream and so-called normal science believes and accepts as truth. For Weizenbaum, several questions could be asked of this counterexample. First, who is this person that has such audacity? Even this simple question can destroy the counterexample's credibility. After all, who wants to believe a nobody and give them the time of day? Second, potentially no less damning, *from where* or from which school of thought does this person come from who believes themselves capable of shaking up an established and recognized paradigm? Third, *where* has the person published? In which journals and with whom? Are these really recognized authors and renowned outlets? That is, do we really have to take the person seriously? What Weizenbaum was really trying to articulate was the reality that the processes of scientific knowledge generation are never merely rational. Instead, there is always also a social component. The issue here is the influence of individuals and the influence of schools and groups on power and an elusive, diffuse assessment of reputation that ultimately aims at disciplining, demanding conformity, and sometimes excluding. I became aware that Joseph Weizenbaum was coming to terms with his own experiences, but he was doing so in his own way: in the mode of a narrating scholar, implicitly and with tact, without doggedness, and with a large serving of humor.

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1 The original interview was first published in German in 2000 in *Communicatio Socialis*, 1, 4–17, and in the same year in the following volume: Flessner, B. (Ed.), *Nach dem Menschen. Der Mythos einer zweiten Schöpfung und das Entstehen einer posthumanen Kultur*. Rombach. pp. 265–280. Incidentally, I first published an interview with Joseph Weizenbaum in the magazine *Universitas* in 1997 under the title "'Die Verletzbarkeit des Individuums ist groß.' Ein Gespräch mit Joseph Weizenbaum." ["'The Vulnerability of the Individual is Huge.' An Interview with Joseph Weizenbaum."] in: *Universitas. Zeitschrift für interdisziplinäre Wissenschaft*, 1, 25–33.

2 See Fleck, L., & Ludwik, T. S. (1993). *Entstehung und Entwicklung einer wissenschaftlichen Tatsache. Einführung in die Lehre vom Denkstil und Denkkollektiv. Mit einer Einleitung herausgegeben von Lothar Schäfer und Thomas Schnelle* (2nd edition). Suhrkamp. For further detail, see Kuhn, T. S. (1991). *Die Struktur wissenschaftlicher Revolutionen* (11th edition). Suhrkamp.

The second encounter that I continue to remember vividly took place during my studies and had a wonderfully absurd quality to it. The professor of philosophy and aesthetics Prince Rudolf zur Lippe invited Weizenbaum to attend a multi-day seminar at the Hude Abbey, where zur Lippe lived in picturesque surroundings. Because this invitation came at rather short notice and the panels were scheduled for the middle of the week, most of the invited guests could not attend. This allowed a university friend and me to get on the invitation list and talk to Weizenbaum for hours in the abbey's winter garden while peacocks and swans paraded up and down in front of the windows, sometimes looking at us with curiosity. For us, this was exhilarating: What an opportunity, we thought, what a chance! Weizenbaum was initially somewhat disgruntled when he saw the small group of participants that had come together. After the first round of discussions, he told zur Lippe that next time they could "meet in a telephone booth," where there would certainly be room for everyone. In the evening, we ate roasted rabbit from a nearby restaurant served on zur Lippe's stately tableware. Several participants quickly discovered shotgun pellets in their dinner, discreetly depositing them on the edge of their plates. Nonetheless, the atmosphere was relaxed, and Weizenbaum gave a kind of after-dinner speech during which he suddenly began to talk about the importance of mystical thinking for his work. Despite the imposing aura of this former abbey, he did this in an indirect, coded way, like a representative of the apophatic, the negatory theology. He circled the subject using riddles but retained the certainty "that there is something unspeakable, a living truth that cannot be put into words," as he puts it in the conversation published here. That evening he emphasized, contrary to the forms of thought he had come to know at MIT and in the natural sciences, with an impressive cautiousness and without a merely fashionable hostility to reason, the fundamental inexplicability of the world. In that moment, it became clear to me that he was acting not primarily as a computer scientist but as a mystic wanting to give the sense of wonder a place and a reason to exist again in a supposedly completely fathomable world.

