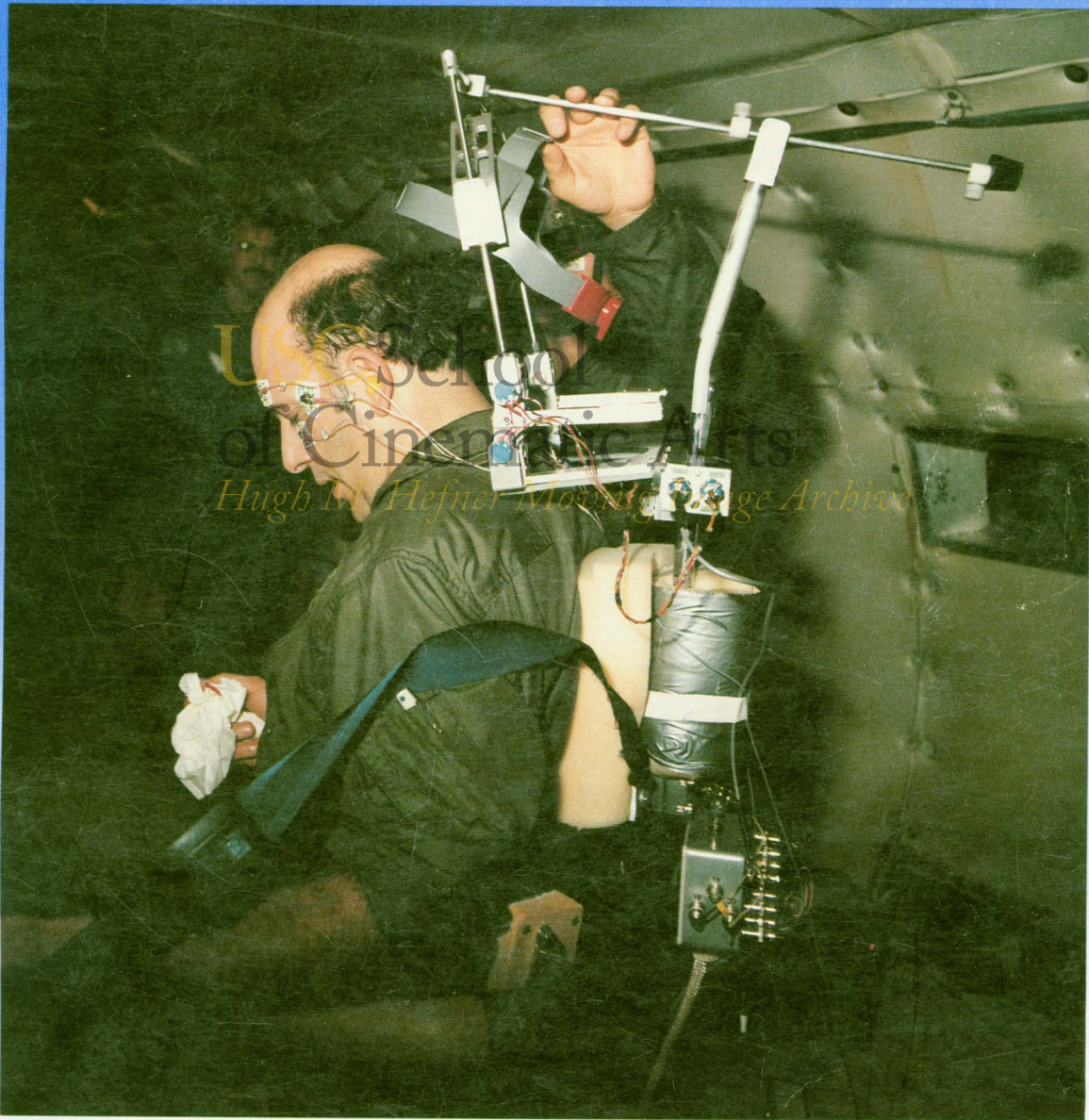


# PRESENCE

TELEOPERATORS AND VIRTUAL ENVIRONMENTS



University of Cincinnati  
Hugh Hefner Teleoperator Archive

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## **El Cine del Futuro: The Cinema of the Future**

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Pandemonium reigns supreme in the film industry. Every studio is hastily converting to its own "revolutionary" system—Cinerama, Colorama, Panoramic Screen, Cinemascope, Three-D, and Stereophonic Sound. A dozen marquee in Time Square are luring customers into the realm of a "sensational new experience."

Everywhere we see the "initiated" holding pencils before the winked eyes of the "uninitiated" explaining the mysteries of 3-D. The critics are lining up pro and con concluding their articles profoundly with "after all, it's the story that counts." Along with other filmgoers desiring orientation, I have been reading these articles and have sadly discovered that they reflect this confusion rather than illuminate it. It is apparent that the inability to cope with the problem stems from a refusal to adopt a wider frame of reference, and from a meager understanding of the place art has in life generally.

All living things engage, on a higher or lower level, in a continuous cycle of orientation and action. For example, an animal on a mountain ledge hears a rumbling sound and sees an avalanche of rocks descending on it. It cries with terror and makes a mighty leap to another ledge. Here in small is the essence of a process that in animals and man is so automatic—so rapid—as to seem one indivisible act. By careful introspection, however, men have been able to stop its rapid flow, bring it into the light of consciousness, and divide it into three basic phases. The first, observation (the noise and image of the boulders in our example), is the reception of isolated impressions or facts. The second, integration, is the combining of these isolated facts with the inner needs of the life force into an emotional unity that prompts and controls action (the animal's sensation of danger and terror). The third, action (the leap to safety), is a change in the creature's physical relation to the world.

With the forming of society, different men concentrated on one of these three phases, and by learning to cast the results of their labor into concrete forms (that could be passed from man to man, and generation to generation) they created science, art, and industry. These three have the same methods and aims in the social body as the mind, heart, and muscle do in individual man. Their goals are clear. For science it is to bestow the maximum knowledge on humanity. For art it is to digest this knowledge into the deeper realms of feeling, generating emotions of beauty and love that will guide the crude energies of mankind to constructive actions. And for industry it is act on the material world so as to procure more living energy for mankind. The success with which each field can approach its goal depends on its understanding of method. Science has come the closest because it has uncovered the individual's scientific thought processes and codified it into a clear and systematic method of experimentation. Consciously applying this method, it makes more discoveries in one year than previously were made in milleniums. Writing, international mail, and

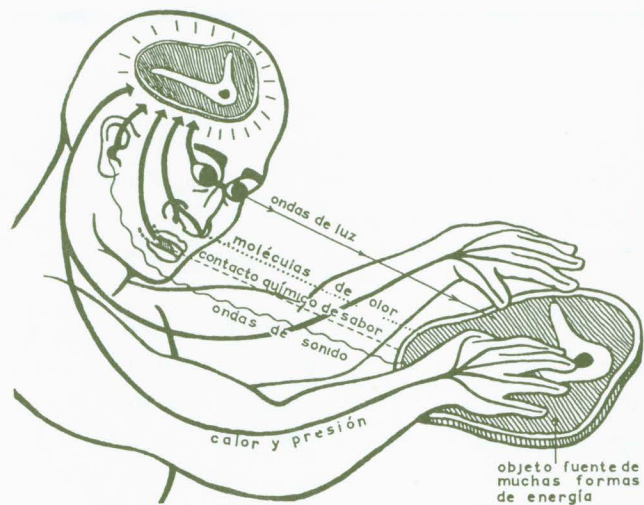


Figure 1. How we experience an object. See Appendix for translations.

international conferences have long been efficient ways of distributing its findings to humanity.

