TRANSCRIPT OF INTERVIEW WITH WEIZENBAUM
JUNE 17,1985

Relevant excerpts

DW: If people didn't know you, fsatest way of identifying. Eg, I could sayt, author of Eliza..

JW: It'd be very nice if Eliza didn't getmentioned at all, I'm so sick of that thing. But, what the hell. I';m a professor of computer science at MIT. That's an outsanding fact. Noteveryone is a prof of comp science least of all at MIT. And I've been in the business for a long time. It turns out to be important as I try o understand how it is that I am the way I am, one of the things that's important is that I was boren in Germany. I think that's iportant in two quite differentways. One is that I think I kept a lot ofsort of European, forlack of a better term I'll say attidues. But more than that, myexperience, in particular my experience as a little jewsih boy in nazi germany-- we left germany in 1936-- has had a fairly profound impact on the I think and what I think about.

DW: Whzt sort of effect.

JW: Let me give you an example. I certainly wehn I first got her it wascertainly easy for me to identifyt with blackls-- althou the word blacks had not been invented yet, Negroes we used to call them. That leads to ways iof thinking which arebn't ashared by everone and much later when I came to unversity I was able to make analogies-- or perhaps I should say I was unable to not make analogies-- between the situation of the American univwith respect to its government and its policies as analagous with respect to the German university and its politics of the time. Let me be very plain about that: I don't think we've experience anything here in the United States like the Hitler time. I don't wantto permit that 9nference. But I think especially during the Veitnam war, and Iwould say we now have anotheroccasion, that the situation of intellectuals generally but particularly of academia is I hope in America to be vbery different from what iot was in their dark time. I think that a lot of what I've paid attention to in the last fifty years is ac onzsequence of that sort of experience.

DW: You seem to be fairly isolated in the scientific community, that is mostpeople don't take moral responsibilities.

JW: As I say, you ask me what imp facts I'd have to know about you to know about at all. I think you have to know that I'man immigrant, that I came from a country which was going though very very dark times at the time, and to a c ertain extent IUthink the answer to the question you've asked lies in that, that to some extent explains it. Of course it doesn'texplain all of it./ I'nm nmot sure that human conduct can be explained altogether and absolutely. Let me say it another way: If you didn't kow that then you've missed a lot of what I'm all about.

DW: Directly to US

JW: Yes. By the way, let me comment on what you call my isolation. There's a hint there that there's something unique and that isn't so.

DW:.. unusual

JW: There's a very large segemtn of the scientific community and

the acadmic community trhat doesn't think so vewry differently from the way I do. Some of these people are comp sciewntists like ay Stanford Univ. So, it's not unique. Now, with respect with, forexample, to so-called strat def initi-- Star Wars-- its trikes me from my personal observation that there are very ver few scientiosts, say at MIT, who have any faith in that development as a technical develop ent whatever. But the very people who will snicker and laugh up their sleeve at the mention of STar Wars seem to have no difficulty at all in going to the Sar Wars trough and findingtheir financial support there. I find that pretty odd. And thereason it comes up in the cohtext is that on the one hand I would count the many people who think that Star Wars is at best a great publicity gaga and at worst an enormous waste of rsources and af urther stimulation of the arms race, these people who believe that-- and IU think that's the great majority of scientists today in the United States -- basically are standaing on my side of the fence in that belief. But then when I see that yest they believe and they say so and on the other hand they're also willing top work oin it, then I wonder which side of thefence they are on.

DW: How do ytou explain taht?

JW: Well, I think that that's an importantquestion. It's not particularly imp how I explailn it, but this phenomenon ought to be edxiscussed and ought to be questioned. It seems so contradictory. Lety me say this, yes, this is what I think I wantto say., that the probably most widespread conviction people have about themselves today in the world, say in the developed countries, and I would say at thesame the mostwidespread and virulent psychological disorder in our world, is the individual's belief in his own powerlfessbes.s EVeryone beieves there's nothing I can do. And if you look at that phenomenon from a slightly diff angle than just front on I think you can see that a translation ofg that convictyion is "Nothing I do makes any diff." Once you are there, then to believe and Iwork on things that are intended to do something that in fact can';t be done, it doesn't make any difference becauyse nothing I do makes any diff. Consequently, it's a kind of a neutral act on a very sort of funny calculus, it comes out as sort of a neutral act, and at the same time it's interesting the sub-problems are a lot of fun. They're very hard problems, much harder than the the Sun NYT cross word puzzle, and it's a way to make a living. The thing that I'vee justcome to, I haven't come to exactly this point, one of the things this tells me is that this kind of rationalizing can be done without cynicism. One thinks well they're just cynical: they know ti can't be done, they're robbing the public treasury, or they'refooling somebody perhaps themselves, nad so on. Nio, I think they explanation I've just come up with can be acceptedwithoutthe hypothesis of cynicism. They feel powerless so nothing I do makes any diff.