The third and final encounter I want to mention took place in Bremen. The cultural critic, philosopher of technology responsible for *Tools for Conviviality*, and one-time papal monsignor Ivan Illich ran an open house at his residence in the city with his partner, the historian of the body Barbara Duden. Following his lectures on Friday afternoons at the University of Bremen, he regularly invited students and various friends from all over the world to continue discussions with him into the night. Here, too, Joseph Weizenbaum and I met on several occasions. In 1998, Illich received the Culture and Peace Prize of Villa Ichon in Bremen. Beset by illness and pain, his acceptance speech to the citizens of the city described in a most profound and deeply melancholic way the nature of the search of an intellectual and citizen of the world for something like home.[3] For him, it was an unexpected stroke of luck that he

[3] Illich had fled the Nazis, too – his mother had been Jewish before converting. He went to Florence and Rome, became a priest in New York, and, at age 30, vice-rector of the Catholic University of Puerto Rico.

had found at last a "corner of home"[4] in Bremen after countless stops along the road, including long-term stays in Latin America and the USA alongside guest professorships at many universities around the world. In that moment, he spoke as a poet and mystic, another apophatic theologian. Joseph Weizenbaum and I stood together for a moment after that speech, and I never again saw him so moved. His only comment: "That was wonderful." I realized that he, too, was a displaced person, a seeker, and, most of all, a reconciler who had returned to Germany and lived in Berlin, the city of his birth, until his death. The following conversation took place at some point after that encounter in 1998. I hope that it will demonstrate to readers the characteristic humanity of Joseph Weizenbaum, science critic and mystic.

3 The Human Image of Artificial Intelligence: A Conversation with Joseph Weizenbaum

The Model of the Machine and the Model of the Human Being

Pörksen: Anyone dealing with artificial intelligence repeatedly encounters two fundamentally different perspectives. Some AI proponents view humans as models of machines. Machine intelligence, they imagine, should imitate human intelligence. However, another group of researchers believes that humans have forfeited this role as the ideal imitation model, with machines of the future now anticipated to be superior to humans, largely perfect entities endowed with fantastic power of thought. Can you identify which of these two research strands was there at the beginning?

Weizenbaum: These two strands have been running side by side in some form or other since the beginnings of AI at the famous Dartmouth Conference in 1956. You can recognize that since the beginning, it's not only that man has been regarded as the model and ideal but that the machine has been understood as the pattern for the model to be built. As such, on the one hand, there's Marvin Minsky, who said, "The brain is merely a meat machine." In English, there are two words for the German *Fleisch*: meat and flesh. Flesh is alive; it's living flesh. With meat, though, you can do whatever you want. You can eat it, you can fry it, you can burn it. It's dead. In this sentence, however, man remains the role model. It is he whose intelligence one wants to reproduce. What resonates here, however, is the idea that this should present no difficulty because his central organ – the brain, which determines and characterizes him – is just a meat machine and nothing more.

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[4] For an analysis of this idiom, see Hartch, T. (2015). *The prophet of Cuernavaca. Ivan Illich and the crisis of the West*. Oxford University Press.

On the other hand, there is the dogma, also articulated by Marvin Minsky, that God was not a very capable engineer and that man is an aberration with many superfluous weaknesses. He needs sleep and he learns only laboriously before forgetting again. Furthermore, he is mortal. However, we can create something much better and more perfect, according to the view that became widespread in the AI community very early on. We are building the ideal model, a creation that remains oriented toward humans in some respects but that nevertheless comes closer to perfection.

Pörksen: If you take this idea a step further, it actually means that, from this perspective, humans will become an evolutionary link between apes and a machine being that trumps them. Luc Stells, AI professor at the Free University of Brussels, suggests calling this being of the future "Homo cyber sapiens" or, alternatively, "Robot hominidus intelligens."

Weizenbaum: Hans Moravec, director of the Mobile Robot Laboratory at Carnegie Mellon University, made a similar proposal in his book *Mind Children*. He believes that human consciousness can be downloaded onto a robot and that it can and should be copied in order to detach it from its necessarily mortal body, which he regards as a mere vehicle of the mind. The essence of man, he thinks, is information. He despises the body.

