University of Illinois Student Life and Culture Archives
Interviewee: David Eisenman (Part 6)
Interviewer: Katie Nichols
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Katie Nichols: Okay. This is Katie Nichols, and I'm here with David Eisenman. And it is March 10. We are meeting in the conference room at the Archives Research Center, and it is 2:30pm. This is our, I believe, sixth session in our ongoing interview series. All right.

David Eisenman: All right. We've been talking about late 1960s and what was going on on campus. And my general thrust here is to remind us it wasn't just all anti-Vietnam stuff that was going on. We talked last time about the fact that the Graduate College under Dan Alpert made computer time available to people in the social sciences and humanities, which was a bit unusual compared to other universities, and that it had a number of interesting consequences. We looked, or we talked about some of the uses made by people in the English department doing concordances, counts of word frequencies in various texts to try to use the pattern which was already known, would sometimes identify the author of a piece or tell whether it had been edited by somebody else. Things of that sort. Today, I thought it might be worth just talking about the University of Illinois as a hotbed of modern music, experimental music, and in particular in the era we're talking about, computer music. And so I think I've already mentioned Jerry Hiller in passing, but it's worth spending a little more time on him, and I'm fresh and ready to do it, because I'm just back from a 50th celebration in Chicago of the of the enormous event *HPSCHD*, which took place on May 16, 1969 in the Assembly Hall, which has some new name now that we're selling all of our buildings to people in order to get their names on them. But to me, it is the Assembly Hall and will always be the Assembly Hall. Had been freshly built when I showed up in Champaign in '65. It looks like a flying saucer landed on a giant field, slightly south of the main campus at the University of Illinois.

In any case, at *HPSCHD*, I silk screened posters all night. People came in at 8pm and the music was already playing. They left at midnight, and the music was still playing. This was an event that that was not meant to have a beginning and an end, but rather to be an experience. And you were not meant to sit in a seat and stare. You were invited to wander around and appreciate the total experience, which was visual as well as aural, by being at very different places within the Assembly Hall. You were meant to walk around. There were seven harpsichords playing on the main floor up on little diocese. I was over to one side silk screening. This was a piece by Jerry Hiller and John Cage, although it's often thought of as merely a John Cage piece. But that brings us to Hiller and the whole concept of computer music. And the trouble is, like I have been so busy talking about this era lately that I can't remember how much of this may be on a previous tape but doesn't hurt to repeat the story. Jerry Hiller was a chemist, but he was married to a

singer. He had been very serious about music himself in his youth, and he was very good at music, quite an accomplished fellow. And as he continued his chemical career, he was modeling long chain molecules, and there are rules about how atoms will stick to each other to make a molecule. Once certain atoms have stuck, certain other ones aren't going to fit, and only certain ones can fit to cause the molecule to get bigger. Jerry began to realize that this computer programs he was writing to, to mirror what nature does in fitting atoms together—and atoms really do have shapes and tendencies to glue to each other as it were—he realized that the programs he was writing could be, would be similar to a program that would tell how to add notes to a composition if you were trying to follow the rules of classical counterpoint. So basically, he reduced classical counterpoint to a formula, and the question was, well, a composer would have some idea of what the next note should be. Clearly, he wouldn't write down a note that violated the rules, but he would have some sort of intuition as to what would work best next. Jerry wanted to know what would happen if random chance determined what happened next. So he would take a random number generator, which computers had at the time. They're never, by the way, perfectly random, but never mind. That's a detail. In any case, it would toss up numbers. And if the number was allowed by the rules of counterpoint, that would, that would be the next note. And if it wasn't allowed, well, it would just take the next number.

So the question was, what would you get if you wrote classical counterpoint, but the note choices, besides following the rule, were not guided by any human intuition at all? And I think the answer is idiot Bach. You hear it. It's immediately, you recognize it as classical counterpoint, but it doesn't go anywhere. It plays, it's pleasant enough, but there's no theme that gets picked up, no development that you would recognize. So he wrote something called *Illiac Suite*, which was meant to be played by a string quartet, and people agreed to play it, and then—and he went and recorded them in practice sessions. And then, when there was a concert, they stood up and made a statement on behalf of all proper musicians, that this wasn't proper music. Music was written by people, not computers, and they wouldn't lower themselves to playing it. So Jerry walked up on the stage with a tape recorder, put it on a chair and said, 'Well, the fact is this audience need not fail to understand what this experiment would produce, because here it is.' And he pushed a button and he played a recording.