Industry, within the last one hundred years, has also made great strides toward its goal because production geniuses like Ford have rationalized it to the last degree. They have instigated assembly line, mass production techniques that pour out more food, machines, and fuels in one year than were produced in centuries. The problem of distributing its bulky goods has been solved theoretically and only awaits practical application.

It is the middle field, art, which today is furthest from its goal. The world is woefully barren of peaceful, tolerant, humanitarian feelings and the art that should create them. And this is because, as yet, art has evolved no clear-cut methodology to make it as efficient as science and industry in creating its product. Art is now struggling feverishly to achieve this, and only in the light of this struggle and the laws it seeks to establish, will we be able to understand the innovations that prompted this article.

The laws of art, like those of science and industry, lie hidden in the subconscious of man. When a primitive man desired to convey to another man the complete emotional texture of an experience that occurred to him he tried to reproduce, as closely as possible, the elements that generated his own emotions. His art was very simple, being limited to the means provided by his own

body. He used his voice to growl like the bear that attacked him, pumped his arms and legs to show how he climbed a tree, and then he blew on his listener's face to make him feel the hot breath of the bear. If he were a good storyteller, he would arrange these effects in more or less the same order they originally happened to him. Of course, his listener would feel everything more intensely if he, and not his friend, were attacked by the bear. But aside from being impossible, this is not advisable, for by listening to his friend's story, he can have all the excitement, learn all the lessons, without paying the price for them.

With time language became more complete. A specific word-sound became associated with the impressions, objects, and feelings in man's experience. Words were useful in conveying the general structure of an event to the mind, but could rarely quicken the listener's pulse the way fresh and direct contact with the original sense elements could—that is unless spoken by a very skilled narrator. And even then not a thousand of his choicest words could convey the sensation of yellow better than one glance at yellow, or high C better than listening for one second to high C. And so side by side with verbal language they evolved more direct forms of communication—painting, sculpture, song and dance. They found they could bore deeper into experience by concentrating all their powers of observation on one of nature's aspects and mastering the limited materials necessary to its expression.

Materials became more complex and techniques more refined as each art form sought to exploit the full range and delicacy of its own domain. The few lines scratched on a rock developed into the full glory of painting. The singing voice evolved into symphonic music and the few words into the rich fabric of poetry. For all the apparent variety of the art forms created, there is one thread uniting all of them. And that is man, with his particular organs of perception and action. For all their ingenuity, a race of blind men could never have evolved painting. Similarly, no matter how much they appreciated movement through their eyes a race of limbless men could never have developed dancing. Thus art is like a bridge connecting what man can do to what he can perceive.

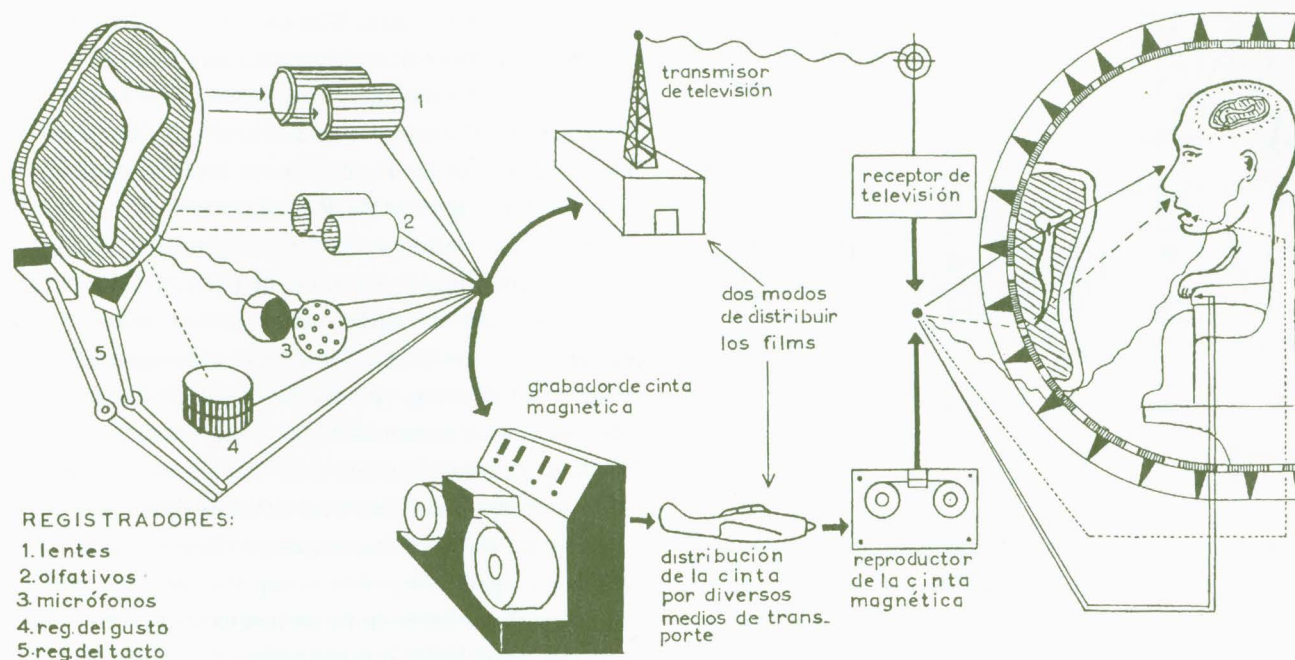


Figure 2. Immersive cinema of the future. See Appendix for translation.

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What we commonly refer to as the “pure arts” are those whose materials are so simple, so pliable that one artist can master them sufficiently to express his inner feelings to perfection. The painter fashions color, the musician notes, the poet words. Each additional impression of their artistic form is like an electric charge driving the spectator higher and higher to peaks of pure and intense feeling that he rarely experiences in his daily life. The simple materials of the pure arts are apprehensible through only one sense, but this sense is not a necessary condition of purity. Precision and subtlety of form achieved through *control* is the decisive factor.

