JAY LEMKE: -- introduction. It's always a somewhat unusual task both for a speaker to operate in a lunchtime environment and also for you to operate in this environment. So please go on enjoying your meal, and I'll try to forewarn you if I'm about to say anything that might cause you to choke on your chicken. Let me first rev up the POWERPoint here on an unfamiliar machine.

(Setting up POWERPoint)

JAY LEMKE: So a theme that has come up in our discussions, and I think is a very important one for us to take perhaps more seriously than we have, is this issue of reflexivity about our own research. We're engaged in a conversation about the construction of standards, standards of practice, standards of professional vision, but those are our standards about our practices and our professional vision. But we haven't done a lot to study our own practices and to study our own professional vision. We are very good at studying the practices and professional visions of members of other communities doing other kinds of things than what we do. And, of course, we each individually and reflexively think about our own practices, but we haven't I think conducted the kinds of studies that someone in the social studies of science tradition or in ethnomethodology or even in ethnographic tradition would conduct
of ourselves and in particular of how we use video, how we make
the video, how we analyze the video, how we produce and present
results that have come out of that analysis and so forth. And
to really have standards of practice you need to have some sense
of what the practices actually are. And so there are a number
of issues that interestingly for me sort of float around this.
I was invited to do this presentation as a keynote, but I knew
that it wasn't going to be at the beginning of the conference
and so I was trying to think of other ways of conceptualizing
it. So I was thinking of it as a flea note, that is to just
sort of release into the room a number of little fleas that
might cause people to go on itching and scratching for a while
after the conference is over. One of these is the question of
how our professional vision is influenced by our every day
vision about video. We are members of the video generation. We
have been brought up watching video and film and television
programming for all of our lives, but do we really know in what
ways our professional vision of videos that we make of
classrooms or other kinds of situations, videos we make, videos
we watch, videos we analyze, videos we construct for
presentation, how are we influenced in doing that by the
conventions that we have learned? Particularly the implicit
conventions we're maybe not so aware of having learned that come
from a lifetime of viewing video and film and television which is itself constructed according to very narrow genre conventions. The kinds of video that we have seen in our lifetimes do not represent the full range of possible sorts of images that a video could show us. Many of you probably know of the famous project of Worth and Adair, Through Navajo Eyes in which they gave a film camera to members of a Navajo community with very little instruction beyond sort of how to turn it on and turn it off and sent them out to do as they would with it. And the kinds of film that came back, if you've ever seen them at an ethnographic film festival, they look very different from what we normally consider that a video ought to look like. I understand one of them actually won a prize at a film festival in Japan. So the cultural conventions about this are ones that we need some more reflexive analysis of, and we need some of our own community or borrowing people from some other communities to help us step back and have a look at them.

So my first image here, and I'm not doing video in this presentation, and my images are somewhat tongue in cheek as you will see. This is from Winky Dink and You which I refer to in the opening of my chapter for the often mentioned volume on Video Research and the Learning Sciences as an example of early interactive video since in the case of Winky Dink and You, and
most of you are hopefully too young to remember this, you were actually supposed to place a piece of plastic over the screen and write on it with a crayon in order to help Winky Dink solve his problems. Or some of you may have not put a piece of plastic over the screen of your television sets and used a crayon to help Winky Dink solve his problems on a longer time scale.

So here are a number of the kinds of questions that I'm raising initially about video and us. The first one I already articulated, and so the question reflexively asks us where is our research that would help us to answer these questions? Where's our research both on the kinds of practices we use and on the kinds of conventions we follow that we may not be so consciously aware of? Now, we're not just talking here about a video in general or even video research in general, but we're talking about video research about learning or about education and teaching. Here is, of course, another example from the corpus of commercial productions about education. The famous Stand and Deliver movie about Jaime Escalante and his teaching of calculus to students who weren't expected to be able to learn calculus. And it's meant here again to be evocative of many of the different kinds of conventions that we have about what a video of a classroom ought to look like. It's in
principle possible to have many different kinds of views of what a classroom ought to look like and yet I think many of us might find ourselves a little bit limited in imagining what a really different video view of a classroom might be because we have, in fact, been influenced by these traditional views. But it introduces issues about learning and learning research. And clearly standards for what constitutes good video about learning can depend a lot on our theory of learning. So if your theory of learning is that you learn something in a relatively short period of time and then you either remember it or you don't, you have a different set of standards about the time scale on which you would want to construct a video record of learning than if your notion of learning is that it's an aspect of human development that the interesting kinds of learning, the non-trivial kinds of learning only take place over much longer periods of time or even if you just believe that there are different kinds of learning that take place over longer periods of time than the ones that take place over shorter periods of time. And then you're going to want to have standards about the collection of video data about learning that enable you to cross time scales, that enable you to link what happens over shorter periods of time with those that happened over longer periods of time. And that raises many of the questions that we've heard
already at the meeting about how we deal with video that extends
us over very long time scales. The problem of how you watch
video that lasts for hundreds of hours or how you create re-
representations of the video that somehow compress it in a
useful way or link it into the shorter units.

