

whatever happens between the pictures

a lecture by Werner Nekes; edited and with an introduction by David S. Lenfest

The films of Werner Nekes and Dore O were not well known to Americans interested in experimental film in 1971 when I first encountered them. At that time I was fortunate enough to see Dore's early Alaska and Lawale and Werner's gurtrug I and jum-jum. I found at the time that I was profoundly moved by these films both because of their visual density and variety, and because they invoked a deep level of the subconscious that I had only felt suggested in the work of Brakhage, Baillie, and Hindle, although Nekes feels more sympathetic to Gehr and Jacobs. Technical curiosity followed this initial impact, and I was glad to see the enormous growth in their work that had occurred by December 1975. Not only were there many more films of substantial length, but the work itself had deepened in the complexity and rapidity of images presented.

From a technical standpoint their films are remarkable because so many of the effects are achieved in the camera by multiple exposure. At one point in the following lecture Nekes indicates that the same roll of film may go through his camera as many as 16 times. This practice generates enormous problems for exposure and for registration, to mention only two of the possible dangers. In addition, this practice is further complicated by the use of masks to divide the image into geometric patterns. Once one understands that none of their special effects are achieved with an optical printer, the technical mastery of these two filmmakers appears even more extraordinary than it had before.

Viewers are often perplexed by the density of the images and by the rapid changes in pace in these films, and the following lecture is helpful in understanding the principles behind these startling changes. Any "literary" content is denied to the films, that is, we may not expect a narrative sense from them; rather, the filmmakers tell us that the handling of the visual and audio material is the message that is being conveyed. Those techniques range from static images to images that "stream," and to horizons, or frame lines, that break before our eyes. Through multiple combinations of often diverse subjects (say, in Diwan, V, Hynningen, a recumbent nude female torso combined with a multiple exposure of two windows) these films suggest the complexity and depth of dream states, in particular, and of the unconscious, in general. The truth of Walter Murch's concept of film is realized in the work of Werner Nekes and Dore O: "...the real power of film lies in its ability to alter our subconscious awareness in the same manner as dreams. Deep films have a power over our lives that is similar to deep dreams." (Filmmakers' Newsletter, December 1974).

This lecture suggests a grammar of film which is a key to giving dreams a filmic shape. Perhaps the most radical and important idea here is the definition of film as being the difference between two frames. An old optical toy, the thaumatrope, is used to make the point; when it is still we see a bird on one side and a cage on the other; in motion we see the bird placed in the cage. "That's movies," Nekes tells us, and certainly he is correct and original in pointing to two frames as the fundamental unit of film. This notion is particularly important to a concept of film that wants to move away from literary and other backgrounds, because it leads to the assertion that every two-frame unit, which he calls the "kine," can be considered a montage. If that can be true then we can look forward to a much higher picture density than we now commonly experience. The identification of the two-frame unit, the "kine," also suggests the high degree of flexibility of image treatment that is characteristic of their work. Despite this interest in the technical, it should be remembered that there is always an intensely human element in the films of Werner Nekes and Dore O. We are always shown human beings in an environment, and we are always drawn into the active and subconscious lives of people, often the filmmakers themselves. People are frequently shown in relief in different landscapes, and these locations, ranging from the Hebrides to Poros to Sweden,

interact with the level of the subconscious being suggested so that they also become internalized.

The visual density, or, as Nekes refers to it, "the cumulative information level" of these films shows us levels of perception which literally derive from multiple exposure, but which at the same time reflect the richness and variety of the human unconscious. As we watch the alternately static and rapidly moving images of T-WO-MEN we come to understand the hesitations, distances, and closeness of the two women who are its primary subject. Multiple printing and alternation of static, or vibrating, images show us the inner reflections of these women as they close the psychic distance between themselves. There is no literary structure to the relationship; rather, what is perceived is a varyingly intense human relationship measured through the use of an enormously rich cinematographic grammar. The films then deny old stories and story frames at the same time that movie techniques lead us through perceptions of human spaces.

It should be noted that both Werner Nekes and Dore O work independently, although from the look of their films it is clear that they share many theoretical concepts. The following statement on the nature of film was presented by Nekes at the Center for Twentieth Century Studies at the University of Wisconsin, Milwaukee, on Dec. 8, 1975. Dore O was asked to speak as well, but she declined, deferring to what she felt to be Nekes's more practiced lecturing style. However that may have been, it seems to me that much of what he has to say also applies to her work. The following version of the talk is a syntactically and grammatically edited transcript of the talk. Questions from the audience have been included where they were appropriate. A filmography of Werner Nekes appears at the end of the article.

-David S. Lenfest

I want to give you a general introduction to what I think cinema is. There was a short mention of the title of one of my films. It was pronounced T WO MEN. I pronounce it TWOMEN, and this pronunciation is the verbalization of the visual effort the brain has to make when it reads pictures in films. I have chosen this title because, with its programmatic qualities, it approaches the center of cinema. This title is programmatic because it deals with the legibility of film in a horizontal way: that is, horizontal as opposed to vertical reading. Horizontal refers to the time axis: receiving the information from frames in different time segments as they follow each other. Vertical reading happens when the viewer receives amounts of information on different pictorial levels within one time segment. This means that horizontal and vertical reading of pictures can happen simultaneously. Not everything that I say will be clear immediately or understood easily, but some things I have to say are quite important, it seems to me, because I have never found them in any other books, or in other thinking about film.

So you all know that film is a strip of celluloid with frame after frame transported and projected within a determined amount of time. If you think of having the strange writing of the title T WO MEN on three frames following each other, the T on frame one, then the WO on the next, and the MEN on the third, and you project this, then you have a small chain of filmic information. You are reading "two women" because the laziness of the retina combines the frames. You are fusing or melting frame A with frame B, but also frame B with frame C. The semantic ambiguity is the result of joining the two smallest filmic information units, which I call "kine". What I'm saying is that if one wants to treat cinema seriously, disregarding the older media disguised by film, such as literature, vaudeville, theater, painting, etc.; if you just concentrate on the medium of film, and if you ask yourself: what is the medium? What does it do? Out of which elements is film built up? Or, what is the smallest filmic element? I came to the answer that cinema is the difference between two frames: the

work the brain has to do to produce the fusion of the two frames. This small unit which I call kine is the smallest particle of a film one can think of. Though it is composed of a lot of elements, the visual components do not yet determine the filmic language. If you, for example, take this big unit: a single frame, you have a photographic information; if you take two frames, the difference between them defines the smallest unit of filmic language that is possible, one filmic information. Every film can be regarded under the principle of this difference, which is a construct of a time/space relation. The analysis of the kine enables us to come to conclusions over the language used, to determine the level of filmic information connected to the work the spectator has to do. Until now, most film criticism or theory, and also much of what I read of semiotics, has regarded only longer film units, such as the montage sequence.