Pörksen: Other authors who are close to Moravec in their thinking call the human body just as unkindly "a piece of meat," "mush," or "brawn."

Weizenbaum: That's just the way people talk in this milieu. In any case, from this perspective, the robots of the future represent a correction and improvement on nature. Moravec claims that such machines could "advance our civilizational evolution." What he wants is conscious and controlling intervention in the process of evolution, which he considers flawed. By the way, his ideas are not considered science fiction or mere trivia in the United States. They circulate at the country's top universities – after all, his book has been published by Harvard University Press.

Promethean Shame and Promethean Pride

Pörksen: In this veneration of the machine as a new crown of creation, one can assume that a basic feeling is expressed. The philosopher Günther Anders once called this feeling "Promethean shame," referring to a feeling of inferiority, something like helplessness or even shame in the face of the enormous quality of self-designed machines. Do you share that diagnosis?

Weizenbaum: There is certainly this general psychological phenomenon that when confronted with a particularly perfect performance, people feel inferior and ashamed of their own weaknesses. In this sense, Günther Anders is right.

Pörksen: Marvin Minsky once said that the thinking power of silicon brains is so fantastic that we – meaning humans – could be happy if the robots of the future were to keep us as pets.

Weizenbaum: But it's not just a matter of shame; there is an observable dialectic of feelings that almost every programmer is familiar with. A certain pride remains even if, for some reason, you think the computer is better and smarter. After all, you were the one who wrote that particular program. In this way, a fundamental paradox arises. You're ashamed of your own weakness and yet, at the same time, proud that you were able to write and create such a superior program.

Pörksen: Moravec also speaks of the new robots – and this connects to this idea of a certain kind of pride – as his "spiritual children."

Weizenbaum: Something else is striking here, namely, that it is a man speaking in this way. Is that a coincidence? I don't think so. After all, the field of AI is dominated by males. It seems to me that, as well as the delusion of playing God, the envy of women and their ability to bear children is also a driving motive. What is expressed here, I would call *uterine envy*.

Pörksen: You mean a complementary phenomenon to the "penis envy" described by Sigmund Freud?

Weizenbaum: Exactly. You can now pretend that you can also produce children, children whose diffusion makes better and more intelligent than any human being.

Pörksen: But such claims are completely speculative. Furthermore, Minsky's announcement that we could be happy if the machines of the future were to "keep us as pets" seems completely exaggerated in view of the robots that have been produced to date. Couldn't the relative lack of success of AI research represent the very source of a new self-awareness, with humans able to see what the machine can't do?

Weizenbaum: Of course, looking at the unfulfilled prophecies of AI, you might say, "Aren't we wonderful? Aren't we great?" But that's nonsense. One should not measure human dignity by what a machine can or cannot do or by how well a computer plays chess. The fatal flaw in this form of thinking – which is still intended to be humanistic – is that the machine becomes the measure of the human being. The ability and inability of a robot is not a basis for determining human self-awareness.

The Secret Anthropology of the Technological World

Pörksen: For me, the question persists regarding whether we should take seriously the various forecasts from the fable realm of AI. Although much of it seems simply absurd, some of it is also funny, amusing, and stimulating. You're confronted with crazy speculations, outrageous ideas, and astonishing thoughts. Again, do you have to take the ideas of a Minsky or Moravec seriously?

Weizenbaum: That's actually two questions. The first concerns whether we should expect humans to be able to actually produce such superior machines. Should we be afraid that such robots will actually exist one day and that we will subsequently become their pets? My response is that we do not have to, and I would add that there is little point debating technical feasibility with these people. That is a losing game that only spurs new and perhaps equally undesirable developments. The second question concerns whether we should take seriously the ideas being disseminated here. To this, I say, yes, absolutely! And that is because these authors, among others, are propagating an extremely dangerous image of man at the threshold of the millennium.

Pörksen: What does this image of man look like?

Weizenbaum: It is based on the idea that man is a machine that can – in principle and in the near future – be understood and decoded to correct it and improve it. The central dogma of this view of man is the idea that every aspect of life is computable, meaning it can be broken down into calculable and formalizable processes.