All in the Family, apart from again evoking the
commercial television world, is designed to broaden our sense of
what constitutes video. You know, this is also been mentioned
already. There's a whole family of video technologies. I think
Ricki was particularly articulate about this. There are many
different kinds of videos, videos produced for many different
sorts of purposes, and there may be different professional
visions for these different kinds of video. So there are the
issues of how do we look at commercial film and video? How do
we look at research data video that we consider to be
naturalistic or raw footage? Research presentation video, that
is the things that we edit up or create for the purposes of
making our arguments, what you might call evidentiary video,
video that's been converted as Fred said from a mere information
source into data about an issue or in other terminology from
mere data to evidence for a claim.

There is, of course, now, what I'm calling here
digital display video. By that I mean screen video or what some
people call processed video, a video that comes off the computer screen, one of the kinds of screens that Ken Haye was integrating into his sort of massively parallel, synchronized system and all sorts of other kinds of video from home movies and personal travel movies, machinema is sort of the attempt to create video narratives in game worlds or VRLM kinds of worlds. Military video, if you know Paolo Veriglio's famous War and Cinema, you learn a great deal about the nature of the video medium by understanding how it was used in planes flying over battlefields and how a lot of technical innovations were developed in that context. Or even closed circuit television surveillance video that is routinely collected and ignored but when something interesting happens can become evidence in a courtroom. And as we look at other sorts of communities in which standards of practice around the use of video, particularly video as evidence have been developed, there is an ongoing discussion right now which I'll refer to again in a couple of minutes about the use of video, surveillance video as evidence and the fact that digital video because it doesn't have the same kinds of accepted standards that closed circuit television has developed often fails as evidence in a courtroom as opposed to analog video.

Many of us remember How to Lie With Statistics, both
the book and how to do it. And that, of course, raises another perspective on the general issue of standards of good practice, good scholarly practice, good scientific practice. They do need in some sense to be defined in contradistinction to standards of bad practice, to the kinds of things that we would not like to see people doing with video or the kinds of things about which people should be warned that this can happen with video and so on. In this particular case, my image comes from America's Army, a Pentagon sponsored video game. My current area of interest is video games, and I'll come back to that at the end since we are here within a missile's throw of the Pentagon. And also because of the issues of how video can be used because of the simplistic cultural assumptions we have about representational correspondence or verisimilitude that video somehow shows you what really happened, those can work for you if you're rhetorically trying to get people to emotionally identify with what's happening in a scene as Ricki mentioned with the videos about the Holocaust. But they can, of course, also work against you if people are playing on your credulity about representational verisimilitude as we do, of course, with fiction films and fantasy films and as we also do with embedded video journalism in wartime or the video released by the different sides. Usually, we only get to see one side of that
video unless you have satellite TV or live in Europe in which case you get to see both sides. And you can see how very different the bombing of Bagdad looks from the points of view as these videos are presented to you, say, by the Pentagon which it looks like they just blew up the headquarters of Sadam's military organization. But then you look at the video that comes from the Dutch cameras which show that the building is still standing the next day. Yes, and maybe it was actually the hospital next door that was blown up.