Desiring to convey the full richness of experience in more lifelike form, men have combined the pure arts into forms known as the “combined” or “secondary arts,” such as opera, ballet, and theatre. Their effects were fuller, more spectacular, but rarely deeper. The essential factor of control was missing. Not only did the artist have to master visual, musical, choreographic, and verbal materials, not only did he have to limit the scope of his imagination to the practical limitations of a theatre and depend on the collaborations of dozens of singers,

painters, dancers, musicians, and actors, but even after he had masterminded every detail and rehearsed the cast into perfect form he had absolutely no way of fixing his creation so that it could remain exactly the same whenever and wherever played. This was an impasse the artist could never surmount and never did, until the arrival of a strange newcomer on the scene—the machine. The machine with its genius for tireless repetition and infinite exactitude was an extension of the limbs and will of man. It could be trusted to perform all his purely mechanical operations, freeing his energies for more creative tasks.

In the form of the printing press, lithograph, radio, phonograph, and now television, the machine has rapidly solved the second part of art’s age-old problem—distribution. Painting, poetry, music, drama, and ballet can now reach millions of people about the globe as they never could before. But the machine has done more. It has entered, as it has done in industry and science, into the very sphere of artistic creation itself providing the artist with a much wider palette of *sense* material and enabling him to mold them with precision into an aesthetic unity as he never could before. And it is the inva-

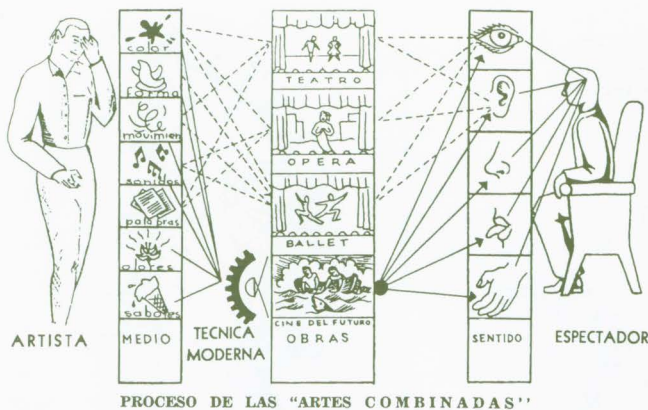


Figure 3. Artist and viewer. See Appendix for translation.

sion of such a relentlessly efficient and logical apparatus as the machine into the humane and heretofore romantic field of art, that not only suggests, but necessitates a clear, efficient, *methodology* of art.

If at this point we scan back over our very brief history of art forms it becomes apparent that the first law of such an artistic methodology must be: "The nature of man's art is fundamentally rooted in his peculiar psychic apparatus and is limited by the material means at his disposal." Logically, then a proper science of art should be devoted to the revelation of the laws of his psyche and the invention of better means.

Although very little of it was conscious or intentional, nothing demonstrates this research and invention more dramatically than the cinema. The sense was vision—the material, light. The still camera had been invented but it could do no more than a skilled painter could do with time. But when in 1888 the Lumiere Brothers set up a little box before their factory and cranked away at it as a group of workers left, they did something no human being could ever do before. They captured visual movement in a form that could exactly reproduce the moving image as often as desired. Only after countless millenniums of existence had man learned how to do what his visual mechanism can do with no effort at all. With time every part of this new machine, from the lens to the film stock, was improved. Lenses were made faster and given wider angles. The iris became adjustable and the film finer grained and faster. Always the criteria of invention were to reproduce as closely as possible man's miracu-

lous mechanism of vision. The addition of color was inevitable. Man sees color, so must his mechanical eye. Now we have the so-called "revolutionary" 3-D and Wide Screen. The excitement and confusion are great but they need not be. First, 3-D was invented over 50 years ago and shown at the Paris Exposition. Financial, not technical, considerations held it up until 1953. The really exciting thing is that these new devices have clearly and dramatically revealed to everyone what painting, photography, and cinema have been semiconsciously trying to do all along—portray in its full glory the visual world of man as perceived by the human eye.

Side by side with the invention of means to freeze visual movement, machines were developed that could (this also for the first time in human history) freeze sound. But again, the public's deep and natural urge for more complete realism in its art had to wait on the wheel of finance until 1933. It is the addition of sound that represents the really great "revolution" in the history of cinema. For with the addition of sound, cinema stepped irrevocably out of the domain of the "pure arts" into the camp of the "combined arts." Rather than attempting to portray the whole through the part, it now began attempting to portray the whole directly. But with this tremendous difference from all other composite arts—it could do it without losing *control* or *permanence*. With the help of the machine two radically different sense materials, light and sound, could be dynamically combined into one work without losing any of the control, subtlety, or concreteness formerly attained only by the pure arts. Cinema was no longer just a visual art (notwithstanding the effort of some directors to keep it such by shooting visual films and pouring the sound track over it like some pleasant, superfluous goo), but had set itself the task of expressing in all its variety and vitality the full consciousness of man.

Instead of continuing to stumble along this road with the system of hit and miss let us, according to our first law, deliberately turn to life and study the nature of man's consciousness.

Man's nervous system—sensory nerves, brain, and motor nerves—is the seat of his consciousness. The substance or component parts of this consciousness can be determined by the process of elimination. If a man lies

still, or due to some disease or drug, has his motor nerves blocked, his consciousness or wide-awakeness is not diminished in any way. If, however, he closes his eyes, it is. If he stops his ears, it is diminished further. If he pinches his nose and does not taste anything and avoids tactile impressions, his awakeness is diminished considerably. And if, as is done in anesthesia, all sensory nerves leading to the brain are blocked, he would lose consciousness completely. (Dreams and internal voices merely being sense impressions of former experiences stored away and served up later by memory.) Thus we can state our second law: "Consciousness is a composite of all the sense impressions conveyed to the brain by the sensory part of the nervous system which can be divided into the great receiving organs—the eyes, ears, nose, mouth, and skin."

By concentrating on one organ at a time, we can list the various elements affecting it. These are, for the eye, peripheral imagery— $180^\circ$  horizontal  $\times$   $150^\circ$  vertical, three dimensionality, color and movement; for the ear, pitch, volume, rhythm, sounds, words, and music; for the nose and mouth, odors and flavors; and for the skin, temperature, texture, and pressure. These divisions—although purely subjective and dependent on vocabulary and techniques of reproduction—are nonetheless useful for analysis.