If you take a short look back at the history of cinema from the viewpoint of information theory, you can say that film is always used for the transportation of information. With the first films you have the camera set up and a cassette on top of the camera, and the camera ran for a time equal to the length of the film. Those were the one reelers, at the very beginning lasting three to five minutes. If I look now at the differences between the frames, the kines, I'll find that the time/space differences are all very minimal; the frames have the same relations towards each other. I call the frames a_1, a_2, a_3, a_4 until a_n , which is the end of the film, the last frame. A new time/space relation was discovered accidentally by Melies; when he shot a traffic scene at the Place de l'Opera in 1896, the camera stopped shooting for some seconds. The effect in the projection was that a bus drawn by horses was transformed into a funeral procession, men into women and vice-versa. Among all the kines carrying the same time/space differences, or loads of visual information, there was one kine in which the difference was wider, the time was shortened, the difference was stretched.

This new quality of a kine was the subconscious start of the evolution of film language. When a great number of kines carry this time difference we call it quick motion, or if we shorten the time differences we have high-speed shots. Naturally, in such a sequence the information level is as high in a continuous normal shot, because the predictability is very high from frame to frame in respect to the time difference, In other words: the lower the chance to anticipate the next kine, the higher the information level of the film, We can now deduce for cinema: the predictability of a kine determines the level of filmic information. This idea corresponds to the fact that the higher the level of filmic information, the more film realizes its own possibilities. Or, negatively expressed, film is not laden with the grammar of other media. Another historical step in the development of the language of film was the change of the location, or of the space. One example for the change of different shots is "The Life of an American Fireman" by Porter. He took what we would call today documentary footage of the work of firemen, which had been shot by others a while before, and combined it with other material he shot himself of a young woman and a child in a burning house. The fire was extinguished by water that was sprayed maybe a year before and recorded then. Saving the woman with the child certainly is important, but I think what is more important about it is the new kine, the junction of different spaces or localities and also different times.

After that a lot of other steps followed, building up the narrative structures of film. Their framework mostly looks like this: scenes with low information kines from a , to a_n , and starting with b to b_n , c to c_n , etc. Not very much attention was paid to the kines with the higher load of information, that were included as the kines $a_n/b_1, b_n/c_1, c_n/d_1$, etc. Among the first who realized the importance of the opposition of two scenes that follow each other (al till a_n , opposed to b_1 till b_n , etc.) were Kuleshov, Pudovkin, and Eisenstein.

The associative montage principles of Eisenstein became well known as the montage of attractions. This meant, to give an example, that Eisenstein worked on the fusion of ideas that were drawn out of shot one (a_1 - a_n, b_1 - b_n) showing an animal and shot two showing a capitalist. The opposition of the content of the two whole scenes gave in this case the

ideological fusion, the information. This question: What does this scene mean to the next scene? Or, what do they mean together? was the basis for all montage theories that followed. Until now film theoreticians have concentrated their efforts around the montage, when they want to say something about the language of film. This viewpoint has been successful to some extent with narrative cinema, with overlaying literary contents. But when this content was not so obviously hiding the visual qualities; in other words, when the film itself was using its own medial possibilities, then this method of criticism failed.

The critics didn't even see, or pay attention to, such unexpected films. Extraordinary films like "Ballet Mecanique" by Fernand Leger didn't fit into the known and used categories of thinking on film. Leger didn't use film as a literary medium, he invented a great number of new kines, based on visual motion. It is typical of criticism that the one who works seriously to free the medium of its old limitations is put into an outsider position. One respected only the painter behind the work, but one didn't understand that he worked as a film-artist, or filmmaker. One who took the transition of the last frame of a scene, an, to the next frame, the first frame of the following scene, b1, seriously, was Kubelka in his film "Unsere Afrika Reise". An example that he pointed out is that you have the neck of a giraffe on frame an, and the rifle that is shooting the giraffe at the same angle on the same place on frame b1. In addition to the visual fusion of the places or positions in the frames you have the information of the junction of content, or the relation between the rifle and the giraffe. But most thinking on film concerns itself with the whole length of a shot as a unit.

If you want to get a direction out of film history, from Lumiere and Melies until the present-looking at films strictly from the standpoint of information theory, reflecting the increase in the transport of information between and within the shots-you'll get for the accumulation of information, a mounting asymptote. This concept corresponds to the general principle of progress that Buckminster Fuller called dymaxion, to get "a maximum of efficiency by a minimum of material or energy." I think that this principle, which Fuller used for industrial design, is also applicable to film. This principle is a constant in the development of civilization, to get more out of less. This becomes very clear if you think of the development of telephones, radios, TV, computers, etc. Fuller also developed the geodesic domes, of which you have one in Milwaukee. This afternoon I visited his artificial jungle, for which the problem was to use the least material on the surface to get the most light in for the plants, The transparent geodesic dome is the consequent solution.

Just compare the slowly streaming information in the epic films at the beginning of film history to those we understand today, or compare the television ads made 20 or 10 years ago to those we are used to today. Nowadays we are used to superimpositions, very small units of flickering frames, etc. For ads the problem is to have as much information on the product within the shortest time. In general the level of information is much higher than before. The trend you can conclude from this is "to transport a maximum of information within a minimum of kines." Film is a constantly transforming, living language, that we are learning, that we have to learn to perceive. The process of learning happens with film mostly subconsciously, by repetition. And so that's where we are. What can this mean? Where is that tendency leading to? That's why I think it wrong, when films are analyzed in film theory, to look only at this special point in a film, where the montage is. I say: every change from one frame to the next is a montage. But this statement won't make too much sense, firstly because the expression has been used too much for a different purpose, and secondly, because if film consists only of montages the expression becomes tautological, useless. So I call this small unit, the smallest element of filmic language, a kine, and maybe this term will be picked up. The difference between two frames determines the kine. Simplified, the time/space difference can increase from d0 (that means no obvious movement) over dmin used for the illusion of movement (a1, C2, a3), to dmax, (a/b/c) which can produce a fusion of forms or shapes, or, as I would call it, "gestaltspruenge". But it's not only right to say that the frame a fuses with

frame b, but also that frame b fuses with frame c, so you get rows of junctions or chains of information. I think that is so important that we should break for a minute.

(In the short intermission is a brief discussion on the possible influence of the Bauhaus with Mies van der Rohe on Fuller's concepts. There are questions on the composition of the kine before Nekes continues.)