But now Jerry undoubtedly had met John Cage on some of Cage's trips to this campus. He came here frequently. I just gave away four days ago, a t-shirt that I had made in 2001 that had a date in 1953 for what I think was John Cage's first trip to the University of Illinois, and I think on that trip, he played the *Williams Mix*. And Cage always loved thinking about what he could do with devices. So for example, the piano, as any child knows, sounds different if you put things on the strings. What if you put a dime in there and you hit the key, you know, it buzzes. Cage took this concept seriously in the '40s and produced music for the prepared piano. And you can still find scores for this that are beautifully drawn. You actually see the notes of a piano and Cage has indicated just what sort of thing to put on each string. It might be a piece of paper wound

through, say, the three strings of a lower note, or it might be a paper clip put on a higher string, or a thicker binder or a piece of rubber wrapped around the string to dampen it. His original motive in producing the prepared piano was a very practical one. He was the only musician available to accompany Merce Cunningham's dance crew at a particular event or a series of events. But at the moment, at that time, he was very deeply into percussion orchestras, and like the man who is his friend, okay, now there was Virgil Partch, who was the cartoonist—

KN: Harry.

DE: Harry Partch. Harry Partch was his brother, the inventor of remarkable instruments. And I digress. I didn't hear it myself, but people said that there were concerts at the University of Illinois, I think, in the auditorium on the on the quad, because the Krannert had not been built yet. Maybe Smith Music Hall. But in any case, Harry Partch had an instrument called the Marimba Eroica. And apparently he had actual huge pieces of wood that you whacked, and you got extremely low notes. Low notes, so low, in some cases, that they were below the range of human hearing, which is thought to be about 20 hertz to 20,000 hertz. We used to call them cycles per second, but now they call them hertz. Shows how old I am. Anyway, people would see Partch whack the lowest note of the Marimba Eroica. And they would just feel the vibration in the room of this extremely low toned, huge log, basically. Well anyway, Harry Partch realized that you could use bowls and hub caps and found objects as part of a percussion set up, and you could, you could produce some really remarkable pieces. I have recordings of Harry Partch. I never heard a Harry Partch piece live, but it's lovely stuff. And Cage undoubtedly was thrilled by that. Had his own percussion orchestra, but he thought, well, I could simulate a percussion orchestra by preparing my piano, and then I would have something to play while Merce and his dancers are dancing. So, and by the way, the sonatas for prepared piano are delightful. Anybody who thinks John Cage's music is not enjoyable, except as concept, really ought to listen to the early preludes and fugues, or whatever he calls them, pieces for prepared piano.

Anyway, Jerry must have known Cage and Cage must have found out sometime in the—well, clearly, Jerry wrote a book called *Experimental Music*. But I think that Cage and Hiller were already ready to do something together before the book came out. They knew about each other. The world of experimental and, and unusual music was a small one. Back to '53. Cage, you know, I remember '53. I was 10 years old, and tape recorders were very new, very expensive and exciting. We hadn't had a way that we could make recordings of music easily. There had been—you could buy a home recorder that actually put a cutting needle onto a blank vinyl disc and cut you an LP. They were not very satisfactory. But in those days, somebody who wanted to do a demo disc would go to a big city where somebody had a better machine and actually sit and play, and you couldn't make a mistake, because that turntable was turning and that needle was cutting into the vinyl. You had to go for a take, and if it was bad, you had to do the whole thing over

again, throw the disc away. But with tape, you could actually snip the tape, if there was a bad part, and replay just that part and glue it back together.

And Glenn Gould became extremely famous for arguing that no one should ever issue a recording that was less than perfect. And if you had to splice together 53 different pieces of tape in order to get the best beginning, the best middle, and the best ending of a Beethoven sonata, why wouldn't you. By the way, I heard Glenn Gould play live in Buffalo, and it must have been 1960 right at the end of his concertizing. He then said, 'Why would I schedule in advance a night somewhere, having no idea how I will feel on that night, how the audience will feel? To hell with it. I'm going to produce beautiful recordings in a nice studio, and when I'm satisfied with them, then they go out to you.' And he also said, 'I'm not going to play anything the way anybody else does. What's the point of that? We might as well explore what's in that music.' So he was big on interpretation. Gould, of course, became famous for his Bach playing, which really excited people. They found things in Bach they didn't know were there.

But anyway, it was a whole period in which the tape recorder, of all things, changed how musicians thought about the world, and for that matter, so did the LP record. Have I mentioned that I once had tea and cookies at 11 in the morning with the inventor of the LP record? And that was Peter Goldmark, who was running something called Goldmark Communications in 1975 or so, when we had lunch, and I was able to tell him what a change the LP had made in my life. And he gave me, from a little back room, one of the very first Columbia LPs. There was some amazing technology in the LP, but I keep digressing from the story of John Cage and the *Williams Mix*.