These elements are the building bricks, which when united create the sensual form of man's consciousness and the science of art must devote itself to inventing techniques for recording and projecting them in their entirety. Celluloid film is a very crude and primitive means of recording light and is already being replaced by a combination television camera and magnetic tape recorder. Similarly, sound recording on film or plastic records is being replaced by tape recording.

Odors will be reduced to basic qualities the way color is into primary colors. The intensity of these will be recorded on magnetic tape, which in turn will control the release from vials into the theatre's air conditioning system. In time all of the above elements will be recorded, mixed, and projected electronically—a reel of the cinema of the future being a roll of magnetic tape with a separate track for each sense material. With these problems solved it is easy to imagine the cinema of the future.

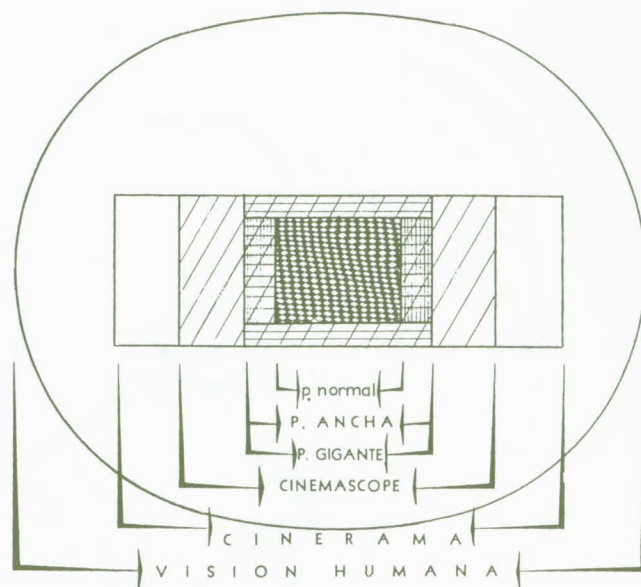
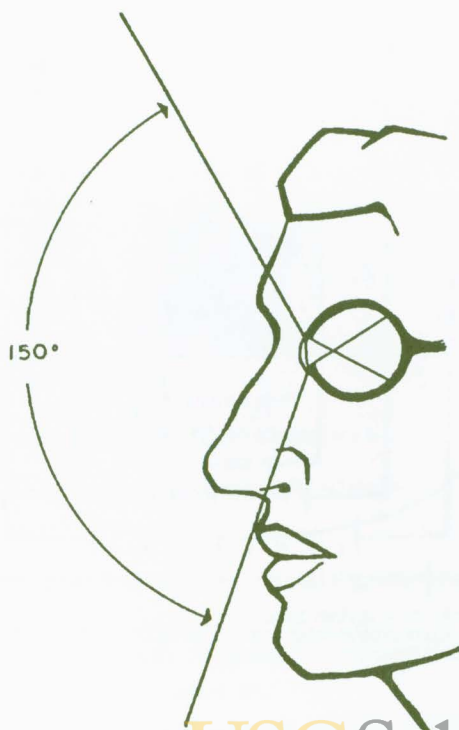


Figure 4. Comparative aspect ratios. See Appendix for translation.

Open your eyes, listen, smell, and feel—sense the world in all its magnificent colors, depth, sounds, odors, and textures—this is the cinema of the future!

The screen will not fill only 5% of your visual field as the local movie screen does, or the mere 7.5% of Wide Screen, or 18% of the "miracle mirror" screen of Cinemascope, or the 25% of Cinerama—but 100%. The screen will curve past the spectator's ears on both sides and beyond his sphere of vision above and below. In all the praise about the marvels of "peripheral vision," no one paused to state that the human eye has a vertical span of  $150^\circ$ <sup>1</sup> as well as a horizontal one of  $180^\circ$ . The vertical field is difficult, but by no means impossible, to provide. Planetariums have vertical peripheral vision and the cinema of the future will provide it along similar lines as shown in the accompanying drawing. This  $180^\circ \times 150^\circ$  oval will be filled with true and not illusory depth. Why? Because as demonstrated above this is another essential element of man's consciousness. Glasses, however, will not be necessary. Electronic and optical means will be devised to create illusory depth without them.

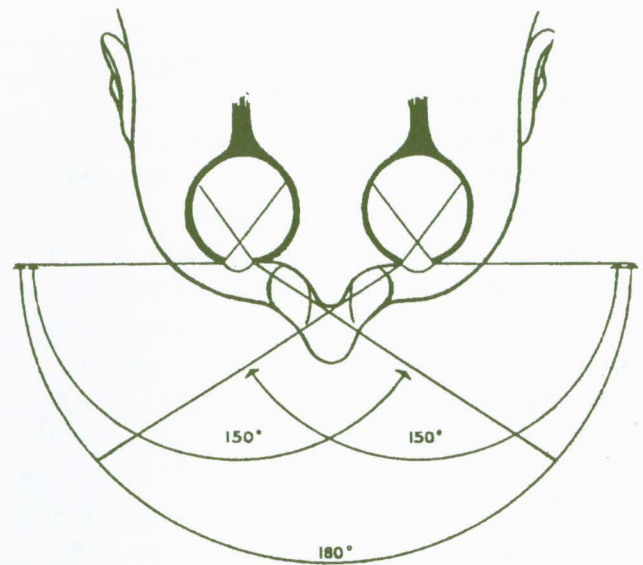
1. The nude eye actually has a vertical range of  $180^\circ$ , but this is reduced to approximately  $150^\circ$  by the brow and cheek of the head.



**ANGULO DE LA VISION VERTICAL.**

**Figure 5.** Vertical field of view. See Appendix for translation.

Cinemascope, despite all the raving of its publicity men that it is the “crowning glory” of motion picture development, represents one small step forward, and one big one backward. Its increase of screen image from 5 to 18% of man’s visual field is a definite improvement although there is still 82% to go. It has, however, regressed substantially in clarity. One reason that few critics noticed for Cinerama’s excellent illusion of reality is its extraordinary clarity. The human eye is one of the most perfect in the animal kingdom. It is not spotty, out-of-focus, or jumpy the way average movie images are. The image it records is limpid, razor-sharp, and solid as a rock, and Cinerama, by using three film strips instead of one, and specially designed projectors, makes a great advancement towards this perfection. Cinemascope, on the other hand, by still using only one film strip to cover two and one-half the normal screen area, is also magnifying grain, and softening the focus two and one-half times, making clarity much worse than it is on