Now I'll continue. In thinking of the efficiency of film to transport information I remembered the old English optical toy invented in 1826 by Fitton and Paris: the thaumatrope, which is a small disk made out of cardboard with two different drawings on each side, that gave the illusion of a third when it was twisted quickly around between the fingers. The bird was on the one side, the cage on the other, so the bird was seen sitting in the cage when they were viewed in quick succession. This thaumatropical effect is an example for me of how efficient the kines in a film can be. What an amount of information these two frames a/b give, compared with the a1/a2, which gives the illusion of movement! The perception of movement is always dependent on time segments, which can be understood very easily for film.

However, it is not so easy to understand the dependency of "gestaltspruenge" on segments of time. One pays attention to them normally only if they are small units. But if you think of greater time segments, you might produce "gestaltsprunge." The example I gave before of the Melies film was still a relatively small one. But if you add camera movement as one step and the location of the camera at a different place as the next step, this could make a huge difference. This difference could give the illusion of "a bird in the cage."

We mustn't forget that there is still a not obvious time/space relation, I deduce: there is always a time/space relation in a kine. The "gestaltsprunge" is nothing but a special form of movement, a widely stretched time/space distance. Parallel to the perception of such thaumatropical films, I recognize the demand of the French poet Guillaume Apollinaire: "Our intelligence has to accustom itself to understand in a synthetic-ideographical way, instead of in an analytical-discursive way." In this context one might also think of the possibilities of understanding that are given by Chinese ideographs. The collision of two signs produces a third on a different level, with a new meaning. The illusion produced by the kines in the head of the spectator is the imaginative content of film.

Yesterday, Dore and I were in Montreal and we happened to meet Norman McLaren, who has devoted his life to film. He is working, in his last film, on the question of what film is. I asked him, what do you think? What are movies? What are they able to do? His film intends to teach students what animation can be, or what movies can do. You might be interested to know his categories. He mentioned five, based on the principle that movies are able to transport movements. So the different categories of movements in a film according to McLaren are: first, constant movement; second, increasing movement; third, decreasing movement; fourth, still movement or standing pictures; and fifth, unpredictable movement. So, I want to ask you, is it true that we can relate everything which is happening in film to these five categories? Or can movies do something else? Another thing that is important for McLaren is the transport of emotion by the motion. That's why, in my opinion, he makes different categories of decreasing and increasing movements. But what has cinema to do with emotions?

For myself, I would say that increasing and decreasing motions are just the same category. The movements are predictable in the same way that they are in the categories of still movement or constant movement. When I say this, I compare it with the process of anticipating rows of numbers, like 1, 2, 3; one anticipates 4; or 61, 51, 41, one knows that 31 would follow; or after 3, 3, 3, follows another 3; or 1, 7, 3, 10, one knows that a 6 follows, etc. So you have regular or irregular, constant, decreasing or increasing rows. Maybe these categories work for McLaren because of his motion/emotion relation. As you have seen, I need only one description for all possible filmic information. The formula for a kine is:

$k = (a + 1) (x, y, t) - (a) (x, y, t)$. In words this means the linkage of the two frames (a+1) and (a) constitutes the filmic information, built on the differences of the three parameters of filmic information, or dimensions of the signals, the coordinates x, y of space and t, the coordinate of time.

If one wants to do film analysis seriously, and not just recount what one thinks the literary content of a film is, one would possibly use the help of cybernetics, where one finds models for the classification of kines, the forms of description of interrelations between fields of information. One can also imagine that we will have machines like potentiometers that will help us to measure the information energy of a kine, or of whole films. Information energy is caused by the "friction" of two frames. A spectator possibly could say, I wish to have this evening this amount of information energy.

Because of the research done in the syntactical area with the classifications of kines, the arrangements of the elements, one can become much more conscious of the possibly efficiency, the capacity, of a kine. Consequently this will influence the semantic level. New filmic thinking will be possible. And this is because, as we all know, our thinking is influenced by the grammar that we are using. The rules of the grammar determine what we can think. Because of this we invent artificial languages for thoughts that we cannot have in our normal communication processes. As Benjamin Lee Whorff wrote, again and again, the progress of thinking could be realized only "against" language or by changing language, or in the way that Philip Frank described Einstein's theory of the relativity of time as a reform in semantics.

Natural scientists, confronted by these new problems, realized that only new systems of logic could help them to continue. The basis of the logic of film language is the use of the small elements. We forget too easily that film, with its specific logic, is a relatively young language that we have learned with efforts which have been for our generation mostly subconscious. It was not self-evident for us to understand the combination of two shots, the relation between the shot showing somebody on a street looking up and the next showing somebody looking down out of a window, to see that there is a process of interaction between the two people. We have learned to understand this. Just remember the difficulty Bitzer and Griffith had when they shot for the first time in the "American angle." The producer said that the spectators never would understand why the actor is cut in half. Step after step followed till we have reached what we know today as film.

Connected to this, we shouldn't forget that most of those steps had been made against the power of the film industry. This institution devoted to satisfaction is not interested in developing anything; they are mostly trying to sell the same thing, the well-known entertainment, and not the effort, the participation of the intellect. Only because of the need for new fashions have some principles of so-called avant-garde films found their way into commercial cinema. Understanding eventually arose out of repetitive consuming. Digestion became knowing.

The industry still sells stories and sensations, not knowing that film mainly informs about itself, communicates itself. It is not the filmed subject that is transferred, but the image of the subject which is inherent in the possibilities of film language. Film expresses only itself, its own nature, and that is why it is so ideal for mirroring the strange game of the relations between things. The handling of the film material, the use of the kines, the levels of information, determine the effort the brain of the spectator has to make. And this effort is the message of the film.

This problem was already touched by an old Sumerian in 2000 B.C. when he complained on clay that there were no new stories that could be told, that could be invented, that every possible story has already been told and is known. Literary history provided us with many stories after this. But the importance of the stories was not their content, but the handling of this language-material, and the handling of this material reflected the new understanding of

the world. The organization of the material and the structure of the used elements influence the viewer.

This may touch on the problem of brutalization by gangster movies. A spectator who has learned that a film is something organized is not forced, like the other who has not had an aesthetic education, to identify with the gangster hero. As language is an expression of thinking, so is thinking also determined by the forms of language. The repetition of the same structure of narration in commercial cinema makes the viewer rigid in his thinking. For example, if you want to pass over a field of grass, you have statistically infinite possibilities of ways to do it, but you always use the same ways. The paths of our consciousness are trampled down. The neurons in the brain have to repeat and repeat the same work. In that sense, our perception is strengthened or weakened by the use of the language or by the habits of looking. The use of language is only one access to reality. There are as many realities as there are different systems of logic, or different grammars within languages.