DW: Star Wars partic dangerous b/c it seems nmt toi be dangerous is successfl.

JW: That's right. There's some truthin what you say. This illusion, ordelusion, can be supported in that this thing is after all a defensive project. And if I'm totally wrong and the thing can be made to work,m then what the hell it's not going to

and just keep people from throwing things at me. How can that be bad? It has that. Of course there's an anyswer to that: You have to getfrom here to there. And in getting from here to there the oppoennts, whom we think of as the Russians, aregoing to respond not to our having installed the thing but to ourworking on it atall. Conseuqently, and there's nothing new about this, a thousand peoplehave said this, it represents another windup of the arms race. That's the thing we need least in the world today.

DW: One of the things that's most impressive in what you've written is you take much more seriously that sci occus in a social context.

JW: Absoutely.

DW: Can I get you to say that?

JW: Well, look, whatwer've just talked about, this attidye, whether it's applied to Star Wars or to artificial intell in machine vision, which is in my view obviously gong to be used to make it possible for smart bombs, cruise missiles, to see where they're going, when you apply it to that then this lends plausibility to theidea of the nmeutrality of science and technology. The one thing we hear about computers more than almost anything else, and this is a direct quote out of the public mouth, so to speak, the comp is merely a tool /. The merely is always there. What theintention is of thaty sentence, what's beingsaid there, is thatthecomputer is neutral and whether it fuynctions forthe good of mankind or not dpeneds on how it's used and by whom, it's not inherent in the thing which is merely a tool. It follows logically that nmy working on this computer, on this tool, is morally neutral. It is not a despicable thing to do, nor a particularly glorious thing to do because after all what'sd with it doesn';tdepend on me. What this ignores is thefact. I'll just say very authoritatively it's a fact, it's hard to deny it, that work on high technology, as on anything else, takes plate in a concrete nistorical, social political contex.t. And if you nowas kwhat role does high technology, in particular comp[techn, play in the concrete context in which we hapopen to live, where we takeas evidence what these things have done in the recent past, in these sameconcrete circumstances, then it becomes very clear that with respect to the comp that it has been used mainly as a militray instrument in many diff ways, ofcourse nowadays it's being installed in weapons directly, and then when we look at many other technical advances we've made in the past half century or for that matter since the turn of the century and we see what fraction of these developments have been incorporated into military things, in factmainly into militrayt things not just by the way then we can see that in the concrete social and historical circumstanes in which we live the comp is predictably going to be involved withdevices that kill people. It isbn't true that he person who works on itcan't know what is going to be done with it. We know very well what's going to bedone with it.

tool

DW: Stopping point is that it iused by military. Not objectinable to many.

JW: I might be saying what I've just said to people who are

...that the Soviet Union and for all I know Red China, god knows who else, Libya, Nicaragua, and Grenada, are outto g us and the only reasonable posture is one of great strength, being armed to the teeth and all that sort of thing. When peo who believe that workin a n ammunition factory, orwork in what the Pope recently called laboratories of death-- he was talking abouty research laboratories all over the world, notall of them of course butsome ofthem-- when people like that work on these things Idon'tfaultthem. Ity's a consequence of what they belie about the state of the world. I would wanttoargue with them first of all with their perception of the restof the world as being ready to eat us up, theparanoia if you like. And even if can'tsahke them outof that, then I'd like to argue with them about howone best responds to such things. But ythat's different. But people who believe themselves to be peacelovingand wouldn't hurt a fly and all that sort of thing, t be working on these things while denying the reality of what they're workingon to themsevles, with those people I have a definite quarrel. In any cse, I cwertainly disagree with the position that the comp is merely a tool and therefore the person who works on thec omp has no responsivilityin principle on how it is use.d

DW: Is the idea that toolsare not merely tools? A tool is soething that enables you to make a world in a particJlar way.