Pörksen: If I understand correctly, you are primarily concerned not with the question of technical feasibility but with a kind of wordless ideology that comes to life with technical utopia. Marshall McLuhan must have meant something very similar when he spoke of the symbolic effect of technology as "the symbolic fall out of technology." For McLuhan, technology gives rise to an environment and a world of symbols. In this way, it changes our human self-understanding.

Weizenbaum: Should it really be possible to produce such intelligent machines, this will only happen in the distant future and after many more generations. However, the image of man is changing today and with great success. Minsky or Moravec didn't fall out of the sky. They formulated their theses in a culture and at a time when people absolutely believe in the natural sciences and modern technology.

Pörksen: Let me ask you again: What are the dangers of an image of man that is based on analogies from the world of machines?

Weizenbaum: We can learn from the history of this century, perhaps the most brutal century, what a decisive role the image of man played in the crimes of the past, remembering that the most atrocious crimes were made possible because the perpetrators denied the humanity of the victims. In the Nazi era, Jews were portrayed as vermin, a metaphor that legitimized mass murder. Today, supported by the authority of the natural sciences, the idea that man is merely an information-processing machine that can be replaced by a robot is gaining substance and power. This perspective is consistent with Moravec's discourse about a "post-biological society" ruled by robots.

On the Consequences of a Metaphor

Pörksen: You mean that animal and machine metaphors are similar?

Weizenbaum: Exactly, and in one decisive respect. These metaphors destroy reverence for man, rendering his possible end seemingly bearable. Just as we do not respect vermin, we no longer have to respect meat machines. Such metaphors are a starting point for people committing every imaginable cruelty. This has been confirmed in a terrible way in our century.

Pörksen: You reacted particularly angrily to Hans Moravec's book *Mind Children*, saying that Moravec was ultimately aiming at a "final solution to the question of humanity." Why this reference to the crimes of the National Socialists? I don't really understand the purpose of drawing that analogy.

Weizenbaum: That may be. But we are all the result of our history, a history that begins before we are born. What shapes us are the experiences we have. What influences us is the social situation into which we are born. As such, it is unsurprising that I of all people – perhaps I should add, in quotation marks, "a German Jew" – should be drawn to this analogy. Someone else would probably notice something different.

Pörksen: Nonetheless, the question arises: What is the common ground between National Socialist racial mania and the fantasies of an AI professor?

Weizenbaum: Of course, Hans Moravec does not stand in front of the mirror every morning and practice the Hitler salute. That is not the point. What I'm getting at is the immense power of an inhumane image of man, an image that can spread like a virus in a society. I believe that the essential common ground between National Socialism and the ideas of Hans Moravec lies in the degradation of the human and the fantasy of a perfect new man that must be created at all costs. At the end of this perfection, however, man is no longer there. He disappears in Moravec's post-biological society. I am deeply convinced that a humane image of man must be defended today against the dominance of machine metaphors.

Pörksen: But nobody is helplessly at the mercy of an image of man determined by the machine metaphor. After all, people feel very differently, and they act and receive as individuals.

Weizenbaum: I see it differently. The vulnerability of the individual is considerable, as easily evidenced by images of complete surrender known from the Nazi era. Just remember the shouting and cheering and the ecstatic "Sieg Heil" cries of the Germans. People have indeed – especially in this century – enthusiastically and repeatedly surrendered until it was too late, leaving them standing horrified in front of mass graves.

The Credo of Artificial Intelligence

Pörksen: But metaphors from the world of the machine are omnipresent and have always existed. They even come from the age of steam engines and cogs and screws. We talk about the heart as a pump and the body operating like clockwork. We say of people that they are no longer tightly wound or that they have a loose screw. The century of electricity introduced notions of being low on energy or blowing a fuse.