If we ask ourselves what kind of reality is the reality of film language, we find various fields of information. The information in the fields can be described statistically. The information level is defined by the theory of probability. One important characterization of the kine is its ambiguity. The filmic information is a kind of Janus-head looking inside as well as outside. This means that if you have four frames a, b, c, d, the frames b and c build one kine, but b also forms a kine with frame a, and frame c forms a kine with frame d. If one thinks this over one might call the relations within a kine and its relations to other kines which form fields of information relations of uncertainty: uncertainty maybe in the sense that Heisenberg used it. The constant deception of perception is a function of time. The work or the capacity of the brain within time segments is dependent on the organ of sense. The kine stores two different time segments and the perception of a kine happens within one time segment, which is at the same time a part of a second time segment. If you associate the stored times of two frames with memory, which is a storage of time, the laziness of the perception of memory units produces imagination. Imagination becomes the illusion of a stored time which is fictitious. Imagination is a function of memory units. The collision of memory units produces imagination. By the way, this explains also why our imaginative faculty cannot produce something from elements that are not yet stored within us. What imagination can produce is the transformation of patterns of elements, the construction of new relations. The fascination of film can be explained by the analogy to the imaginative process of thinking.

The possible ambiguity of filmic information is connected to fields of kines which are organized in a thaumatropical way. The maximal differences could reflect relationships of uncertainty. A great number of illusions, or decisions that are contradictory, produce an indecision of mind which might lead to a new quality of film. To give you a simplified example of different illusions that contradict the perception of "reality": let's say one frame shows a chair, while on the next one you see a man in a sitting position. If you see this kine projected, you see the man sitting on the chair. What happens if you add to this kine another frame showing, in the same position as the chair, a couch? Then the frame with the man builds a new kine with the frame showing the couch. The fusion of the frames gives us the illusion that the man sits on the chair as well as on the couch. So it's quite uncertain what is happening, and that is what is called movies. (laughter)

Another conditioning influence which we should take into account is the influence of social perception, which I want to mention shortly. Even if we all see the same pictures, we all see different things. This happens always also in such simple films as Tarzan, or jungle movies, etc. If we were asked what we have seen, we can determine that we have seen different films within the one film. Our perception has selected what seemed to be more important to us. Besides this selectivity there is another well known example: if money is projected and the spectator is asked to estimate the size of the coin, the poor person will have estimated the size

to have been much bigger than the rich one. The social determinant produces different perceptions of the same object.

My next point leads into a philosophical field, and also into a very materialistic field. If you have two frames showing the same image, you would say there is no difference between them other than the time that they were shot or shown, That is not an obvious difference. There would be a distinction, however, because no two frames of film can ever be identical. That might sound a bit stupid or irrelevant, but it isn't. The grain is different in each picture-even if it shows the same object, it is not the same picture. This becomes obvious if you just take a tiny corner of a frame and blow it up to huge proportions, you'll see the movement of the grain, which is the carrier, the material the information is transported on. The grains are "written" in film nearly simultaneously; I'm not sure if there are differences in time related to the colors. Nevertheless "simultaneously" would be correct, compared with television, where the picture is written twice in a horizontal way. From left to right, line after line as a reflection of reading: the electronic book. I wonder why the Japanese do not build TV sets with vertical lines. Technically this could be done very easily. Maybe one day we will know how this Western electronic book influenced Japanese culture.

Concerning my definition of film, I would like to tell you about a movie I made in '67, and this may be more than an anecdote. At this time we had a room and another room under it for filmmaking, so it was a real underground room, or a wet cellar. I was cutting a film down there, hanging the film strips on the wall, and the wall wasn't dry. I had to leave my work for a period of traveling and came back two or three months later. The wall had become moldy. I put the film in the Moviscop and what happened? A Moviscop is a machine to edit films, to look at the pictures frame by frame. If I took one frame of that film, showing a normal scene with green grass and possibly Dore on the grass, and projected it, I saw the heat of the lamp making a movie, even though the frame was not moving. Within the gelatin of a filmstrip are different levels of emulsion like silver nitrate, etc., and what happened was that microbes in or on the celluloid started moving because of the heat. So these little microbes were carrying the green of the grass to the sky, or they carried the blue of the sky down to the earth, and naturally they were carrying Dore, too. So there was a lot of movement within a still frame. I made some screenings with those frame-films or one-frame-films. I called the films Standing Film/Moving Film which is the translation of Stehender Film/Bewegter Film. So I ask the question: can a single frame be a film? (laughter)

Earlier I used the expression "horizontal readability" of film. Let me explain what I understand by this. I use "horizontal" referring to the fusion within the kine in the time axis, However, there is also another fusion, the fusion of different levels within the material itself. I think of superimpositions. If you have one visual level, then in the next level, third, fourth, fifth, and so on, you can distinguish this fusion, which can be additive as well as subtractive. I call this vertical readability.

Horizontal readability is a process that happens in the brain of the spectator, whereas vertical readability is based on processes that have happened beforehand on the film material. So, that's a bit of general film theory, and some of that could be found in my films.

Question: Could you explain a little more about the difference between your notion of kine, and Kubelka's notion of shot to shot?

Nekes: She asked me about the difference between what Kubelka is doing and what I'm thinking. (laughter)

Question: That isn't what I said at all, but it's o.k.

Nekes: Kubelka, as I understood him, and we had a couple of talks on this problem when I invited him to give a lecture in Hamburg, worked precisely on the kine of montage an/b1, that the rifle and the neck of the giraffe fill the same shape on the frames. He calls this opposition the filmic articulation. He gave attention to the meaning of shot an-a1 in relation to the shot bn-b1. I called his use of the kine, respecting the shape of the objects at the montage, an

important step. As to what I am concerned with in my work, I have defined the kine as the basic unit of filmic language, and you find it not only at the end and beginning of a scene; you can, or have to, work on each difference between each of the frames. This constant articulation could give birth to a new cinema, that one could call, because of the speed of kines with high information levels, vibrating cinema. My first attempt in this direction was my film Spacecut, from '71, in which I used around 40,000 kines describing an archaeological dig. I made a Western for the eyes. I dug into the medium as the gold diggers had dug into the landscape. What I found was also a kind of gold; it meant visual gold to me,

As another example I want to give you the description of what I did in the last part of T-WO-MEN. It was shot in the following way:

1. Level of images	A X A X A X A X A X
2. Level of images	B B X X B B X X B B
3. Level of images	C C C X X X C C C X
4. Level of images	D D D D D X X X X X
sum of the levels	
(vertical fusions)	4 3 3 1 3 1 2 1 3 1
sum of the levels	7 6 4 4 4 3 3 4 4
(vertical and horizontal	
fusions of frames of the first 10 frames)	

(A,B,C,D, are exposed pictures; X means unexposed frames in shooting.)