Or, of course, things which attempt to represent themselves without even the, you know, thin veneer of skepticism that we might attach to wartime video coming from the Pentagon as you might see on a news network. I mention Fox only as an example. But while it's wonderful to be able to laugh and feel morally superior to people using video in bad ways, clearly there must be exemplars of bad video research within our own field. And I think that if you are going to seriously construct standards, you need to look at bad video research as well as a good video research. And, in fact, you may learn more by identifying the examples of bad video research than good. I don't know for sure, but it's quite possible that, you know, every good piece of video research is good in its own way, paraphrasing Tolstoy, but all bad video research has a lot in
Now, of course, we are interested in standards about how to try at least not to lie with video. And so there are sources from which we can get some advice about this, other disciplines. And I mention here just a few as examples. Visual anthropology has a few gray hairs. It's been working on these questions for quite a long time. There actually was recently an international conference on new developments in visual anthropology, and I have a web site citation to that somewhere. I think it's actually in the notes you can't see to this slide. And one of the very interesting things there is the movement towards incorporating the video footage from ethnographic research into multimedia database complexes in which that video is linked to all kinds of other information, field note data, and statistical and family census data, and all the other kinds of information and is, in effect, creating a new medium. The new medium is not just the sum of the elements that are combined into this multimedia, but they each sort of contextualize and multiply the meanings of the others so that there is a new medium. And this also has to be included in our family of video media. And the family of video media are not just all the different kinds of video but are also all the different kinds of multimedia complexes of which video is a significant component.
There is also a lot to be learned I think from the so-called visual turn or what I'm calling the visual restoration movement and the reaction against logocentrism. And I mention a lot of names here, particularly ones such as Barbara Stafford and W.J.T. Mitchell which are particularly arguing that visual materials can constitute scholarly evidence in just as rigorous a way as verbal textual argumentation and making some very interesting and very strong arguments about that. And I think for all those of us who are interested in this question of how video can stand on its own two feet as a form of evidence that their kind of arguments should be required reading. And then coming back to what I mentioned before, forensic video analysis, this is not just collecting the video from the surveillance cameras or from bystanders who happen to video an event that may have been a crime taking place, but the whole questions of the legal canons of evidence, what is admissible, how evidence should be interpreted, how the evidence can be presented, questions that need to be raised about whether the evidence has been tampered with. Quite a different viewpoint about the question of raw footage versus edited video which is another important thing to come back to in the context of our own practices about the use of video and, indeed, our own ideologies about the use of video. And the little acronyms down at the
bottom are three places where this discussion in the forensic community is going on. The first one is a U.S. group that advises lawyers on these matters. ESIA is a British group that's actually attempting to create an official legal standard and Avid is a company which will -- whose web site will tell you a lot about how forensic video analysis is actually done.

Which brings us to Eisenstein's theory of relativity and I selected this particular photograph of Sergei Eisenstein because it's sort of highlighted in the same way as certain famous iconic images of the author of the other theory of relativity. And, of course, Eisenstein's theory of relativity is a theory of montage that is a theory of context effects in video. And it's the beginning of a long tradition, and a tradition that I think in looking about at standards for video research in our field that again it's worth paying attention to, and this is the tradition of film theory and film analysis I find particular useful. And now, was it Roy or maybe it was Rand who mentioned DeLeuse and Bergsen at the end of your -- yes, Rand's presentation. You know, DeLeuse's work on the cinemas of movement image and time image based on Barrettson's phenomenological rethinking of the nature of time as not being quite so linear as it's traditionally viewed gives another kind of notion about context effects and another kind of notion about
the relationship between edited and unedited video. No video is in some sense unedited, that is it always has a point of view. But when you actually start slicing it up and splicing the different bits of it together there are interesting questions about, you know, what makes sense, what ways of doing that make what kinds of sense and what ways of doing that make the kinds of sense that we might not want to see. Maybe the lying with video. And this is again I think a particularly fraught issue in our community where we certainly seem to have a sense that there's a certain kind of pristine or naked video, the untampered with video as being somehow superior in its evidentiary value to constructions of video which have been edited and have pieced bits and pieces together. And I think we probably need to think rather seriously about whether we've entirely thought that issue through. Certainly, film theory has come to very different conclusions about such matters perhaps than we have, and I think the visual anthropology community is beginning to rethink some of these questions as well.

Another aspect of this is that many of the kinds of effects that Eisenstein was interested in were affective emotional effects of video and also political effects of video. His project really was to sort of persuade the workers of Russia that the revolution was really a wonderful thing for them and
that the old landowners should have been, you know, shot and dumped in the river. And in many respects he did quite a good job of doing that despite the fact that the Party Central Committee, you know, sort of waxed and waned in its support of the ways in which he was trying to do this. In the course of doing it, he learned a great deal about the affective dimensions of video. But apart from I think Ricki's mention about the Holocaust we haven't really heard a lot about the affective dimensions of video or more properly of our response to video. What are our own affective responses to the kinds of video that we analyze? What are the sources or features and the elements of our own background and commitments that give us various kinds of affective reactions to the materials that we work on? Many of us show a great deal of enthusiasm or passion for our research and for the video that we look at, and I think we need again a more critical, reflexive understanding of just what it is we're doing and just what it is the video is doing that is producing or evoking these emotional responses in us and that this is a very important part of a critically reflexive, scholarly approach to our own uses of video.