**FILMANDO EN 3-D CINEMASFERA**

**Figure 6.** Horizontal field of view. See Appendix for translation.

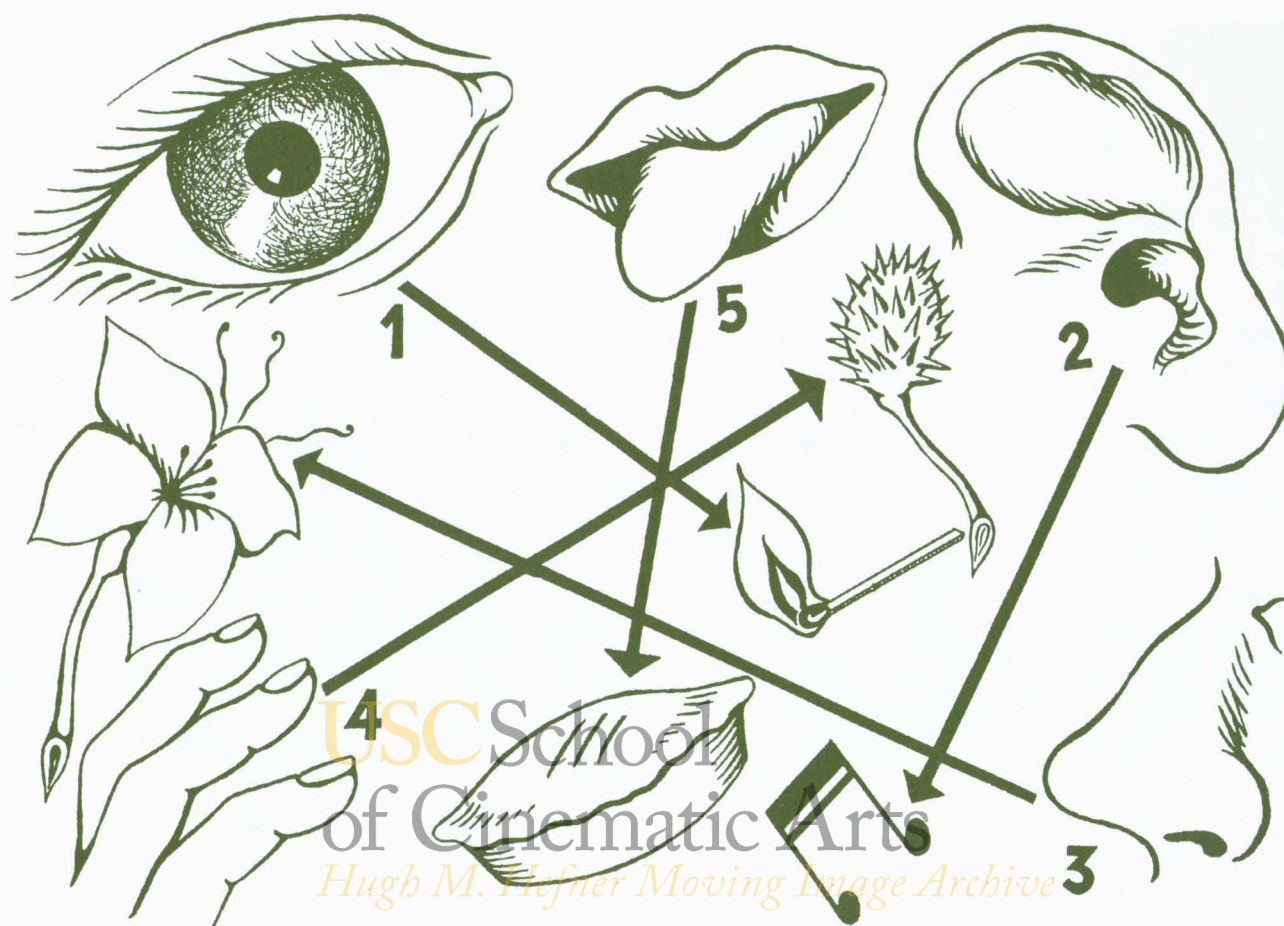
the normal screen.<sup>2</sup> The electrically created image of tomorrow’s film will be perfect in focus and stability—the grain and spots vanishing along with the film stock.

Stereophonic sound will be developed so that the spectator will be enclosed within a sphere, the walls of which will be saturated with dozens of speakers. Sounds will come from every direction—the sides, top, back and bottom—as they do in real life.

The large number of speakers will permit a much better identity of image and sound than is achieved now where the sound leaping from one distant speaker to another is either behind or ahead of the image. The air will be filled with odors and up to the point of discretion or aesthetic function we will feel changes of temperature and the texture of things. We will feel physically and mentally transported into a new world.

Yes, the cinema of the future will far surpass the “Feelies” of Aldous Huxley’s “Brave New World.” And like many other things in this book that are nightmarish because superficially understood, it will be a great new power, surpassing conventional art forms like a Rocket Ship outspeeds the horse and whose ability to destroy or

2. Vistavision by photographing first on a negative frame twice the original size before printing on to normal size positive has partially returned screen image to its usual sharpness.



## ORDEN EN QUE LOS SENTIDOS MONOPOLIZAN LA ATENCION

Figure 7. The order in which the senses focus attention.

build men's souls will depend purely on the people behind it.

The mastery of so many sense materials pose another problem—selection. People already complain about the excess of realism in films and say the new inventions shall plunge us from bad to worse. Although the spirit of their complaint is valid, their use of the word “realism” is not. “Realism,” or in aesthetic terms, “experience,” is that something which is created by the unity of the outer world with the inner. No matter how extensive the artist's means, he must use them to provoke more of the spectator's participation, not less. For without the active participation of the spectator there can be no transfer of *consciousness, no art*. Thus art is never “too” realistic. When either too much or too little is given, there just

isn't any “realism.” Poor use of cinema's remarkable new powers is no more of a case against them than daubing with oils is a case against painting.

It is estimated that each sense monopolizes man's attention in the following proportions:

Sight	70%
Hearing	20%
Smell	5%
Touch	4%
Taste	1%

Men can have their attention led for them as a bird will do by flying across an empty sky, or can willfully direct it as everyone does at the dinner table when singling one voice out of the maze of chatter. In each case the crite-



tion is “what is the point of greatest interest and significance to me?” Thousands of sense impressions stimulate the sensory nerves every second of the day, but only one or a few are permitted to enter the *realm of higher consciousness at a time*. The organ that screens them out is the brain. The brain is the storehouse—the memory of the physical and spiritual needs of the individual, and through him of the human race, and it is according to this criteria—“what is beneficial for the development of the individual and racial life force?” that a decision is made. We can now state the third law of our methodology of art: “The brain of man shifts rapidly from element to element within each sense and from sense to sense in the approximate proportion of sight, 70%; hearing, 20%; smell, 5%; touch, 4%; and taste, 1%, selecting one impression at a time according to the needs of individual and racial development.” These unite into the dynamic stream of sensations we call “consciousness.” The cinema of the future will be the first direct, complete and conscious application of this law. Since the conventional movie screen fills only 5% of the spectator’s field of vision, it automatically represents his point of visual attention and the director needs only to point his camera to control the point of attention. But with the invention of means to fill 100% of the spectator’s field of vision with sharp imagery, he must solve the problem of visual attention another way or lose his main aesthetic power.

