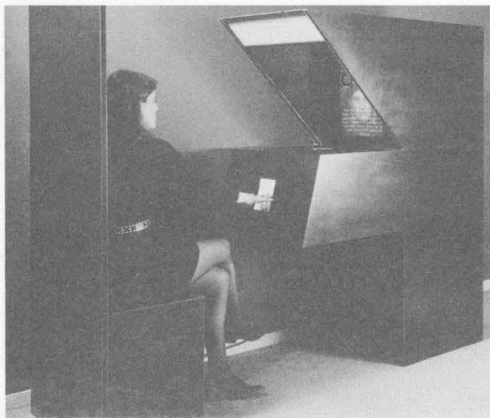


THE AGE MACHINE *Nancy Burson and David Kramlich*

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Nancy Burson and David Kramlich,
The Age Machine, 1990,
interactive computer station.

Senior Curator France Morin: *The Age Machine* is an interactive, computerized installation that shows the viewer what he or she may look like 25 years from now. When did you first begin thinking about a project like this?

Nancy Burson: I can start answering that by telling you about an exhibition I saw at The Museum of Modern Art in 1968. It was called *The Machine as Seen at the End of the Mechanical Age*, and it was extremely influential for me. You could experience the art directly by actually interacting with it. I remember an early Nam June Paik work and a work by Ed Keinholtz called the *Friendly Grey Computer*, in which you asked the computer a question and it answered you, yes or no. It wasn't really a computer; it reminded me more of the "Magic 8 Ball" I had as a kid; you shook it up and it would answer your questions with something like "Outlook: unlikely."

But I could go back even earlier than that. I remember these carnivals that I went to all through grade school when I was growing up in the Midwest. I loved how you could participate in all these different games and rides and activities. And of course, in those days we all spent a lot of time in photo booths in dime stores too. So what I first started thinking about was a simple machine where you could

push a few buttons and automatically see yourself older.

FM: But you had to wait a long time for the technology to catch up with your idea, isn't that right?

NB: Yes. When I first had this idea, I went to an organization called EAT for help. EAT stands for *Experiments in Art and Technology*, and it was founded by the artist Robert Rauschenberg, who was interested in bringing together artists and scientists. Through EAT, I met a computer graphics expert in what was then a very new field, and I shared my ideas with him. He was the one who told me that the technology, at that time, wasn't capable of doing what I wanted.

But in 1976, I began a collaboration with MIT to produce a program that would simulate the aging process. I don't think the people at MIT really thought it would be possible to "age" a face. But they were interested in my project because they'd just found a way to hook up a computer with a camera, through a piece of equipment called a digitizer, and they were eager to use this new camera of theirs for something. Anyway, that turned out to be one of the first times that a computer interacted with a live image of a face, and the crude examples of aging that we produced were a major feat of early image-processing. I was issued a patent in 1981. Since 1982, I have been collaborating with David Kramlich in further implementing and developing the technology.

FM: So how does *The Age Machine* actually work now?

NB: Basically, the face of the viewer is scanned by video into the computer; that registers the placement of the features: the eyes, nose, mouth, and chin. The computer asks the sex, present age, and what age the resulting image should depict. It can then adjust one of a number of "templates" that corresponds to the specific facial structure of the viewer. Because the wrinkling of skin and the softening of muscle show on people in a predictable way, it was possible to create a data base that stores these parameters of the effects of aging. And over the years, David Kramlich has managed to increase the speed of the imaged aging process

from 30 minutes to 30 seconds, and developed the interface process for personal interaction.

FM: And you have actually used this technology to assist the FBI in locating criminals as well as missing children?

NB: That's right. Our first FBI commission was the Etan Patz case in 1983. Etan Patz was the little boy from Soho who disappeared on his way to the school bus stop. But it wasn't till 1987 that the FBI licensed our software.

For me, this is one of the most amazing parts of this whole project. Suddenly, this was no longer only art about art; it was art that could be useful, that had the power to change people's lives in a profound way. Three or four of the missing kids that we produced aged images of were found in the first year that their images were aired on national television. There are parents who are very grateful to us.

Of course, working with parents of missing kids is tricky. It's always difficult to be someone's last hope. It also leads to a lot of judgment calls on our part. Do we, for instance, want to age children known to be dead because their parents want to see what they would look like had they lived? It's a tough question. But then there are those times that we've been successful and a missing child is found, and I feel my life has taken on new meaning. The parent puts the found child on the phone to talk to me and I'm not even sure what to say because at one point this child was just a photo, an image we produced on a computer, and now he or she has come to life.

FM: How precisely do you "age" missing children?