Well, it occurred to Cage that it might be very interesting to see what would happen if you had bins of recorded tape with types of sounds on them. Now, Pierre Henri, from France, was thought of as sort of the inventor of or maybe the man who gave the name to musique concrete, which meant you just found sounds in the real world, but you spun them together somehow in an artistic way, and they made a composition. So Cage was pursuing this concept, which I learned about, by the way, in a course by Jerry Hiller called Experimental Music, which I took in the spring of 1968, during the centennial year. It was the last course I needed to take to complete my master's degree in physics. We were allowed to take a certain number of distribution courses. So I learned about the early period of experimental music, as Jerry saw it, in that course, and we had some of the figures. The theoreticians and practitioners sometimes come and speak to the class, which, as I recall, had about 12 students. And I'm going to come back to that because there was a famous moment when John Cage was sitting next to me as a member of the class, and we were listening to Abraham Moles, the author of um, S—computer, no, no, no, it was, ah, and I was looking up the title just yesterday. But it's okay. Esthetic perception, okay, well, it'll come to me. Hardly matters. Easily looked up. Abraham Moles, M-O-L-E-S. By the way, this book was

translated by a high school student who ended up going to college with me by the name of Joel Cohen. But here was Abraham Moles in real life in 1968 and we had a wonderful time.

I keep digressing from *Williams Mix*. So Cage had bins of tapes, and he had sea sounds, street sounds, conversation at parties. Who knows? There were bins with different kinds of tape. Then he drew up a picture of a spliced tape, basically with a ruler, he drew tape the size of ordinary recording tape, and he had splices. There would be a long, thin triangle. So of course, if you splice two pieces of tape together, and one gets narrower and narrower, going out to its point, and the other one starts at a point, say, on the bottom, and gets fatter and fatter. You can expect that one sound fades out and the other one fades in as the record—the excuse me, the playback head, listens to the tape as it were, whereas a blunt splice, a perfectly vertical cut, should abruptly change you from whatever the first piece of tape was to whatever on the next piece. In any case, Cage drew up not—I don't, I can't remember whether random chance played a big role in the template or not—but he drew up these templates for how the tapes were to be spliced. And then there was a niching procedure for flipping coins to determine which bin you reached into to get a tape from which to cut the piece that was next going to get spliced into this big, long collage tape. It apparently took months of work by a group of people to put this one big, long mix together. And why it was called the *Williams Mix*, I've forgotten, but I have the feeling that there was somebody named Williams who may have commissioned the piece. Cage was pretty good at getting people to support his work, not that it ever brought him a lot of money. When I knew him in the '60s, he said it was the first time in his life, and he was already approaching 60 himself, that he had actually not had to think every week about how he was going to get through the next week financially. And Cage was one of the first people I knew ever to lease an automobile. He really believed that eventually there would be a world of plenty in which nobody would own a car. We would just see one standing by the street, and if we needed to go somewhere in a car, we'd get in and drive it and leave it wherever we ended up. We're now doing that with bicycles, but it's 2020 and Cage has been dead for 30 years before anything vaguely approaching his vision has come about.

In the course of doing the *Williams Mix*, he and people working with him got to arguing enormously about whether they were really following the instructions. Well, Cage was a rigorous craftsman, and he said, 'If you don't look straight down at the ruler, if you look from one side or the other, there's a parallax problem, and you will cut the piece a little longer or a little shorter than it's supposed to be.' And they roared at each other over the precision with which they were putting together what we, all the rest of us, would say were random pieces of stuff, but people accused Cage of not being serious about his music. And I think his own answer, if we read carefully, in *A Year from Monday* and *Silence*, is that actually he was just curious what the result would be. But he wasn't committed to it. If you liked it, he was glad for the piece, if you didn't like it, he felt the piece should feel bad. But as far as he was concerned, it was the idea of the piece that was the fun. And this, of course, eventually came to be called conceptual art. But the

idea that only the concept is fun is wrong. Sometimes the pieces were highly instructive, which takes us back to Jerry Hiller.

Jerry was a nuts-and-bolts guy who wanted to know how to make things work, a very bright man, a very—I have an extremely smart friend who's died recently, who I think is one of the smartest people I've ever known, and he thought Jerry Hiller was the smartest man he had ever known. So there you go. Anyway, Jerry said in class one day that one of his experiments was just to ask the computer to come up with sounds. He eventually worked out a way in which the computer could directly call up an electronic sound. So he had the computer simply increase the number of notes as it were played in. And he also played with the duration. Do we just have a brief beep, or do we have a beeeeep that goes on for a certain amount of time? Very much the way people play instruments, of course. And what he found was that he wasn't imposing any tempo at all. He's just saying, make sounds. But it turns out that the more sounds per second, or per 10 seconds, whatever you want to have as an interval, the more different sounds starting and stopping, the greater the impression of a higher tempo. We have a built-in sense of the pace of life from the quantity and the starts and stops of the sound around us. So that was exactly the kind of thing Heller was trying to get down to. What's, what's the connection between the physical aspects of noise or sound and the human perception of pitch, rhythm, tempo, various aspects of what we call music. Well, he and Cage, I think both agreed that the world was filled with intriguing sounds, and that if we were paying attention, we could find beauty anywhere, just as people who sent us out to nature and told us to sit down and listen to the birds and hear the wind blowing through the trees were asking us to just acknowledge that human manipulation of sound and image is inspired by our experience with the world, which just throws things at us.