Weizenbaum: In fact, the mechanistic view of the world and of humanity that has given us such sayings is about three hundred years old. In this respect, I would be very cautious about claiming that such metaphors have always existed. Just a few centuries ago, Dante's image of hell and the idea of a paradise that you get to – thanks to your own efforts or the goodness of God – were a reality for people. Nonetheless, I do agree that metaphors are ubiquitous. Any knowledge and any attempt to understand something is, I would argue, ultimately metaphorical in nature. Everything we know, we know in the form of analogies, comparisons, and metaphors. When we think we understand something, we always use the analogical mode. We construct similarities to grasp something foreign or unknown within the framework of something familiar and known.

Pörksen: Couldn't we then understand Marvin Minsky's metaphorical talk of the meat machine similarly undramatically as an attempt to understand the brain?

Weizenbaum: Of course, but if I say that the brain is nothing more than a meat machine, something changes, and that is crucial. You think that it is a complete, comprehensive, and completely sufficient description. My criticism is not at all about the particular analogy or the single metaphor used at any moment to describe the brain or the human being. In fact, this is quite an ordinary process, demonstrable in the history of science, at least since Newton. However, I protest against the assertion that the brain is nothing more than a meat machine, that man is nothing more than an information-processing system.

Pörksen: You protest against reductionism?

Weizenbaum: I am affronted and disgusted by the credo of AI research that every aspect of human life is calculable and able to be decoded. Of course, humans process information, and of course, these metaphors have enormous value as reductionist models for scientific work and knowledge. They are simply necessary, and they are useful for understanding certain aspects of human life. However, they are abstractions that never capture the whole and the entirety.

Pörksen: What other language or form of description do you have in mind?

Weizenbaum: If I actually had the authority to make such suggestions, I would be very tempted to delete textual formulations from every scientific text of the kind "nothing other than." What matters is that phenomena and objects, feelings and actions are always multiform and characterizable in very different ways. Their meaning only becomes apparent in context. To give a simple example, consider what it means to feel a hand on one's shoulder. An answer is only possible if I tell a story. Let's assume that this story is about a young man. He has had a fight with his girlfriend and now sits sadly and absentmindedly in the library, attempting to work. Suddenly, he feels a hand on his shoulder. Alternatively, let's assume that this young man is a criminal. He is wanted by the police and, sitting in the waiting room of a train station, he suddenly feels a hand on his shoulder. What do I mean by this? That nothing is ever described forever and for all time. Every description invokes a certain context.

From Golem to Robot

Pörksen: After our little dispute about necessary and dangerous metaphors and idioms, I would like to try to defend Marvin Minsky and Hans Moravec in a different way. After all, it is easy to recognize that the dream of an artificial human being is also rather old. According to my thesis, Moravec and Minsky simply use modern means to fulfill the aims of Rabbi Löw of Prague, who – if one believes the legend – created a golem. They follow the fantasies of Paracelsus, who strove to create the Homunculus. They stand in the tradition of automaton mania, which can be traced to the Age of Enlightenment.

Weizenbaum: Your question implicitly contains the reductionist formula "nothing other than." Ultimately, you are saying that the dreams of Moravec and Minsky are nothing other than the dream that has been dreamed throughout the entire history of mankind. However, that the Pygmalion idea is so old and can possibly be traced back to the beginnings of mankind is not proof of the harmlessness of Moravec and Minsky. Instead, it simply proves the enormous power of that dream. What it shows is that ideas – even false ideas – have tremendous influence. However, differing from the past, the present belief in modern natural sciences will, it is thought, soon allow us to really un-

derstand human beings, with high-performance computers apparently the right tools to finally make a reality the Pygmalion myth that people today advocate for with particular euphoria and arrogance.

Pörksen: Are the protagonists of AI really so arrogant and euphoric? Increasingly, the clearly less reductionist school of thought of connectionism is gaining ground. That school views intelligence as an emergent phenomenon: You try to build neuronal networks capable of learning, enabling intelligence to emerge. From this perspective, the brain is a gigantic neuronal network that works on the basis of numerous connections. Thus, inspired by the early days of cybernetics and trained on self-organization models, the possible intelligence of a machine acquires something that is also mysterious and indissolubly complex.