Every capable artist has been able to draw men into the realm of a new experience by making (either consciously or subconsciously), a profound study of the way their attention shifts. Like a magician he learns to lead man’s attention with a line, a color, a gesture, or a sound. Many are the devices to control the spectator’s attention at the opera, ballet, and theatre. But the inability to eliminate the unessential is what loosens their electrifying grip on the attention of a spectator and causes them to remain secondary arts.

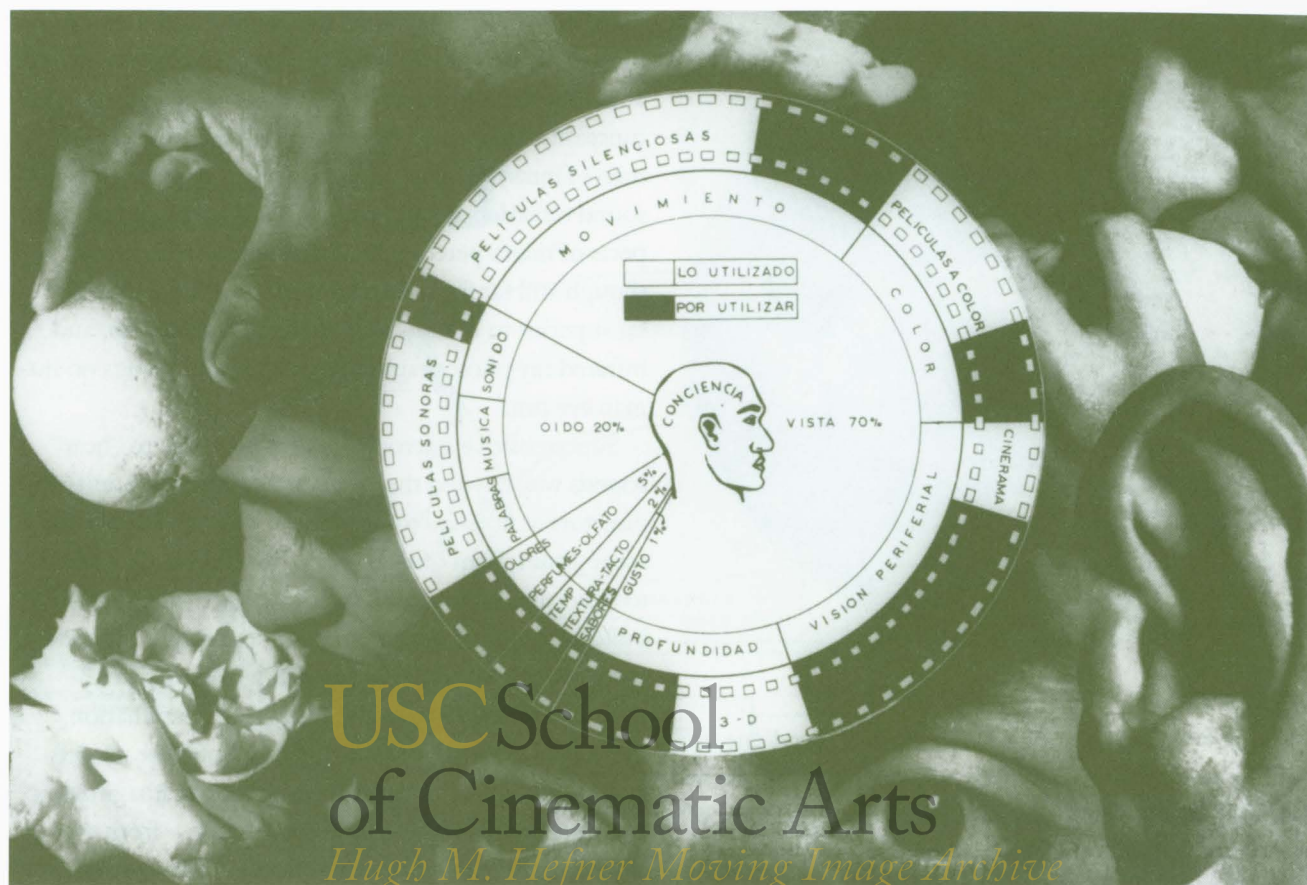
The evolution of the aesthetic form of cinema can, in a way, be described as a continuation of the artist’s struggle to master attention. Griffith began using the “close-up” to draw the spectator’s attention to a significant visual detail. Lenses with narrow focus fields were devised to throw foreground and background out of focus,

riveting the eye only on the sharp part of the image. Pudovkin developed the close-up in time by varying camera speeds to parallel the varying intensity of man’s observations. Eisenstein proclaimed “montage” and Griffith discovered “parallel cutting,” both magnificent weapons in the director’s arsenal of attention. Shots and scenes could now be shifted with the same freedom and rapidity possible in man’s natural observation or imagination. Sound arrived with undiminished intensity, but in time it too became refined in content, pitch, and volume, sometimes dominating the scene, sometimes leaving it completely, leading the ear as precisely as the eye. But like the search for an additional number of sense materials, the principle involved in this refinement of attention were mostly stumbled on by accident—rarely searched for deliberately, and never formulated consciously.

Again, the only place to search is in the mind of man. We must try to learn how man shifts his attention normally in any situation.

Suppose we are standing on a hilltop overlooking the countryside. First we are struck by the huge sweep of the view before us. Then we notice the vivid green of the fields and the sunshine. Then the silent expansion and rolling of a cumulous cloud entrances us. We feel a warm gust of wind and our nostrils dilate at the smell of new-mown hay. Suddenly, our ears sharpen as the shriek of a jet plane cuts the air. We cannot see it, but we linger on the way its high-tone lowers in pitch and fades away. Here is an example of how attention shifts from one element (space—color—then movement, in our example) within a single sense (the eye) and from one sense to another (the eye, the skin, the nose, the ear). In each moment it fixes itself, if for only an instant, on one sense element to the partial or complete exclusion of all others.