In any case, Cage was tired of flipping coins. [Laughs.] He had been using niching for decades, and Jerry said to him casually at one point, 'You know, I can give you a computer printout. I mean, I'm using random numbers. Why not have random coin tosses? Just let the computer tossed the coins.' Cage was paying members of the dance troupe, Cunningham's dance troupe, so much money per 100 coin flips. [Laughs.] So when they were on the bus going places, the guys could earn extra money by flipping coins, which would allow Cage then to have an input to niching operations. Well, okay, this establishes the context. Cage comes to campus in '67, I believe, I think that's right. But before the beginning of the centennial year, which was the fall of '67. He may have been there earlier. And he was there because David Pines, who had known John Cage, and I've mentioned this before, from Black Mountain College back in the '40s, thought Cage would be a good person to have on campus as an associate at the Center for Advanced Study. We should be, we should be—our campus should be a lively place where visitors from outside brought to us new ideas or connected with people working in related fields, but they should be given a grant and a space and maybe even a budget and allowed to do something free from any need to teach or otherwise be busy. Modeled, to some extent, after the Center for Advanced—the Institute for Advanced Study at Princeton, which at that time was

headed up by J Robert Oppenheimer, who had been a teacher of Pines after Pines went into physics. And after, of course, Oppenheimer was the director of the atomic bomb project. So in fact, Oppenheimer was scheduled to come for the centennial year, but he was dying of cancer and unable to come. But many people that David Pines had known in his youth or in his peregrinations ended up being visitors, and were very much well received, and I think made this an extremely lively place.

So here's Cage on campus, and in the fall of '67 we did Music Circus, which had an easy concept. This one didn't require a lot of work. Cage just said, 'Come to the Stock Pavilion and dance or play music, as long as you're willing to be doing it like a three ring circus, except it's a multi ring circus with lots of other people doing things at exactly the same time. So it was a concept, and many people did respond, and they did come, and frankly, it was deafeningly loud, dangerously loud, to the point where I was young at that time, but even I was a little worried about my hearing. Now, why was I at the piece? I was there selling cider and donuts because Cage laughed and said, 'All fall concerts in New England are accompanied by cider and donuts. So we have to have cider and donuts.' The rule at the University in those days was that if any food was to be served in university property, had to be provided by university food services. So we paid more for the cider and the donuts than we were than we could possibly sell them for. We lost money on every sale. And I remember, I was sure it was a typo, but I had to pay 10 cents for every Solo cup into which I poured cider. I was sure it was supposed to be .1 cent or something of that sort. Keep in mind, we're talking about 1968, when the median household income in America was about $10,000 instead of the 60,000 it is today. So in today's money, I was paying 60 cents each for a paper cup. Some things you don't forget. All right, that was Music Circus.

I was on my way out of physics, becoming far more interested in social issues at the time. David asked me to be coordinator for the centennial year, and so I did need to get gracefully out of physics with that master's degree. I had met Jerry, I'd met John. And so I thought, well, you know, I really quite—oh, I should have mentioned how I also had direct experience with electronic sounds and with the experimental music scene, as it were at the University of Illinois. I discovered Smith Music Hall fairly early. I was charmed to be on a campus in which the music department wasn't all musicologists and composers, as it was at Harvard, with very few performers other than amateurs. Here was a faculty that actually taught people to play instruments, and there was an orchestra and so forth. So I started going rather regularly to Smith Music Hall to concerts, but also discovered that there were events that were not widely advertised, graduate recitals, things of that sort. So I would go over to do physics homework and just sit in the back row of Smith Music Hall, and if something happened to be going on, well, I was there. I walked in on *L's GA, Lincoln's Gettysburg Address*, an amazing piece by Sal Martirano that involved a helium breathing astronaut, I mean, a fellow dressed up as an astronaut, delivering Lincoln's Gettysburg Address while various other interesting sounds are going on in the background. Now, to go to a concert in those days and see something like that

was definitely to be pushed back in your seat. I think I remember a performance of *Sal M's Solemn Psalm*, too. Sal M, for Sal Martirano. Solemn psalm, p-s-a-l-m. Sal had a, had a great sense of humor, and many years later, late one night at Trino's with a composer friend, we ran into Sal, who took us home and played for us for an hour on the on, the Sal—what was the name of that—?

KN: SalMar Construction?

DE: Yes, the SalMar Construction, which was his own electronic sound synthesizing machine. Now, everybody in the world knows what a sound synthesizer is, but Sal had this thing built for himself very early. I mean, we're talking late '70s, early '80s, maybe?

KN: I think '69-'70.