Weizenbaum: I do not believe in a new modesty of the connectionists. Marvin Minsky has also changed his mind and recognized that some approaches from the early days of AI were simply wrong, even if it was possible to achieve spectacular results with them. It had to be admitted that context plays a central role when it comes to understanding language, it had to be recognized that the human body is crucial for our kind of intelligence, and it eventually became apparent that there was little point in producing smaller or larger programs designed to allow the machine to do something seemingly intelligent. But this admission of error did not lead to a different attitude or even to a new humility. On the contrary, the admission of mistakes is sold as huge progress. Meanwhile, the secret hope of one day understanding the human being and building a neuronal network that corresponds to the brain – in order to decode it in a second step – has remained.

Pörksen: In your criticism of AI, it is noticeable that you actually consider life and the human being to be something fundamentally mysterious, and you wish that this mysteriousness of our existence would be recognized.

Weizenbaum: The world is full of mysteries, and the credo of the AI scene that everything is calculable denies the mystery of the living. It creates the illusion of complete transparency and suggests that all aspects of our existence can be unraveled. From this perspective, belief in miracles and mystery appears to be merely a special form of stupidity. I am deeply hurt by this assertion of total predictability.

Mystery and Secrets

Pörksen: Near the end of your book *The Power of Computers and the Powerlessness of Reason*, there is a scene that deals with this encounter with the miraculous and the mysterious: “When my children were still small, I sometimes stood together with my wife bent over the bed in which they slept. We talked to each other without speaking; it was the repetition of a scene as old as humanity itself. It is already as Ionesco once confided in his diary: One can express many things with words, but not the living truth.”

Weizenbaum: My view is indeed that there is something unspeakable, a living truth that cannot be put into words.

Pörksen: A mystic would speak of God in the same sense.

Weizenbaum: I would like to tell a little story. There was once an Episcopalian priest working at MIT. Curiously enough, his name was Scott Paradise. One day, years after we met and became friends, I had a little party. Scott Paradise was among the guests. My daughter Naomi was talking to him, and then she came up to me quite astonished. “Your father, Scott Paradise had said to her, is a particularly religious person. He is a mystic.”

Pörksen: Does the sharpness with which you argue against AI research and the computerization of everyday life, therefore, have a religious basis?

Weizenbaum: Well, it’s not my intention to defend a belief system of Judeo-Christian origin or an organized religion. I don’t think there’s an old man somewhere up in heaven, wrapped in bedclothes, watching what’s going on in the world, surrounded by blonde women with wings flying around him. But I have experienced miracles in my life. There is the experience of sorrow and shock, there is the sudden joy in the morning, and there is the experience of love between people. Well, a miracle is a miracle. You cannot describe it. You would have to be an artist to approach it.

Pörksen: God is not a person for you. What is he, then?

Weizenbaum: My answer is very simple: God is love. I translate his omnipotence and his grace and the other qualities we ascribe to him using the word *love*. With such an understanding, the idea of divine omnipresence also suddenly makes sense. This means to me that God was also in Auschwitz because there were also people there who tried to help out of love, even if that involved simply putting a hand on the shoulder of another to comfort them.

Pörksen: Are there any experiences – autobiographical experiences – that you would like to talk about?

Weizenbaum: When Jewish children had to leave high school in Berlin in the 1930s, I – I was twelve at the time – was sent to a Jewish boys' school. There, I heard Yiddish and met Eastern European Jews for the first time. They lived in the *Scheunenviertel*, and they were terribly poor. At that time, I really fell in love with a Jewish boy. He was literally dressed in rags and tatters, and my mother and I tried to help him. I would bring him a few things every now and then. The atmosphere of this encounter left a deep impression on me, and it can best be described using the word love.

Pörksen: The masterminds of the post-biological age would probably laugh at such respect for the unspeakable, for the mystery of love. For example, Max Moore, a Californian author and mastermind of the robot era, has described religion as "a force opposed to our posthuman society."