This single-framing superimposition is part of what I would call vibrating film. But naturally this section is only one step to begin with. If one thinks of the possibilities this working method could provide, a new cinematographic language might be developed. However, this part of T-WO-MEN has the beauty of one of the first trains. That is also the reason why I was a bit angry yesterday about the insufficient bulb strength. You cannot see the different levels that well if you don't have a big screen and a very strong bulb. You lose the possibility of jumping between the different levels under poor light conditions. So, light is necessary for cinema. (laughter)

The subtitle of T-WO-MEN is "Whatever Happened Between the Pictures?" What happens between the pictures, that's what cinema is. Then I went on to ask, what happens within a picture? During the projection of one frame, normal cinematographic equipment for sound speed, at 24 frames per second, interrupts the light beam for the transportation of the frame and also interrupts the projection of every frame once with the shutter. So every frame is projected twice. This is done to avoid the frames flickering, The fusion of one frame with itself I wouldn't call a kine. I regard this as a constant of the technical transfer of filmic information. This difference, d_0 , corresponds to the two writings of a television picture, First the odd lines are written and then the even ones. The taking of the picture in television equals the reproduction/ projection of the picture. The process of scanning is the same. By the way, the taking of one frame with the movie camera is not interrupted by the shutter. But if I relate the question to the shooting of one frame in film: what happens within a picture? Or, what's the difference between a picture? That may sound a bit stupid, but it leads to an important point about the definition of photographic information. You see, I could take one frame out of any film and ask, what does this frame mean? What does this frame mean related to the time aspect? Every frame stores an amount of time. This is the time for making or filling, or not making or not filling the frame. But if we concentrate on the usual, it is the exposure time of a frame. This time is usually 1/50 of a second. With normal films we have become so used to this length that we forget too easily that this quantity is a very relative one. This relativity becomes clearer if one thinks that one frame, let's say of a Hollywood film, could be at the same time a film of one or two hours length, or, if the time process is reversed, that one frame could be exposed with the time span of one Hollywood film. (Ed. note: That would be true if

these Hollywood films were to carry multiple superimpositions, or to have "vertical readability," (If one frame is 1/24th of a second, and if we pack multiple images in that space, then we have changed the time by adding space.) When we see movies we are accustomed to think that we see something that has to do with what we would see if we were there. On the one hand this can be true to a degree, but on the other it should be remembered that cinema is a language or a tool designed to give a reflection, or an illusion, of reality: or, a tool that makes the invisible visible: a tool for the storage of visual information in time. When I said that one frame could be a movie of one or two hours length, I was referring to the storage of time. The time and the visual information which is stored in this one frame equals the amount of time in which a highly developed high speed camera can shoot a number of frames that need one or two hours projection time. The condition for this is naturally that you project both at the same speed. Possibly if we had only been accustomed to films made by very high speed cameras, normally shot films would appear to us as extremely long time exposures, as if the frames had been exposed for "years." The difficulty that photographers had when they invented photography was the low sensitivity of the material on which they exposed their pictures. They needed very long time exposures. They wanted the subject to remain still to avoid blur in the pictures. But what is wrong with this blur? Very quick motions we also perceive as blurs. That means: Our perception is dependent on time fragmentation. This is a biological constant of our organs of sight. Photography and film imitate the speed of perception by the organs. That imitation was achieved and even expanded by the technology of quick motion and slow motion. Because we are preconditioned by our senses, film has mainly neglected the storage of long time units in a frame. It is used mainly under poor light conditions. But because film is an artificial language, we don't have rules to obey. On the contrary, we should use all the possibilities of the medium. A point moved during the exposure of a frame becomes a line, a moved line becomes a plane, a moved plane suggests a space. I used the beauty of the blur in T-WO-MEN part 4. It is giving a different kind of information, movement related to time. I would like to make it a bit more complicated-I want to give you a filmic example. I organize a scene that I want to shoot. This scene lasts nine minutes. To shoot it at 24 frames per second I need roughly 10.000 frames. That equals nine minutes in projection time at 24 frames per second. Now I have made one film and I take this film away. I shoot the same scene again, but now with a high speed camera at 240 frames per second, which means 100,000 frames for nine minutes shooting. In projection this would be 90 minutes. When I now copy every tenth frame of this 90 minutes strip on a different roll, I'll get one roll with the pictures 1, 11, 21, 31, etc., a second roll with 2, 12, 22, etc. I'll have 10 different rolls with 10 different films. After all this, we have 11 different films which we can put on 11 projectors which all run at the same speed. What do they show? Do we see the same film? Do we see the differences between the films? After all this work we know that the films are different. But who can tell us that they are different? The spectator who could distinguish between the films would be a fly; because the fly can see 10 times quicker than we can. And that's also the reason why flies are always that bored when they sit on the television screen, because the transport of information is so slow. (laughter)

So we see that the effect that our films should have depends on the spectator. And we have to understand ourselves, too, as beginners learning the language of film. As I showed with the tendency of filmic history, we have already learned to speed up our capacity to receive information. And I'm sure that we have not yet reached our frontiers of perception at all. The most important barrier in perceiving such highly informative film is possibly our attitude towards new aesthetic products. In front of the new, the unpredicted, the spectator gets anxious and refuses to look at it. Nevertheless, what filmmaking did from the beginning was to speed up the transport of information. On a surface level one could say, oh, what fast pictures, but this isn't true, that's wrongly expressed. The differences between the frames are stretched, are wider. All frames are projected at the same constant speed of the projectors. I

don't want to distinguish now between different speeds in projection; that leads to another area that is also quite important to me. This was a rough survey of something important before going into special questions on individual films

Question: Suppose you have a kine, a sequence of two frames, and that same sequence recurs, suppose it's actually a closed loop-would the second time around be a different kine, or the same?

Nekes: If you call these two frames A and B and you make a loop with them, then you have A and B as a kine, followed by B and A, and so on. So there is a difference in the order of the frames. But I would say, to answer the question, that the kines are the same concerning the level of information. What would make a difference with the loop is first, that the repetition is a form of information, too. And this repetition of the information has to be regarded from the aspect of the spectator what work he has to do and how he could do it. He would perceive the same kines differently, in waves of concentration. The work of the brain would change although the pictures don't. If the information would be reduced after a while or become minimal, the brain would start a process which, in psychology, is called socialization. One sees things that aren't there, the attention is diffused. The time difference between the same information sources makes it different. That's why some say that there is no repetition possible when Gertrude Stein writes a rose is a rose is a rose .