DE: Even 60—oh, okay, it was, it was already, well, I didn't meet it until later, but yes, it has to have been in the early '70s. And at this point it was at his home. I don't know where it was earlier. Alright, back to that course with Jerry Hiller. Here comes Abraham Moles, and it's *Information Theory and Aesthetic Perception*. That's the name of the book. Yes, information theory, you see the old brain. It just, there's so many drawers up there. Just have to get to the right drawer and the right file. So anyway, Joel Cohen had translated this book, I think, when he was in high school, but the University of Illinois published it. So here I found a guy I knew from college. He had a book published here and now, here was the author. So Moles stood up in front of us, and Moles was a crazy Frenchman—only, only the French can be this nutty—who really had a vision of the way the world worked, and it was a kind of a radical Marxist view of the world. He said, 'Well, of course, rich people get original paintings. Who can afford a Titian, especially one that you use to line your coat, except somebody ridiculously vulgar and rich? But anybody can take a photograph these days in color of a famous painting, and you can then produce full size reproductions using multiple inks that are carefully matched to the, I mean, to the hues of the original.' By the way, I saw this done at The Field Museum. They have Audubon, they have the elephant Audubon folio in perfect condition. And they made a deal with somebody to photograph each page and then print—I think it was laser printing—and then compare each print to the original, and adjust the colors until it's perfect. And then sell those reproductions for 500 or $1,000 each, but you have, visually, the exact equivalent of their copy, their exact size, you frame it, you put it in your house, and you've got something.

Well, Moles was onto this some years earlier. And he said, 'So there's no reason why the world couldn't be filled with art.' And he said, 'Better than that, I mean, you make super high-quality reproductions for somewhat rich people. The richest man in the world can own the original, then a lot of rich people can own pretty much indistinguishable, high-quality reproductions. And then down at the very bottom, the peasants can buy cheap postcards that have, you know, poor color,

but at least some idea of what the thing looked like.' But he said, 'It's better than that. Computers can be taken to art museums and shown all the art that experts have decided is artistic, and a computer can learn'— this is artificial intelligence, you see—'a computer can learn what's artistic, what kind of an image is actually artistic. So then what you do is you put hundreds of video cameras just out in the world at random places. And if an artistic scene should happen to occur in front of the of the video camera, the processor back home that's looking at this streaming video would say, Oh, now there's an artistic scene we should print that one! You know, and you could print it at any level of quality, you know. And you have art. Art is going to be automated. You see, we won't need critics anymore. We won't need artists. We just need technicians who put out cameras and walk through all the museums of the world and photograph every artistic object that's out there.' So that, I suppose, he didn't think of 3D printing yet, but I suppose you see, if you saw a three dimensional object in the world that's sort of matched up to a bit of sculpture somewhere, well you'd say, 'Well, now that that meets certain criteria, we don't know what they are even, but we've just deduced them from looking at thousands of things, it pops up.'

Well, the more he talked, the funnier it got. And Cage started giggling. Now, Cage had a way of giggling, and he got me giggling. And then as soon as the two of us were giggling, many other people in the class started giggling, and finally, Moles delivering the lecture, was giggling. I will never forget the afternoon in which John Cage and I were students together in Jerry Hiller's course on experimental music, listening to Abraham Moles tell us about how in the future, there would be no lack of art for everyone from the very bottom to the very top of society. Well, that was the kind of thing that went on in the '60s. And we, as I said, I'm just back from this celebration in Chicago of the 50th anniversary. They put on two performances of *HPSCHD* with all seven harpsichords, all 52 channels of electronic sound, and people wandered through. This was in Chicago last weekend. Was it last week? It was the weekend before, right. The end of February. And then they came down here, and we put on a performance in the in the Krannert Center in the lobby after the new music concert last Tuesday. Or was it Wednesday? Well, Tuesday or Wednesday. Oh yeah, Tuesday, that's right. Tuesday was a seminar. That's why I wasn't here. Tuesday was a seminar at the music building, in which those of us who were there in '68 talked a bit about that event. And then the next day, four harpsichordists—the piece *HPSCHD* can be performed by anywhere from one to seven harpsichords, and anywhere from, I think, one to 52 channels of microtonal electronic sounds. Those were generated by computer directly, the tapes for the channels.