In life, only the object being observed is in focus. The area of focus is not necessarily rectangular, including everything in the same plane, as it is in today’s films, but can be circular, triangular, vertical, or horizontal depending on the shape of the objects of interest. Electrical and optical means will be developed to duplicate this flexibility, retaining the hazy frame of peripheral vision as the human eye does for added realism. Naturally, the great visual oval of the camera field will include, exclude, move closer, and recede as it does in life. This zone of



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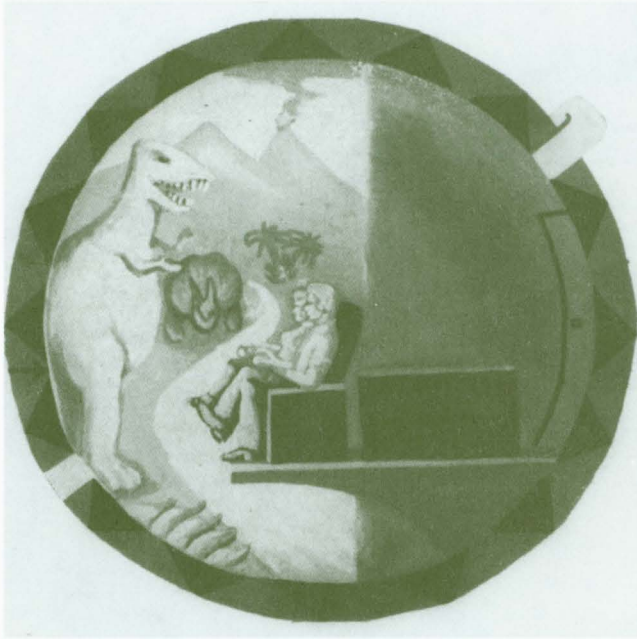
*Hugh M. Hefner Moving Image Archive*

focus will generally be at the center of the visual field, but it will be free to shift up and down, or around to the sides, leading the eye wherever it goes. The direction, quality, and intensity of all other sense elements will be controlled and pin-pointed in the same subtle manner.

Each basic sense will dominate the scene in roughly the same proportion we found them to have in man. That is, sight, 70%; sound, 20%; smell, 5%; touch, 4%; and taste, 1%. Nature turns them on and off without a whimper but filmmakers once in possession of a new power usually cling to it like a drowning man to a life raft. Eye irritating colors, ear deafening dialogue, and soul sickening music are loaded one on top of another just to "make sure the point gets across." The cinema of the future will turn any and all of it off, including the visual part, when the theme calls for it. For, and it cannot be stressed too strongly, the cinema of the future

will no longer be a "visual art," but an "art of consciousness."

When a great many sense materials are presented in sharp focus simultaneously the spectator must do his own selecting. He is no longer being led along by a work of art, but must begin with great fatigue to create his own patterns. This situation is so life-like, that it gives the spectator the sensation of being *physically* in the scene. For example, in Cinerama's famous roller coaster sequence, the spectator's body, not his soul, is riding the roller coaster. This is a tremendous faculty and will, I am sure, be used to great effect in the cinema of the future, but it must be used with great discretion. For aside from being very tiring, after one too many loops, the spectator may be so thoroughly convinced that he is shooting the chutes, as to throw up on the lady in front of him. As stated before, art is a specific technique for living vicari-



ously, of weeping without actually losing a loved one, of thrilling to the hunt without being mangled by a lion, in short of reaping the lessons and spiritual nourishment of experience without any loss. The solution of the problem of focus will invalidate the opinion that the wide screen is no good for "the intimate thing." If man can have intimate moments in life with his peripheral vision, stereophonic hearing, smell, and touch, so can his art.

It would seem from the preceding analysis that my conception of the function of the cinema of the future is to faithfully reproduce man's superficial and immediate perception of the world about him. Nothing could be further from the truth. The history of art demonstrates over and over again that some of the most valid experiences come from the inner and not the outer world. But the history, not only of art but any other human endeavor, also proves that the outer precedes the inner. The outer world supplies the raw materials of creation. Man cannot originate. He can only take the forces of nature and rearrange them into shapes more friendly to his own existence. Just as nature had to provide water, iron, fire, and the laws of thermodynamics before someone could invent the steam engine, so nature must supply man with raw impressions before he can fashion

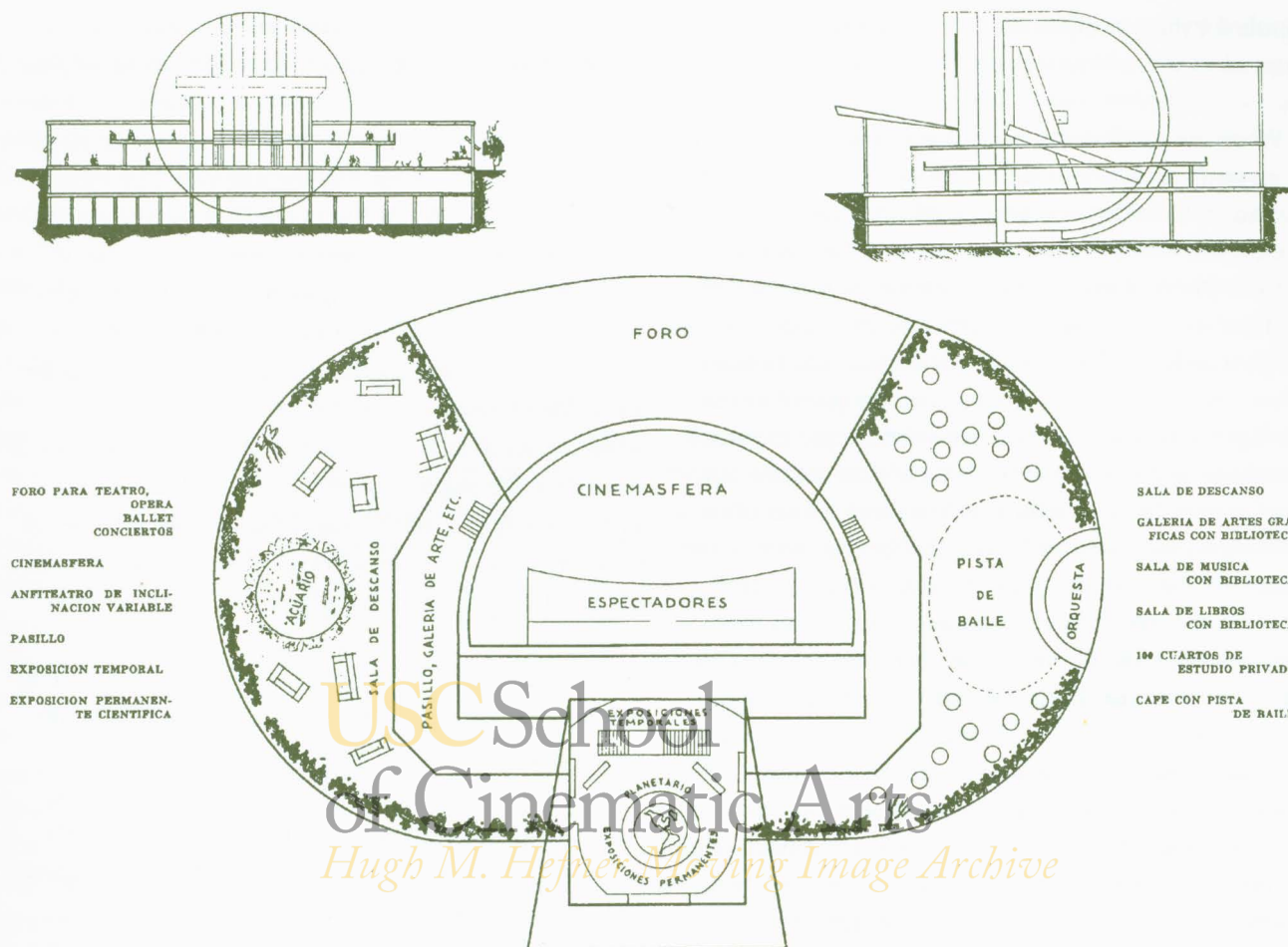
them into an imagery more meaningful and useful to himself. The first task of painting was to copy the world, and only when the camera relieved it of this mirror-like function, was it really free to explore the full range of man's fantasy. At first, motion picture cameras and sound recorders could not even capture the simplest aspects of man's perception of the outer world. Now, though still far from matching some of these, they are far superior to others. Slow motion, fast motion, and infrared ray photography are able to "see" things no human eye can.