JW: Actually in my book, Comp Pwr, the firstchapter is on tools. No tool is merely a tool. Each tool is a tool in a context, and so on, enables certain things and suggest certain things. I can imagine someone who's never seen a streasm or flowing water at all comingacross a stream in a jungle for the first time in his life. And by theside of the stream hesees a canope paddle./ No canoe. It's not hard for me to believe that on the basis of having seen that poaddle and the stream he would invent the canoe. A tool is suggestive, a tool teaches its own use. Inm any case, the real point I wantto make has something to do with the responsibility ofeveryone, but now particularly we're talking about the scientist and the technology, for the end use of what hedoes and the position that I can't know what the end use of what I'm about to make is, that position is nottenable in my view.

DW: Future and business apl;icationsof AI:

JW: If one looks at art int research in the Un States in the poast 25 years or so, there are two thins that are very important to observe. OPner is that it has been funded mainly by the military. And another is that the reserah. which by the way is carried out in oinly a very few places-- I'm sure there are a hundred colleges in the Un St which have a course in their syllabu "Art Int" and may even have what theycall an art in laboratory, but in fact there's a harndful of such laboratories-- and I think if one were to look at the research going on in these research laboratories, that one could see a trend that say 20 yrs ago the research was much more theory oriented as opposed to performance

oriented, much more in trying to understandthings than in tryi
to get the machines to do things. If In fact there were program
to try to get machines to do things, these programs were
justified to some extentby the notion that if we can get a
machine to do this then we will come to understand it, so that
understanding it was the ultimatgoal. And Ithink that changed
Today performance is the ultimategoal. This is a logical
consequence of the source of funding. The DOD wants gadgets tha
do certaint things. They really don't care very much if we com
closer to understanding the human mind or not. [229] I think th
the mimlitasry funding of art int research has had an enormous
amoutn to do with its development. Another part of your
question...
DW: AI res seems to be morally neutral.
JKW: That's right. I don/'t know to whom it seems to be morall
neutral. Theexample I'd wantto give is coputervision. Why in
fact under what circumstnaces is the Dept of Def today,
particularly under the strategic computing initiative, is it
funding comp visiion? Well, we're tlaking about an autonomous
land vehicle-- you know the strat computing initiative. There
three wqeapons systems named there. At least the autonomous la
vbehicle requires vision. And of course cruise misisles and
pershing missiles require vision and qit's hard for me to und
somebody working in comp vision today in the concrete
circumsntances that are so easy to describe in this connection
continuing to believe that this is pure science, that it's valu
free, neutral, so on. It's very hard for me to see how anyonec
maintain that belief in view of the concrete realities we face
all the time. Similarly with regard to speech recognition. If
you look at the goals of the strat comp init, in particular the
atempts to develop a pilot's ass't, and it says right there in
the specifications a pilot's ass't who can be commanded in
natural voice, well that's what we need speech recog for. Ever
since speeh recogbegan to be funded by the DOD, the
justificatkons thbat were given for it have always been militar
Actually, I want to come back to something that just occured to
me something you asked earlier. You know, there may be people,
you suggested and I quite agreed, who don't think that working
for the mil is necessarily immoral or bad in any sense and I
suggested I miosht have quarrels with them on anentirely diff
level./ But I think Iwantto add something here, to theeffect
thatthere's a difference betweeworking on gadgets that kill one
poerson or a verysmall number of persons all at one time-- like
what in WWII was called a blockbuster, would destroy a whole
building in onesweoop so to sepak-- andworking on things whose
single use comes veryclose to being genocidal. It iosn't just
mil or not mil. To be working on a wapon that threatens a
million people all at one time, obviously almos all of them in
somesense innocent, that oversteps a boundary. Even people who
believe as a prominent politician ssaid not long ago that Russi
is the fountain of all eveil, the evil emprie, even for those
people Ipersonally think that working on nuclear weapons or on
their delivery is per se immoral. The way I see it-- I wouldn'
mind seeing this in print-- a hydrogen bomb is efsfectively an
instant Auschwitz. It'

M.L uses AI

s an auschwitz without a Eichmann, and without railroads and receiving stateions and Dr. MKengeles and without a bureaucracy, but it's an instant Auschwitz, that's what it is. I can't imagine any justifiaccation whatever for delibertately creating an Auschwitz. There is no moral justification for that, a place where you bring in people and burn them as fast as you can until you've kille d six million. There's no possible justification for that. But if there's no possible justification for that then there's no possible justification for a hydrogen bomb either. It follosw from that,.in my view, that if it's true that there's no possible justification for bulding another hydrogen bomb, then there's no justification for working on gadgets the purpose of which is to help in the development of the hyudrogen bomb. And as I see it the very very high speed coputers that are now being worked on under the strat defense initiative have in fact that purpose. And I don't see how anyone can evade it, that's just so plain to me.