I should say a few words about *HPSCHD* and then come back to this performance. Cage had a commission from a Swiss harpsichordist by the name of Antoinette Vischer, spelled with a V. V-I-S-C-H-E-R. She had inherited a huge amount of money from some business or bank and spent a lot of it on commissioning works for the harpsichord. She played the harpsichord. Cage knew about the Mozart dice game. Mozart wrote a piece in which, I think he wrote some number of

bars of music which could be put on pieces of cardboard and dropped into a hat, and you were to flip coins and pull out a bar and place it in front of you, upside down or upside right. The treble and bass clefs were not noted, so you put it down whichever way you took it out of the hat. And no matter what you did, you always got a cute little melody. I mean, Mozart was a genius, no question about it, but this was the Mozart dice game. Well, now I may not have described it perfectly, but that's basically the idea. Okay, well, of course it would appeal to Cage. Here's random chance. Here's—see what happens when you do something. He didn't necessarily care that it had to be a cute little melody. Well, Cage had the idea of, let's do that. Let's play the Mozart dice game. So we'll do it with Mozart's own dice game. But we could also play the dice game by dicing all of Mozart. Take a whole chunk of Mozart, dice it up, and see what happens when you pull out bars. Then you could get even more inventive. You could pull out treble clefs separate from bass clefs, and you could throw in not just Mozart, but say, Bach and Beethoven and several other composers. And so now, you produce a text that a harpsichordist is supposed to play, where the right hand has a bar of something, maybe Mozart in the left hand, maybe of a bar of Beethoven. And then the next bar could be anything in the right hand or the left hand. So it—the various parts got more and more complicated. And then, because Antoinette Vischer was coming to the premiere, one of the harpsichordists was told, 'Play anything by Mozart.' Well, guess who got that one?

So I'm silk screening, and her harpsichord is 20 feet away. Oh—harpsichordists were allowed to take breaks at random, and they were instructed—there were times when all of them had to be playing. There were a few choreographed instructions. The entire evening was not—not everything was random. There was a great deal of randomness or aleatoric input into the construction of the piece, but, and there was a certain amount of freedom in the performance, because Cage said that he was a composer, but it bothered him, because he hated telling people what to do, and isn't that what composers do? So instead, he gave permission, as it were, and suggestions to players. He tried not to be rigid, but she she took a break, she got up from her harpsichord, and she came over, and her English was okay, but not fantastic. And she said to me, it just happened that at the time she came over, I had a friend who knew what I was going to be doing that night. He had purchased four or five yellow sweatshirts for his grandparents. He had a grandmother who had taken a course on modern music and had studied John Cage and gotten quite excited about it, so he wanted to give his grandmother a sweatshirt, or maybe it was his mother who was an organist in their church. In any case, David had three or four yellow sweatshirts that were unmarked, and I was going to hope that I could screen. I'd been screening on paper, making the posters for this event for some weeks. I'd gotten reasonably good at silk screening. But cloth is different, and it wouldn't even be just one layer of cloth. It was, of course, a thick sweatshirt. So I did succeed, I think, with all four in producing a pretty good image. And the image I was silk screening that night was a a bust of Beethoven on which somebody has put an Illinois, University of Illinois sweatshirt, just says 'Illinois' around it, and on the front of it is John—underneath the word Illinois is an image of John Cage laughing. So we have Beethoven,

University of Illinois, and John Cage. And that is the famous *HPSCHD* t-shirt. And I think that I've put one into this archive.

KN: Yeah, mhmm.

DE: Yes, you have the original. The first, and only that I know of, real *HPSCHD* t-shirt, but there were sweatshirts. So here comes Antoinette Vischer, and she's looking at them, and she says, 'Would it be possible for me to have one of those?' And I thought, well, I knew who she was. After all, she commissioned the damn thing, you know, and it was really quite an extravaganza. I should say that the whole Assembly Hall was filled with giant sheets of semi-transparent plastic film dangling down from the ceiling, and movies and slides were being projected against these. There were, somebody said 7000 slides the other night. I remember 5000 slides. Several 1000 of them were from NASA, and they were images from space which were very new in 1969 and this concert was taking place within months of the moon landing, the famous moon landing, which occurred that summer. So space was on people's minds. It was a visual experience as well as an aural experience.

The 52 channels of electronic sound were distributed all around the perimeter of the Assembly Hall in the last row, or next to last row of seats, and they were being played through Wollensak tape recorders. They were little reel-to-reel tapes, and there were people running the tape recorders who were told to play them for a certain amount of time, turn them off, turn them on again. So the sounds varied. The 52 tapes, as I mentioned earlier, were all different. They, they were micro tonal. They, the octave was divided into five to 56 intervals. So five is fewer than 12, and 56 of course, is a lot more than 12. And a good friend of John Cage was Johnston—first name, oh well, it'll come to me—who was writing music for string instruments, micro tuned. And on the other side of the LP of *HPSCHD*, which I'll mention in a minute, is Ben Johnston's string quartet, microtonal string quartet, which, by the way, is beautiful. I don't play *HPSCHD* very often, but the other side of the disc is actually pretty nice. So again, the idea of microtones, the idea of, why did we tune to the 12 tone scale? What else could we do? Cage did study under Schoenberg, who played with scales other than 12 tone.

Anyway, here's Antoinette Vischer asking for a sweatshirt. And then the question was, what size? And she says, 'Well, I need it for a man about this size,' and she showed her own body. [They laugh.] So we knew exactly what was going on. And she had a twinkle in her eye, and it was very clear she was a bit of a well, what should we say? She was short and not exactly svelte. But she got a Cage sweatshirt, by God, at that event.