What makes another difference is that the same information is mounted upon the same information on the same information on the same information, and this has its effect too. I know a comparable example from adventure novels about brainwashing. A part of the head is shaved and then drops of water fall on the head in regular intervals. One would start to realize that a drop of water is not a drop of water is not a drop of water-that this drop of water makes one crazy. For the same reason soldiers are not allowed to march over bridges. Because of the regular impulses, the bridge might break. Lovemaking to orgasm is possibly comparable to this effect. A hero in an Oscar Wilde story is so terrified by repetition that he says: If in the next year the grass is going to get green again, I'll kill myself. You know how he had to finish his life. To refer this to the perception of films, you cannot see, for example, jum-jum always with the same attention, at the same speed. I'm showing a repetitive movement: Dore on a swing, cut after every fourth frame, put into a contingent order. Two movements interfere with each other: the natural swing movement and the artificial jumping caused by the quick montage. The jumping is the effort the spectator has to do, to combine or to see the speed of the rhythm against the speed of the rhythm of the sound. One concentrates on this vibrating visual effect at first, then one isn't that concentrated any more and looks around on the screen and discovers other things. Then the concentration comes back, and so on. So the perception of the film changes, although I have seen it so many times. This kind of film requires a perception that is much more structurally oriented. If you would allow me the following metaphor for the levels of perception: I can walk through a country and perceive information, or I can fly over the same country. I see the country differently. By flying over the same country I recognize structures more easily. With this example I don't want to compare, to judge, the different qualities. I'm just saying that different levels of consciousness are touched. There is a constant relation between the perception of details and the perception of structures. Did that answer your question?

Question: What I'm asking is, is the kine simply a function of the frames and their sequence, so that if the same sequence recurs, it's the same kine? Or does it also depend on the location of that sequence of frames in the whole, so that if the same sequence of two recurs later it would be considered a different kine?

Nekes: Their meaning in relation to the context might become different. The kine itself is the same with regard to the level of filmic information that is transported. But naturally there is an influence on a kine by the information that surrounds it. It also depends on what is on the frame of a kine. If you have the row of frames a, b, c, a makes a juncture with b, and b fuses

with c. The kine a/b naturally influences also the perception of the kine b/c. The influence also depends on what can be seen in the frames. If there are black frames, for example, the influence lasts longer. One cannot perceive one information purely; there are more variables coming together.

Question: That seems to change the idea that the kine is defined simply by the two frames. Now you are saying that there are other factors that come into defining a single kine?

Nekes: The kine is defined by just two frames, but most movies don't exist out of two frames. You can separate a kine out of a row and define its filmic information, but at the same time this information has to be seen in context with the others that surround it; to judge the probability of its appearance, which in turn defines its innovative character. In films one would find sequences where the differences between the frames, in quality and character, are the same, so one would use a characterization for a number of kines. These similar characteristics will define the classifications of kines. And one would find classifications for groups of kines, because kines will appear in fields. One would find laws of appearances and so on, till one would have another grammar. As in field theory, you don't look only at one electron to describe it, because you cannot describe it only by itself; you have to see at the same time its relations to the others. Hence, you can describe the relation of the one kine to its field and the relation of this field to the other fields.

Question: Isn't there a limit to the spectator's potential proficiency in the language of film? Isn't there a limit to the number of differences that can be perceived if every frame is different? Hasn't the filmmaker to be concerned with the relation of a to d, and so on?

Question: I would like to ask the same question, displaced a little. Do you think that you are obliged to deal with repetition, with such an amount of information in each frame and each one between two frames? Do you think, as in the last part of T-WO-MEN, you are obliged to deal with repetition?

Nekes: We don't yet know the spectator's proficiency. There might be subjective limitations in perception, but as far as I see it, we are still far, far away from reaching the frontiers. I worked in this direction because my organ of perception, the eye, was offended, was bored by not having to work in other films. Its capacity needed to be exploited, some effort, some work to do. This visual perception was buried in other films by the transportation of literature. In perceiving vibrating films, most of the problems are probably caused by our expectations. As for the technique of looking, one can be a bit more tired in the beginning, but that's fine, that is a condition related to everything that needs concentration. If one is getting weary one normally tries to concentrate on the pictures by closing the eyelid a bit, for better focusing. I found out that this is wrong. It's much easier to leave the eyes wide open and just let the pictures stream into your brain. What can be seen? That is a very relevant question. I think that training improves perception. You see, when Jum-Jum was first shown in '67 nearly everybody told us that it was too quick, too stroboscopic. And at that time it was very quick for me, too. But this was refreshing for me. By now one is used to the speed, and even one kine is already a long time unit. Possibly television with its 625 lines will bring another acceleration. What happened with T-WO-MEN was that I approached some frontiers of cinematographic language by using the camera in a special way, but I realized that the standard camera was inappropriate for my purposes. Being at the frontier, I had to work with an older medium, photography, because I shot the frames like photos, combining them to the film. Similar processes occur in every medium; you have to go very far back if you want to progress. In television the most advanced programs are the movies. Television isn't yet using its own possibilities. By possibilities I mean the transportation of television information, the flow of pictures with electronic speed. Perhaps T-WOMEN parts 2 and 5 could have been produced much more adequately on video. By the way, there is no frame repeated in these parts. I achieved manually the same as what I could have achieved with the most perfect set

up of electronic equipment. My handwork has the charm of inaccuracy. For television dramaturgy it was an immense step in the '30s when they first shot a scene with one camera for each angle. Even now we know from our daily TV programs these three to five camera changes. My scenes could have been realized with a cluster of cameras which were programmed, with the finished film coming out of the programmed mixing-board. To describe the development once more: it started with one camera for all scenes, with the editing done afterwards; then, for example, three cameras for a scene with the editing done on the mixing board; then the last step in this line is doing the editing before shooting, by making a computer program for the change from one camera to the other; every camera records only a specific number of frames or single frames. To put it more succinctly: from one camera for a whole film to one camera for every single frame. Nowadays this sort of work in film is done by the special effects section in the laboratory, but this amount of work couldn't be done in the labs. They couldn't cope with it. The electronic medium is especially suitable for such possibilities. As for my work, I regret that there are no video research centers where one could explore such possibilities. But I think this development for video is just a question of time. The future filmmaker will make programs for camera setups. Animated filmmaking has already started to become computerized.

Question: Are the number of different levels that you see within a film infinite, or do you think that at one time people couldn't perceive Jum-Jum and now they are perceiving it because they are trained to it?