Transana, my program for pulling images off the screen unfortunately would not pull the video still image out of the black box there, but there is one -- was one there when I did
this. And this again is to highlight this notion of evidentiary complexes or multimedia complexes. One of the ways in which we make video into evidence, into data about something in Fred's sense is by putting it together with other things such as the transcript in the lower left box, the coding scheme in the lower right box, and this somewhat peculiar affordance of Transana which is also a very useful one, namely the audio image that we have in red in the upper left as also an example of a kind of intermediate representation. You can go through and scan across that audio representation and you have some kind of picture there of what's happening in the audio stream of this video, maybe not one that we've learned how to read and so many of us have mentioned the importance of trying to construct. Ken Haye showed us a very interesting one today trying to construct representations that enable us to see through time in a video or even better in a corpus, an extended sample of video materials. And this is clearly one of our big unsolved problems, and it's probably unsolved because we are missing something. Right? The fact that we haven't really been able to figure out how to do this and that most of us seem to feel we want to do it to me is a pointer that we're making a mistake somewhere. There is something we haven't figured out, something we haven't thought of, something we're thinking about in completely the wrong way.
I think it's not just that it's a hard problem. I think that somehow we missed something about it. I wish I could tell you what that was, but this is just a flea.

Here are just some of the kinds of things that we do connect up with in these multimedia evidentiary complexes. And here is one of my lists of the sort of things one might put into the meta data accompanying these things. And you can see there's, you know, quite a lot of stuff already on this list. I might highlight from this the second to the last one, properties of the corpus and the position of the video in the corpus. This has to do with the question of the context from which something comes. So not just the context from which this clip comes in the whole video but the context from which this video comes in the whole research project or in the whole corpus that you're doing. And at a slightly larger stage from that, the purposes of the research project which are relevant to the kind of video that was generated in that research project. And something that seems a little too big to be meta data which was mentioned today, and that is the theory of learning or the theory behind the kind of analysis I'm doing on the part of the researchers conducting the research project that produced the video. That seems like more than meta data, and I think the question here is when and for whom is that kind of knowledge useful. Another
fundamental question about integrating video with other media is what does it mean to actually integrate them? That is, yeah, you can create a frame or a window on the screen and put video in that window, and you can put a lot of other windows up there and put a lot of other stuff in those other windows. But in what sense other than temporal synchronization are they actually integrated with one another? That is in what sense do we construct meanings by relating a video image and a transcript or a sound file and the visual image or other kinds of data or meta data and what we are seeing create meanings through their combinations or connections that we don't create with them separately and how do we do that? And my answer to how for that kind of question is not a, oh, there's some interesting brain process that does it for us. My answer is more the socio technical answer that is what do we actually do physically and materially in terms of practices and artifacts and so forth that enables us, that mediates our process of doing this. My own work has offered, you know, a couple of suggestions about this. I have a sort of theory about multimedia meaning making which I'm not going to go into here, but one piece of that theory is that many media tend to be either more typological or topological in the way they do semiosis, that is they're either more about meaning by degree where what matters is how much of
something or how little of something, how intense something is versus typological or sort of categorical meaning what matters is what kind of thing it is. It's either a this or a that as opposed to how much of it there is. And I've also advanced in other work the notion that a lot of what's really basic to the natural sciences is the history of how the natural sciences have learned to integrate language, the language in terms of which we have our conceptual explanations about natural phenomena which is a fundamentally typological system, a semantic system that works on categories and categorical distinctions to connect that with natural phenomena which in the case of the history of science were very much about the continuous co-variation of one continuous parameter or variable with another continuous parameter or variable. And my hypothesis is that most of mathematics up until the 20th Century largely was built as an intermediary bridge with some properties of one and some properties of the other to enable us to do that in the natural sciences but that also many of our other devices like Cartesian graphs and so forth and our ways of using them, the practices that we use to integrate them have been part of the tools or doing this. Which brings us back again to the question of intermediate representations in our analysis of video and video corpora. It may be that the natural sciences actually and
mathematics actually offer us some clues about how to integrate the kinds of analysis we may want to do. For example, category coding which is very typological with the continuous flows and changes that one sees in audio and video data. Flea. Big flea. Bee maybe.