Let's see, a word or two more about *HPSCHD*. There's an October 1968 issue of *Saturday Evening Post*, which I remember seeing on the, on the newsstand in the Illini Union and bursting out laughing, because on the cover was a more than life size image of Merce Cunningham's face,

and it said next to it, 'Who is this man?' I just burst out, 'Well, that's Merce Cunningham, of course!' And then laughed at myself, because, of course, everyone's looking at me, 'What do you mean?' Of course, I bought it and like an idiot, years later, ripped it apart. Just saved the cover. I've bought another copy, and in 2001 when Merce Cunningham was here shortly before his death for a performance of *An Alphabet*, which was a late Cage piece, after the concert for which I produced t-shirts with that *HPSCHD* image on them. I met Cunningham, and I said, 'You know, there may be people who still can't answer that question.' And he took his his very large marker and wrote his name in giant letters across his face. So I have that that *Saturday Evening Post*.

But I was—I brought it up because there are two long articles in it, in color, lots of beautiful photography, about Cunningham and the kind of dances he was creating at that era. But there's also a long article about John Cage and pictures of him here at the University of Illinois, working in Stiven House with Jerry Hiller on *HPSCHD*. And Cage discusses, in October of '68, his then conception of the piece, which was still evolving. Originally it was supposed to be done for March of that year. Here it was already October. I have a notogram from him in January of '68 saying, 'No, it isn't going to be done in time for the centennial convocation of the university,' which was the formal ending of the centennial year. I think a different Cage piece may have been played in the Assembly Hall. Originally, the idea was to do it in the Assembly Hall, but it was meant to be part of the big celebration of the end of the year. Thousands of people did show up for an hour or two, after which, and I mentioned this in earlier tapes, we went off and invented the 199 course and discussed educational reform, which was also in the air at the time.

Again, if there's any point to the tapes we're making here, it's that there was an intertwining of art, and new awareness of sexual freedom, and anti-war feeling, and so many odd threads running through the late '60s, that to paint the era as merely one of student rebellion against the draft is to miss what a rich period it really was. Art and politics and rethinking, life, careers, what it was like to be a human, what your destiny was as an American. Were you a consumer? Were you a corporate man who had great loyalty to your company? A lot of questions were up in the air at the time, and they all intertwined. So the event of *HPSCHD* took place, not all that long before people were shot to death at Kent State. We weren't seriously into violent anti-war activity yet in May of '69, but things were moving that way, and Cage's dedication to the book *A Year from Monday*, which came out about then, '68, was, well, I can't quote it, because I've never been able to memorize anything. But it was along the lines of, that the United States might become just another country and that no one will hate us. It was far more elegantly, eloquently stated.

But Cage became more and more political after *HPSCHD*, and Bill Brooks argued last week in the seminars I attended that this was his last festive work, where people were meant to come and have fun. After that, he was more serious, more, more questioning of the direction in which

society was going. And, unlike Moles, imagining a utopia in which art is available to everyone and we don't have to work more than a few hours a week to meet our needs and can spend the rest of the time enlarging ourselves. Of course, I think the dystopian future became to be more and more clear to people like Cage after that. And here we are, low-income people working three jobs, not 20 hours a week, but 60 hours a week. And it has not turned out exactly the way some of the more hopeful people of the early '60s envisioned it. And yet, speaking only for myself, I'm living in a fool's paradise. I'm surrounded by beautifully recorded CDs that have been computerized, restored, noise removed, distortion removed. Artificial intelligence is making my life better. I'm certainly living in a heated house where I grew up in a bedroom that was at ambient temperature.

I should mention going back, I see a note here that I went by, one of the things Jerry Hiller said that was rather surprising, but it made perfect sense, was that wouldn't it be wonderful if computers could figure out how to put notes down onto bars so that we could play them? But all music was hand—pretty much—handwritten or hand set. I mean, you might be able to place formal new—people had to lay out music that musicians play. And for obvious reasons. I mean, if there are a lot of notes in a bar, the bar is wider than if there are only a few. Bars have to fit on paper of a certain width, and you don't really want to break a bar in the middle. There was no music typewriter. There was nothing like it in the spring of '68. And I think it was Lippold Haken, Rudolph Haken, who's in our faculty now, he's of the oldest, but I think it's his brother who invented the first music typewriter. And I believe now he continued with his software to the point where you can play a piece on a piano and the music can appear on a screen. But that was still inconceivable in '68. Now remember, no home computers in those days. We had nothing but mainframe devices. The programming was clunky. We had no higher level languages. People worked in Fortran or machine language, God help us. But I think it was Lippold Haken at the University of Illinois who invented the first music typewriter, in effect.