Weizenbaum: One certainly makes a fool of oneself in certain circles. One disseminates opium for the people or just nonsense. Numerous modern people are convinced that the natural sciences contrast with religious ideas in offering a solid foundation for knowledge. I am of a quite different opinion there. For me, natural science is merely the predominant world religion today, with novices (students), churches and cathedrals (universities), and priests and heretics. Even the cardinals (the Nobel Prize winners) and the very specific rituals to prove the extent of one's devotion and loyalty are not absent, and even the so-called laymen unreservedly believe, regardless of their everyday experience. For example, most people are convinced that the Earth revolves around the sun and not vice versa. But they cannot prove this assumption. They accept it, even though it contradicts their everyday experience, in which they see a motionless earth and a moving sun. Nonetheless, they trust natural science blindly and without limits. It is this quasi-religious fervor that supports the belief that the help of AI and genetics will enable natural science to one day make it possible to create an artificial, better human being. And with each new triumph of technology, this belief grows.

The Unavoidable Individuality of the Living

Pörksen: It is these triumphs of technology and the already emerging possibilities of human change that make a decisive answer to the basic question of philosophical anthropology necessary. Namely, what is man?

Weizenbaum: I propose to formulate this question somewhat differently: What is the essence of man? What is the fundamental difference between man and any machine that can be manufactured? And in what way does man differ from any other being that exists? Although it may sound slightly arrogant, in my opinion, the answer is extremely obvious and simple. I never tire of repeating that every man is the result of his personal and individual history. He has his own biography, he lives at a certain point in time, and he is inescapably embedded in the society that surrounds him. That is, every human being is a special case, and if we hypothetically consider the crazy idea that one day there could actually be an intelligent machine that moves like a human being and looks uncannily like a human being, still, that machine will never be a human being. Because its history is also different, it must be different. Therefore, it will always differ from a human being.

Pörksen: For the time being, we can expect a hybrid of organic and inorganic components. We are already implanting electronics into our bodies, using pacemakers and various prostheses, wearing hearing aids as a matter of course, and having artificial hips and heart valves implanted. Historian of science and feminist scholar Donna Haraway celebrated this nascent merging of man and machine in her famous "Manifesto for Cyborgs," urging us to enjoy it and recognize its emancipatory power. Her feminism-inspired argument, somewhat pointedly stated, is that merging man and machine and creating the so-called cyborg loses the foundations of the distinction between man and woman, the fundamental difference that is the basis of oppression. If we all finally become cyborgs, there is no basis for continuing to constitute woman as an other and as an object to be oppressed. Haraway writes, "Hence, cyborg politics stands on noise and on disuse, hailing the illegitimate fusion of animal and machine. Such connections render woman and man problematic, undermining the structure of desire, the imagined power that language and gender have produced, and thus subverting the structures and modes of reproduction of Western identity, nature and culture, mirror and eye, servant and master, body and mind."

Weizenbaum: This is well-written but extremely superficial thinking. I keep noticing that a high degree of naiveté characterizes the deep thinkers who deal with issues of this kind. What bothers me about Donna Haraway's ideas? For one thing, I don't think the difference between men and women is resolved at all. In most science fiction, the cyborg very much has a gender, and this fact should not be simply ignored when arguing in this way. Meanwhile, that short passage you quoted exemplifies a different kind of euphoria about progress: Hopes of machines becoming aids to emancipation shift a social problem – the eternal conflict between men and women – into the technological realm, where it is claimed that there exists a technological solution. I can certainly solve a mathematical equation, but human and social problems will never be solved definitively in this manner.

Pörksen: But don't we have to be grateful to machines in other respects? The writer Peter Glaser was once challenged by a television station to deliver a speech to humanity in ten sentences. His last sentence impressed me: "Be kind to the machines!" To me, this means that machines may not be peacemakers in the battle of the sexes, but they remain aids to knowledge, forcing us to engage in anthropological reflection and requiring that we be grateful and friendly to them.

Weizenbaum: I also like this sentence, but I understand it somewhat differently. If we do not despise our machines but treat them well, perhaps a different attitude toward our fellow human beings will emerge. That is not necessarily the case, but at least it is possible, and at least this sentence means that we should be friendly in the first place – regardless of whether we are dealing with a machine or another human being. This writer says, "Be kind to machines!" You could also say, "Be kind to the world!"