DW: One way to evade it is to claim deterrence. Current state of AI (332).

JW:Suppose that there are some people, somehwere in the middle east say, 2000 years ago or so, and they have made it a goal of their soc to reach the moon. Now these simple-minded people see that the moon is way up there and we're way donw hewre, so they concentrate on tower buildings, figuring that they could build a very very very high tower and they'll get to the moon. It turns out of course they build the highest tower they can possibly bul and as they try to put the nexty stone on top of what theyarleady have the thing collapsed. There's a limit to the height of the tower they can buld witht he technology they have. And when the reach this limit and sit down and think and somebody comes up with a way of building it higher than last time. From their pt of vie this new way of building the tower has to be considered progress with respect to rreaching the moon. Inm the meanwhile, or even a 1000 yrs earlier, there are some Chinese over in China and they're polaying with firecrackers. Now, from our vantage point today we can say that the tower-builders were on the wrong track and that progress toward building a higher tower wasn't progress towards reaching the moon, whereas whether they knew it or not, the Chinese were on the right track. What it takes to get to the moon are firecracks. With that little homily mind, m view of art in is that to the extent that it is to be taken seriously, we don't yet know if we're in the tower-bulding business or the firecracker business. Fundamentally today we have three approaches, each of which can be identified with a person without by the way making that person responsible but ju the identification is possible. one way is that fundamentally i will turn out that everything will be capable of being understo and expressed in some sort of mathematical formalism which we simply don't know yet, we haven't managed to write down yet. That's identified with John McCarthy. Another position is that one wayto characterize it, a remark I think of Herb Simon, is that nothing interesting goes on in the head that takes less a few milliseconds. Microsecond events in tthe human simply aren

identifiable with Minsky although Hofstadter seems [illegible]
the most articulae spokesman for it, is that nothing interseting goes on in the human head that takes a slong as millisecond. That is, all the interesting stuff takes much less time. Which is basically that what ultimately determines human thought is microevents, or chemical events, or electrical events, but in anyc ase microevents out of which emerges what we call cognition. Those are the principle three positiosn today. Now, I think that something has to be added to thius. All of this is an interpretation ofart in as a mode of thinking about human thinking. [408].
continue.d
There's of course the whole other activity whcic today is the principle activity of art in which is getting machines to dothings which ar very very clever quyite indepenet of whether they do them the way humans do them or not. It's with respect to the first package, with the 3 labels I've put on it, that we don't know yet if we're building towers or building firecrackers. The rest of it, the performacne, all of the stuff that's rapped up today ounder the heading of expert systems, that I think is very very clever applications programming which if it is doine in a famous art in laboratory will be called art intell and if it's done somehwere else won't be called arti intell and may not be called anything at all. Let me say-- and I wouldn't mind seeing this in prit either-- that for example if the computing systems which today atake off and fly and land most wide-bodied airplanes like 747s, if those computing systems were the prodcuts of sya the MIT art intell laboratory, we'd never hear the end of it. It would be considered a great riumph of art intell. AS a matter of fact, these things were created by anonymous technicians, obviously veryvery cleever and very competent in their field and so on, but without any claims whatever. They';re just anonymous. I don't know if these things were created in Eng or in France or at Boeing in the Un St or where. And so there is sopmething about performance mode art intl which is very much in the eye of the beholder. And because every eye is different than mine, there isn't anythingh I can really say with any claim to authroity.
As far as I know, and here I have to confess I don;t keep up, the expert systems I know about, are paper thin. They're very much likefacades on a Hollywood movie lot. They work. They do what they're supposed to do. Just. We've got a hell of a long way to go.

DW: One's I've seen reviewed ...