NB: We interpolate between faces. In other words, we work with a photo of the child before he or she was missing and then with a photo of the sibling or parent who most resembles the child. Then we interpolate between the two images. We can update the growth of the child's facial structure by adding a small percentage of the family member that most resembles the child. In the past year, we donated our software to The National Center for Missing and Exploited Children and they are using our technique as well.

FM: Is that the same process you used to produce aged images of the Royal Family for a feature article in *People* magazine in 1982?

NB: No, because the process for aging people over 18 and under 18 is completely different. The facial structure of children develops at an enormous rate until they hit 18. By age 18, the facial structure is fully developed. So a child using this *Age Machine*, for example, would have lines and wrinkles on a facial structure that hasn't finished the normal growth process. It would look really funny. We would never want to make an *Age Machine* for kids, although I'm sure we could. But who would want to show a kid how he or she will look as an adult? I mean, what happens to the first child or the first parent who doesn't like what they see?

FM: *The Age Machine* assumes that we will all age identically within the boundaries of its electronic code. It seems to me that this kind of technology can only function within a set of pre-determined norms. It cannot take into account the subtle variations among people; it does not accommodate the idea of "difference."

NB: Humans alone are adaptable while machines are doomed to obsolescence. This is the irony of the machine. Machines cannot really be that specific. So while it's true we all age the same way, in the same areas, the fact is that we all age differently as well. So *The Age Machine* doesn't give you a *promise* of what you'll look like in 25 years, just a *prediction*.

FM: With photography, we often speak of "stopping time," or "stopping death." Isn't it an uncomfortable experience to see yourself old, especially in a society that is so youth-oriented?

NB: It's important for me to say that *The Age Machine* is a voluntary experience. From the very beginning, this was always, for me, a piece about how we perceive ourselves. It was never meant to be a horrifying experience—confrontational in a certain way, yes, but not frightening. So what I've found as intriguing as the end result is discovering the divisions between those who don't mind accumulating

additional wrinkles and those who do. When *The Age Machine* was shown at MIT, it was far more popular with those in their '20s than those in their late '30s and '40s who already have a sense of what happens to the facial structure over time.

For my part, I find it easier to see myself 25 years older than to face myself in the mirror every morning and see the changes, the new lines. I think that is more difficult than looking across time. Ironically, I feel this project not only fosters acceptance of one's own aging, but has the ancillary effect of sensitizing one to the aging of others.

FM: As comfortable as we may become with growing old in our society, we still seem to feel it's a more negative experience for women.

NB: I think women don't age as well as men.

FM: Do you think that's social?

NB: Not necessarily. Women's skin is much softer. Men have a structure, their beards, which literally holds up their faces. And men have the option of covering up a lot of that aging process by adding a beard or mustache or both. On the other hand, men lose their hair much more than women. But that doesn't show up on *The Age Machine*, at least not yet.

FM: I was wondering about the historical precedent for these electronically generated images, these composite pictures. Your work in this area has been linked by some critics to that of Moholy-Nagy, Francis Galton, and even William Wegman, who has worked on family composites.

NB: In the last century, Francis Galton made composites by superimposing images. But I didn't know about Galton until after I had been making composites for awhile.

Galton was Darwin's cousin, and he was interested in the classification of types. So by combining faces, he hoped to obtain a photo of, for instance, the "average" or "typical" criminal. Galton saw composites as a tool for ethnological research on racial differences, but what he ended up doing was founding Eugenics. Hitler was one of Galton's biggest fans.

One of the first composites I did was

a piece called "The Assassin" in which I combined images of Lee Harvey Oswald, Sirhan Sirhan, and James Earl Ray in order to contest the whole notion of Eugenics, that we can tell a killer by looking at his or her face. This was my quintessential banality-of-evil piece, a very anti-Galton project, so to speak, even though I had never heard of him.

I had seen William Wegman's composites some years back, when I was at MIT, and I thought they were interesting.

But, you know, the idea of superimposing images is not really what my work is about, that's not what's new. It's the fact that you can take faces and stretch them to fit another face. That is what is unique in the process, that is what is powerful in it.

One thing that I would like to do is put the aging and compositing processes together in people's minds in a certain way, to express and explore my Compositology theory.

FM: Which is?

NB: That we are all composites.

Obviously, we are each composites of our parents. But even on a molecular level, we are also composites because, as a physicist has put it, every atom that is now in our bodies was once inside a star. Then, on an individual level, each of us are composites of our emotions—fearful and courageous, intelligent and stupid, beautiful and ugly, all at the same time. And then as we get older, we become composites of our previous decades and our present. So that, essentially, for me, all my work is really about unification more than anything else, unification and compromise, because these are the universal things that tie us together as human beings.