The next point which has been mentioned a couple of times and seems to me to be a very important one is this whole question of multi site video research. You know, we've been doing classroom research studies for a long time, and we still tend mostly to do research studies in education in which we plop our cameras down in one place, maybe a place where teachers are meeting for a professional development session or it may be a classroom or it may be a small group of students working on a project together. But for the most part, we draw an artificial boundary around that place, and our actors, our participants walk into that scene and walk out of that scene, and we don't follow the actors. We don't follow where they were coming from and we don't follow where they are going to because it's hard, because it's difficult in purely practical ways to do this. And yet in terms of the model of learning that I had sketched out back the beginning, we are increasingly coming to think of learning as something in which what's important that's happening is how the short term learnings that we capture in our videos
are or are not integrated and sustained into longer term learnings and longer term strategies and habits of thinking over longer time scales, time scales over which people move to other sites. And this, of course, is something that ethnography is very much concerned with. Margaret Eisenhardt had an article a couple of years ago in the Educational Researcher about this issue, and I think that increasingly as our technologies are becoming more powerful and it's becoming easier to do some of these kinds of things, we're going to have to start thinking about how we integrate video shot in different locations about the same participants and what kinds of tools we're going to need for that and what kinds of standards and strategies we want to have to be thinking about what constitutes useful or effective or plausible or credible forms of integration and connection of events that are somewhat remote in time and separate in space from one another. So that we begin to see learning as not something that happens in a place but something that happens across places. Not something that happens over any time scale but that happens through an integration over time scales. And here's the same point basically made in terms of the time scales, and I think we discussed that probably enough already.

Back again to Video and Us. This is from the Sims
University, Supplement Sims Two, University Supplement. And something of a recap of some of the points that I have made here. I think that particularly interesting on here is the last one, what kind of sociology of video research in education would we like to have, would we like to see? Would we like, you know, an ethnomethodological account of what we do in our work? Would we like Bruno LaTour to come in and do a study of our socio technical practices in using video? Would we like to resurrect Pierre Bourdieu and have him tell us something about the dynamics of our community and the fields and power relations and exchanges of cultural capital that tend to shape our practices and the formation of our standards and so forth? And the real point here is we don't have any of those, and I think we are to some extent proceeding a little too much in the dark insofar as we have only a personally reflexive account of our practices and not, in effect, a professional vision analysis of our professional vision.

Something that could help us answer more objectively or at least on a larger sample than ourselves questions about what video does to us or what we allow video to do to us or what we are willing to believe that video does to us. Some at the top. And not only does to us but does to others, to other people and maybe what it does to things other than people. What
does video do to a place? What's the difference between a place and how people live and interact in a place where video is available or video is going on? Again, Ricki mentioned, you know, mobile sources of video. The time may come when video is everywhere and accessible to us all the time. What sort of difference is that going to make to how we or how our students or the next generation of our students see video to their professional vision about video and their sense about what video evidence is going to be? Are the standards that we create based on being the television generation going to make very much sense to our students 20 or 30 years from now who become part of the ubiquitous, mobile computing and video generation? What it does to gatherings, to computers, vehicles, etc., etc. Finally, a plug for my own current hobbyhorse here. This is another extension of All in the Family, another kind of video medium. This is the medium that is exploited in the very successful video games and computer games today. It's an interactive, immersive medium, VRML, Virtual Reality Modeling Language kind of medium which is already being used in projects like Sasha Gorov's and Chris Vitti's for the construction of learning environments. And my particular interest in this at the moment is partly the theoretical one, what can we learn by studying how people interact with video games to see how learning accumulates
across short time scales to long time scales and from one virtual place to another virtual place in a medium in which it's much easier to do that than it is to do that in the real world? But then also what can we learn from understanding how people are doing that now about what would be good design for interactive, immersive learning environments for mathematics, science, technology, and engineering or other fields in time very soon to come? Because if we don't design these things, other people out there interested in making money are going to design them for us and could very well make a lot of what we hope to do in education irrelevant because they can do it better and cheaper, at least better enough to be more fun for people and more engaging for them and at least good enough to give the same test scores as what we're producing. That, of course, may be an artifact of the tests, but that's the world we are in right now. A little image again from the Sims Two virtual lab, just an empty construction of what is actually supposed to be a virtual online campus. And one could well imagine virtual online schools and universities that are private, proprietary, profit making enterprises.

So those are my fleas, and I hope that they will continue to make you itch in uncomfortable places for the foreseeable future. Thank you.