JW: They're not deep. They're paper thin. They're perhaps very good applications systems. They're domain specific, which is their strength. Let me add that here. IOne of the great diseases which afflicted the computer world until wuite recently-- and I don't think anyone noticed thatthe patient got well .... -- one of the great diseases the comp woirled from the

have attempted to write the most general [illegible]
nagivagation system which one could possibley write which would be good for all harbors in the Un States or the world for that matter. Today, the idea is well in which harbor is this supposed to happen? What are the limitatiosn on the tugs and ships coming in. The whole thing would be domain sopecific. It would be ablew to do what it was desiganedto do very well, and not a damn thing else. I think that'sreal progress. [506] I call this generality business, that's a disease. And I think we've gotten ovewr that, and I mean the field generally, I'm not now talkingabout art int particularly. Just generally. And expert systems are from that pt of view the first sign of good health. But they have to be seen,. it seems to me,. as getting over a very bad diseasse, the disease of generality, not as triumphs in their own right. That's what we should have been doniq all the time, and some people were.

DW: Human mind general tool?

JW: Even then, yes yes, it's tru the human mind is vastly general, but it's amazing by the way how specific it becomes as you grow up. It turns outthat most of us can do some very very few things moderately well and nothing else very welkl and there are a few things we stumble around on and lots and lots of things we can't do at all. Buteven there one has to be fareful. Initially in art in, it's aboslutely laughable seen from today's perspective or the persptive I think people should have had the whole time., toi take an IB< 704 computer and say now I'm going to simulate the human mind. It will take af ew yeaers but this is what I'm going to do. No, Ithink art intell too has learned. Some people concentrate on vision. Other people concentrate on speech. and so on. That there mayt very well be a unification someday-- I have no idea, nobody knows, where this unif is going to come from and where it's going to go-- yes that very welml might be. But you don't observe that the human mind is a vastly general instrumenmt and therefore the tool that you use to come to und th the mind has to be of equal generality. That's nmot how you begin. Certainly when it comes to in soe sense quite ordinary computational tasks, it's smart to consider the
[SIDE II]
Iyou have to write a differential eqwualtion solver...you buld a suitable diff equ solver, you don't build the mostgeneral one you can.

DW: Specificity healthy b/ forbids mind metaphor?

JW: No, I dfon't see it that way. I see it as helpful in that if ytoiu operate int hat way, designing to the problem and no more, that you put yourself in position of being able to do things,

wherass this attmpet at vast generality is ultimately hopeless.

DW: How old J:W 62

DW: Current work.

JW: Well, I;'m trying to write a obook, Don';t ask me for a summary?

DW: Topic?

JW: of approximately the same breadth,. ;let's say, as ZCOmp PWR. It's not on data bases.

DW: Designed first comp banking system. Bank of America.

JW: Not first. I wason the team that designed it.

DW: Late fifties would be accurate?

JW: Yes.

DW: Heidegger?

JW: No.

4 children. Youngest 21.

DW: Are you gadget oriented?

JW: To some extenet. If someone were to inspect the picture very carefully, they would notice I have a couple of mont blanc pens. Here's a ballpoint pen that's very much more expensive thah the 15 cent throway you can buy which doesn't write much better at all. I have rolex watch on. IOt's ridiculousto have a spring wound watch today./ it ca't possibly keep time as good time as a cheap quartz watch. So obviously that has something to do with some twist in my mind.

DW: Non technol.

JW: No they.re both technological.. This is a wonderful precision machine, much more intricate than a quartz watch.

DW: SAo what mistake am I making in thinikng that somebody who refers to his fountain pen and psirn wound watch as gadgets?

JW: There's a paradox there. You're sitting next tio a computer cinsiole anbd I can certainly write on that thing, but I do carry a countain p[en. There's something paradoxical about having a very experinsve mechanical watch when a quartz watch is more accurate. These are both quite old byt the wya. (Watch is 25 yrs old). If yoiJ look behyind me, you'll find boxes that say Leica on them. They're for a range-finder camera. Which again, it just occurs to me, is another one of these things. People

have reflex cameras which are in many ways much beter and easier to use than range finder cameras. How come I've got a very expensive range-finder camera. Yes, obiviously I'm invovled in these things, not a fanatic, but to some extent gadget oriented.

DW: Not eleectronic. Crafted.

JW: Yes, these are all vewry precision things , much too expensive for what they do.