Nekes: I said that the ability to see has a lot to do with expectations. Because it was too new to some people, they were afraid, they didn't want to see it, they couldn't find a story in it. If you show such films to children, who aren't yet so distorted by culture, it is much easier for them. When I showed Spacecut, there was a three-year old girl, who was in a cinema for the first time in her life; after she had looked interested for a long while she asked her parents, "Isn't that where we were in Denmark on vacation?" After another while she found the folding chairs in the cinema more interesting. They were newer to her. So I think the difficulties result mainly from psychological reasons, but not from the actual difficulty of seeing what's on the screen. Referring to the question of the number of different levels: if they can be infinite, I would say yes, but this is a theoretical answer. For the first film of Diwan, which was called Sun-A-Mul which means in Gaelic "the land washed out by the sun" and which is the name of the small isle of the Outer Hebrides where I shot this film, I wanted to wash out the house with the people, the sand, grass, and sky, the recognizable image by light, by the number of levels, of superimpositions. I ended up with 16 different levels, but still you see a beautifully recognizable picture. I had to finish with this number, because film is not made to be run through a camera that often. The emulsion loosens, and because of this you have a lot of tiny particles in the camera that might, by scratching, destroy the images. I was also anxious because I'm doing everything myself in the camera and not in the lab, There one would be able to copy a number of films on one film and so on, till an infinite number or until one has reached white light from the additions. Or, because there are two ways of superimposing pictures with each other, the additive method and the subtractive method, till the picture is black: or the combination of the two printing methods,

Question: Isn't there a limitation on how much time the brain needs to receive an image?

Nekes: That is the speed of the light and the speed of the brain, but I guess that our brains work so much more quickly than the slow projector that we can forget it. A more important factor is that you need hours to see a projected taboo word, compared to the time that you need if you see something that you want to see, like your boyfriend,

Question: The idea that I'm extremely exhausted, is that psychological?

Nekes: That is not the intention, but possibly a transitory effect. If I have the choice of, let's say, perceiving the same information within 10 minutes or 10 hours, I would prefer the 10

minutes. As understanding gets more and more differentiated, so the medium and therefore the perception becomes more and more complex.

Question: I'm curious about your use of sound. Could you talk a bit about it?

Question: I have another question, We have been talking a lot now about the smallest structural principle of film, the kine...

Nekes: A kine cannot be a structural principle of film. It is the smallest element of filmic language.

Question: Then, when you have a 20-minute, or a 10 minute film, could you talk about the way you handle larger units? I don't know if this term fits your intentions, the kine being a unit, the smallest unit of what film is. Could you maybe talk a little bit about how films are built? Do you have larger units? If you come from linguistics, for instance, could you compare the kine to a phoneme? Would you have equivalents for morphemes, for syntax, and so forth?

Nekes: It's an analogy when I use the word "language" for film, and certainly one could find the equivalents for film of a phoneme, morpheme, sememe, up to a syntax as well. But for the moment I cannot give you exact definitions for them within a filmic grammar. Before using such classifications, before getting to more complex units, precise research is necessary. One might even be able to elaborate a generative grammar for film. But to register all possible visual thinking in film with rules includes the thought that there are deviations that are not legitimate in the language of film. This seems and will be possible for films in the tradition of narrative cinema as one understands the historic Hollywood film.

Compared to the written or spoken language, the language of film is so young that I think it too early to construct this tool of understanding, It would be senseless, because the deviations from the rules will be the modes of expression of tomorrow. On the contrary, our means of expression are so limited in the use of film by the film industry that we have to be much more concerned with the deviations from the known, if we are to understand film as something living. The classifications of the kines should not only include the kines that are already used, but also the more difficult ones, which one hasn't yet seen, which are theoretical for the moment. I was asked earlier this evening what I did in Makimono; I will tell you now what my work was. Makimono is a film about the unfolding of a continuously varying expression of the representation of a landscape. The whole film is made on one fixed location, using all possible camera axes from this fixed point. It shows what the camera is surrounded by, the landscape, houses, persons, etc. In the beginning of the film, the spectator is able to interpret what he sees as landscape, lake, trees, etc., but by stretching the differences of time and space between the frames, the kines continuously change in such a way that the impression of filmed reality becomes lost. The spectator isn't able to interpret the pictures with the help of codes which are conventionalized anymore. This is the challenge of the film to the spectator, to gradually reorganize his activity of perception and understanding of film. In that sense Makimono is an intervention against ritualized codes and patterns of understanding. By seeing the film, the work the spectator has to do becomes a criticism of cognition, or perception. The spectator is taken seriously by the film as the producer of sense. He has to work to understand, and he realizes that understanding is working.

The increasing dynamic is caused by the different use of the kines. They are arranged in various fields of differences, in superimpositions, two to four levels, fused waves of light in different lengths and amplitudes; different angles of the shots, different focal lengths; increasing movements around one center; movements and overlapping forms of movements like static, pan, circle pan, and circle wave-panning; single frame shots by continuously stretching the distances between the locations and working with the stretching of time differences between the shots to organized movements within single frames, long time exposures; single frame superimpositions. Generalizing one could have the impression that there is a development from filmed "reality" towards a "reality" which recalls modern

painting. This is done by evolving the capacities of the kines.

Question: Is the length of your films completely arbitrary?

Nekes: Not at all. It depends mostly on the nature of the film material itself, on the filmic processes I'm using, on the character of the laws of perception I'm working with. So I could answer for every film differently. What is also quite important in this context is the work the spectator has to do to perceive the pictures, the effort caused by the structural concept. This perceptual effort is part of, but not the only important message of the film. It can be changed by time factors, by attitudes, by the viewer himself. Films can lose their innovative qualities, which can be felt by the spectator as a kind of aggressiveness, as I described it with Jum-Jum in '67. But because of similar experiences spectators can have, this factor might disappear. Due to the accumulated visual experiences of spectators, this film has become more and more appreciated and its perception of the visual effect today has become more comparable to the perception of a work of art within its historic dimensions.

Question; I'd like to ask you a question that goes back to the previous model, and I'm changing the subject. The vertical reading, even on a movieola, seems very difficult if you have seven, or eight, or nine levels of superimposition, and it makes the task for the film critic at that point very, very difficult, if not impossible, unless the filmmaker has given you his notes.

Nekes: Naturally the notes might be helpful to the film critic, but then he could already do a kind of film analysis. But the notes are not necessary to perceive the film in an adequate way. As I said before, I know of the waves of concentration that interfere with the perception, and I have to pay attention to them when I'm working with a great number of different levels in different rhythms. The horizontal reading happens within waves of light in different lengths and amplitudes. In other words, I need a certain amount of redundance to transport my information. By the way, the Latin word "unda" in "redundance" means wave. For the process of perception I would say that one is able to see sometimes the whole picture with all the levels at the same time, and on the other hand the spectator has the possibility of jumping between the different levels. This is a process I would compare to looking at a newspaper page, when I jump from this line at the top to another one at the bottom, or to the wandering around in a painting between the different points of attraction.

Maybe one can see a parallel on another level in this to the selectivity of perception. When I handle film material in this way it is my aim to let the attention jump between the levels. This work of the spectator reflects an ambiguity of perception. Somewhere I've read that Chinese writers were able to write sentences that one could understand on seven different levels. This is something else, but does this not also happen when there was no intention to produce different understandings?

Question: I think that's something very important in the field, this circulation within the picture. For example, in the first part of Diwan, Sun-A-Mul, I chose a level that I could see. I chose one for the images, and then another one, and I think that's something which completely charges the laws of perception.