So this campus, as I've said before, is a hotbed of creative uses of computers outside of math and science. Ben Williams, who is the pathologist at Mercy Hospital and the creator of the local centralized blood bank in Champaign, and whose students came to me for writing, talked in the '70s about odor technology being able to detect disease. I have stories of doctors who could smell disease, but when the common diseases started disappearing, no doctor had that experience. These days in America, we do nothing but lab tests. Around the world, there may still be doctors who can actually smell various diseases, but they do have odors. In fact, I recently solved a medical mystery that was posed by the Indian guy who writes the best books in America at the moment about medicine and, no, well anyway, one of them is called *Complications*. But he tells the story of a girl with a red leg that looked like just cellulitis, a skin inflammation, but he couldn't get out of his head the possibility that it was necrotizing fasciitis, which kills you rapidly if you don't get after it. This is an infection that can't be killed with antibiotics, that eats muscle and fascia, and it's the breakdown products that overwhelm the kidney and liver and eventually

cause the blood to be thick and the heart to fail. Atul Gawande. So Atul Gawande writes about why—he doesn't know why he persisted in demanding a biopsy of this girl's leg, but she really did have it, and I wrote to him and said, 'You know, in your story, you tell that a few months earlier, you had operated on a man who was infected with exactly the same microorganism that she had, and he had died horribly. After you chopped him apart trying to save him, he died, and I think you smelled it. I think it was in her sweat. There were no open wounds. You weren't able to—there wasn't a wound that you were smelling as you were in that previous case, but I bet her sweat had the odor in it, and that's why your brain kept pounding on you not to go away and just avoid an expensive mutilating biopsy. And it's a damn good thing that you did persist. But I think it was your subliminal awareness of an odor.' But that's how my brain works. I connect everything to everything else, and Cage did the same sort of thing.

But I didn't want to not mention that one of the Haken boys, on this campus, and with the kind of inspiration of people like Hiller and Cage all over the place, did come up with the world's first ability to just play music and let the notes pop up on a screen. And I have the feeling there's software that even tells how to organize the music to be printed. But increasingly, when I go to concerts, I see people looking at iPads instead of paper music. And the world has changed in some predictable ways. But my experience is that everybody who thinks that we will have some wonderful thing in 10 years ought to multiply by about a factor of four or five. It takes 50 years to get from concept to reality. And if Cage were alive today, I know he would enjoy this world, but I know it would bother him as well. There are many aspects of it that don't suit his vision.

I said—I found myself saying at the, at the symposium last week that recently I discovered that for the last seven or eight years I've been completely without anxiety, without stress. And I said, 'I think I owe that to Cage, among others. I mean, I've been very fortunate, but Cage also taught me to take the world as it is, to be less eager to change it—although I think when we see things that need changing, we should work on them—but we shouldn't become ego involved in success. You do what you can, and, and, but you also have to be sensible enough to know that sometimes the world's ready for an idea and sometimes it's not.'

So, somebody said to me in the early '90s that they remembered me from the '60s, and that I had said all I wanted in life was a kiosk in the marketplace of ideas. And this fellow said, did you get it? And I thought it over, and I think the answer is yes, I've made a little contribution to the safety and quantity of blood for transfusion. I've made some contributions to how we might as a society go about financing higher education for those who can benefit from it. I wouldn't say that I had 100% success in either of those endeavors, which are the world improvement endeavors, if you wish, that I engaged in. But I think I became, I became—my vision of what to do is twofold. You could make a list of everything you think is important in the world. And in '68 everybody's number one would have been how to settle the war in Vietnam. But you know, having made your list, you could look down it, and if you don't have any clue what to do about the first 30 items on

the list, but you do have some insight into what might make number 31 better, then for you, 31 should be number one. We all tend to focus on things we can't do anything about. And you know, that's a big central principle of Alcoholics Anonymous, not that I've ever been to a meeting, but you have to know what you can do something about, and you have to stop fretting about the things you can't do anything about, especially in your own past. My other insight, I think, is that when you do have good ideas, or you think they're good ideas, there's always the problem of assembling enough people who agree with you to actually get something done. So I imagine myself as a cook with a very large stove with many burners, and I have many things simmering, but some of them have been simmering for years, and if there's nobody else interested in working on them. I could pound my head against the wall or store hard, or turn up the heat, or, you know, use whatever metaphor you wish, but I really think that you have to enjoy life.

You weren't here to be miserable, but you also ought to be ready to leap in when you think you have an insight that might actually pay off into a thing that would make life better for some number of people. And I got that from Cage. I think he loved his own work and he could do it by himself. He always was curious whether other people would find what he was doing as interesting as he did, but it didn't worry him if they didn't. Everyone should have *A Year from Monday* and *Silence*, and if you do nothing else than read the one-minute stories that are at the bottom of the pages, you will get an insight into a man who really knew how to live. And I'm very grateful for having been in the same space and at the same time as John Cage and Jerry Hiller. End of today.

KN: Alright. Thank you so much.