Nekes: I want to comment briefly on the use of sound. In jum-jum, because we have referred to it several times, we made the sound, this rhythmical sound, after making the pictures, the frames. The film starts after the title-the silent part before is my personal MGM lion and after the title there is a cut after every fourth frame, a visual segmentation of the swing movement. The units all have the same length. The small time intervals of the sound rhythm play around these time units of the pictures. If one now compares the work of the eye to the work of the ear, one finds out that the eyes tend to be lazy, they want to rest on the sound, and that's what makes you believe that it is synchronous. But it is not synchronous: the visual and acoustic rhythms are completely different from each other. And what I was interested in for the perception of these rhythms is the interference between the two of them-to let the eye see against the ear and let the ear hear against the artificial rhythm of the pictures. I like to speed

up the possibilities of looking. But after a while the accelerating capacity becomes lost, and I see it as synchronous again, and then the process repeats. That's another example of the waves of concentrated perception. And this is a reason why I need 10 minutes for the film. I must have some time during the film to be able to reach a couple of waves. I have chosen a similar relation between sound and picture for T-WO-MEN parts 2 and 5. That's where you have the kines with the high capacities, or thaumatropical effects, where the quick-rhythm sound gives this additional dimension to the perception.

Question: In Diwan, part 2 Alternatim, you use the sound in a different way, using high speed sound, very rapid images, and then continuing on very static images, and so you have a complete contradiction between sound and picture handling.

Nekes: By the way, "diwan" is a Persian word, that is used in Europe for an anthology of poems. "Alternatim" is a musical expression for two choruses singing alternately. I have chosen this expression for the extreme change from the nearly "standing pictures" to the sequences of the flickering images, showing a Greek castle on a small island where people brought their lepers in former times. The sound is a very simple one with a quick complicated rhythm, a kind of minimal music. It is not a speeded-up sound.

Question: You alternate two different kinds of shots: a very rapid one, and then a very static one, which has the same continuing sound. As a viewer I was very disturbed by the same sound continuing from the complicated images on to the frames with the minimal differences between them.

Nekes: It is a sequence of sound processes at slightly different speeds, and the speeds change the emphasis of the rhythm by getting to a synchronous point, in approaching it, in reaching it, in getting more distant from it. So it always seems to be the same sound, while it is the same sound material which is constantly transformed. This is partly a description of the sound material. In using this sound I was interested in its function in relation to the pictures. How does the sound influence the perception of the pictures? So you have on one side this accelerated vision with a maximum difference in the kines: one kine showing two different sides of the castle, two angles, etc., or on one frame a picture of the castle and the second frame black, or another kine where the space that one frame covers normally on the celluloid is stretched over the size of nearly two frames. This last one is done by opening or leaving away the pressure gate in the camera while shooting a single frame. This results in the film fluttering through the camera, and the film is exposed in this special way. On the other side you have these sequences with nearly no movement within the pictures, with minimal differences between the frames. You have these nice, bright pictures opposed to this flickering, quick picture rhythm. Your vision is speeded up and working as quickly as possible, and then this process is followed suddenly by nearly no visual effort. Because your brain is already sweating over the speed it has to work at, it cannot stop immediately, and so the brain keeps on running on the pictures where it could work slowly, on the minimal differences. It takes a while before the brain slows down again. And then the next quick part follows and the brain again needs quite a while till it re-accelerates. So you receive two different lines: on one side the effectiveness of vision, which the information of the film requires of the spectator, and on the other side the line demonstrating the retardation of perception which is a constant factor that all films have to take into consideration.

Question: I think you are playing on both levels-with the kines, and on another type of articulation with the sound, that permits the overlapping of the two sections, of the two different types of kines, which is a level that is beyond the level of kines.

Nekes: Sure; at the same time, when the static pictures appear and the visual perception tends to slow down there is the possibility, because of the overlapping sound, to accelerate the looking processes, because of the speed of the short time intervals. Although there is an obvious difference between the visual materials, one knows or experiences the illusionary

character of the flow of information. This flow has the same speed in both cases. This use of sound helps us to understand this. The effect of the sound is a kind of expanded perception. We see that there is a direct perceptual interrelation between the dimensions of the signals of the sound and the signals of the picture. One could say that each signal dimension influences the perception of all the other signal dimensions. And this happens not only on one perceptual level, within the kine of the picture or within the perception of the sound itself, but also within the fusion of the optical and acoustic perception. We have to regard the relation of each signal dimension towards the others within one kine and the relations towards the preceding and following kines.

These relations give information on the interrelated functions of the signals. Direct sound or lip-synch, for example, has a confirmational aspect-it stabilizes the perception of space/sound/time relations as an entity. Modified relations give us new topological entities. Since sound has such a lot of different functions, it can be used for so many purposes, we have to analyze the units and their interrelations to be able to work with useful classifications. A huge amount of work, if one wants to treat film seriously. Don't let us be anxious about this. It seems to be worthwhile.

Question: I think the stress has been theoretically on continuity, or gestalt, of the completion of a form, but to me, and I can see how this is true in the kine, in the example you gave, I was struck in many of your films by the paradigmatic, or what you call vertical breaks or vertical reading-for example, the horizon would shake when, within one frame, we expect the line of the horizon to remain straight. We are more shocked by the break in the horizon. We are not trying to make a straight horizon, but the gestalt doesn't work there.

Nekes: Are you talking of the horizon in T-WO-MEN?

Question: Yes. We perceive the break within the paradigmatic breaks. I think we can very well respond to syntagmatic breaks; that has been done in the normal history of the cinema. But I have never seen before a paradigmatic break, the horizon breaking the frame. And that I think is not a matter of continuity, but discontinuity.

Nekes: Continuity and discontinuity are just the two axes of filmic information. They are not opposing each other. What you call syntagmatic and paradigmatic breaks I called horizontal and vertical reading. Maybe my terms don't fit so well as the semiological ones. But I think your question is leading into the field: What does it mean to the spectator if I stretch the differences between two frames, between time and space? What does it mean to the spectator if I add up information on the paradigmatic level? This film surrounds us with a new sphere, with a new time/space relation, different than what we are normally in. And that's what cinema is; film is a tool to make something seeable that we cannot see normally, that we can think, that we wouldn't think normally. Usually cinema is used for illustrating what we normally see, an illusion of reality, but not what it could be: a new reality, providing us with new experiences. Cinema is a tool that can make the invisible visible. It is an extension, as a microscope is an extension. When you use it you see a lot of tiny things that you haven't been able to see before. This time/space analyzing instrument, film, might change our understanding of the time/space relations in the world. So we might ask ourselves, what might this means to us, or what might a broken horizon add to our intellectual horizon?