Supersensitive microphones are now able to "hear" sounds way beyond the range of human ears. Similarly, directors at first had to be content with what the natural scene about them offered. Then, in studios, they began to select and arrange what went before the lens. By building sets, and developing trick photography, they could set the world of history and fantasy before the lens. Then by perfecting the technique of animation, they could do without bulky sets and intricate models entirely and give free reign to their wildest imagination.

Sound has followed a similar evolution—from the objective to the subjective world. First we recorded only natural sounds, or the sounds created by human voices and musical instruments. Then we invented a whole series of odd new sound-making instruments and set them about the microphone. Now people like Norman McLaren are dispensing with expensive instruments and microphones entirely and are creating sound never heard before by painting directly on the sound track.

These developments bring us to our fourth law: "In his creative process, man is imposed on by outer impressions. He learns the secrets of their basic principles through imitation and then subjects these to the needs of his own expression. He goes from reception to imitation to creation, i.e., from portraying the outer to portraying the inner world."

This law will inevitably hold true for the cinema of the future. While it still must learn to faithfully reproduce man's outer world as perceived in his consciousness, it will eventually learn to create totally new sense materials for each of the senses—shapes, movements, colors,



## C E N T R O C O M U N A L D E A R T E

Figure 8. Community arts center of the future. See Appendix for translation.

sounds, smells, and tastes—they have never known before, and to arrange them into forms of consciousness never before experienced by man in his contact with the outer world.

This transition from outer to inner brings us to the very important topic of content. The conspicuous absence of any discussion of content in recent articles is unquestionably due to the complete absence of significant content in the films themselves. Instead of berating this fact the articles have encouraged it with timid silence.

The words “form” and “content” are useful handles for manipulating the subject of art, but have absolutely no reflection in reality. Experience is one and indivisible.

What can be noticed, however, is that its character changes. It goes from an immediate and superficial perception of things determined predominantly by outer forces, to the more contemplative and penetrating conception of things determined mainly by man’s inner needs. Having dealt with “form” in this sense, let us turn to “content.”

The life of primitive man was a unity of perception, feeling, and action. His world was no larger than the one he could sense with his eyes, ears, and nose. It was easy for him to develop feelings about this world and to act on them. He saw an animal. His heart pounded at the thought of food and warm fur, and he killed it. Then, as stated before, in order to exploit his energy more effi-

ciently for the accomplishment of higher tasks, men organized society and gave birth to science, art, and industry.

When the witch doctors and magicians, the scientists of a primitive society living in fear of animals, told men that animal-like deities controlled the destiny of their lives, artists brought these concepts into the intimate, sensual sphere of everyone's perception by making paintings and statues of huge and terrifying animal deities. When man learned to conquer the animals and began to assert himself, the magicians said that the gods had the intelligence of man and the force of beasts and the artists then fashioned Gods with the head of man and the body of an animal, like the Sphinx. When the scientists of the Dark Ages, the priests, told man that he was made in the image of God, and was ruler of the earth and center of creation, the artist concretized these "truths" in a thousand paintings and statues of the divine image of man in the figure of Christ. In the fifteenth century men began to preach new "truths" and burned for it. Modern science was born. Nowhere could angels be found in heaven, but marvel after marvel could be found in the simplest things of earth. The saints and angels floating in the powder-puff heaven of medieval paintings gradually descended and began to walk the green earth. Soon, animals, architecture, trees, and objects of all sorts began filling the canvass around man. When Freud discovered the subconscious and Einstein and Bohr described the electrical nature of matter, artists pursued the new "realities" in the form of "abstract" painting. The history of art clearly establishes the fifth law of our methodology: "Art draws on science for its subject matter, shaping its cold and abstract findings into warm, sensual imagery that can be apprehended by any man, emotionally orienting him to the world and organizing his physical energy for constructive action."

When science and industry perfected their methodologies, the mind and body of social man became enormously extended. Science expanded the mind of man in several ways. It put him into trains, cars, submarines, and aeroplanes—whizzed him bodily around, above, and beneath the earth, filling his senses with a million new and dynamic impressions. It attached microscopes,

telescopes, microphones, thermometers, and scales to the senses of man, stretching their range a *thousand-fold*. Then, on conveyor belts of theory, it brought facts from the buried eons of history, from the center of the electron, and from the corners of the universe. The mind of modern man was flooded with a million new facts, not the stable, static facts of ancient science, but dynamic concepts in which everything—atoms, continents, empires, and galaxies—were in a constant flux of change. When the dazed and confused creature turned to his art for a clue of meaning, for a vision of harmony into which he could fit himself, he found only little patches of color or white pages covered with little black words. These were feeble, static images that did not even begin to embrace the concepts soaring in his brain to say nothing of relating them meaningfully. He turned away in despair.

Similarly, the body of social man has rapidly grown to manhood. It has driven its feet of coal and oil deep into the earth and bound the globe with arms of steel track. Food stuffs and machinery are flowing through the arteries of commerce from one corner of the earth to the other. But most of its action is eyeless. It grows in spurts and dashes and then grinds itself to bits. The miners, farmers, office workers, and sailors from one end of the earth to the other are making this great giant move without in any way seeing the results of their actions; consequently, they are incapable of controlling them. And so like some powerful giant whose mad brain is filled with brilliant, disconnected bits of information, society is heading down a path of phenomenal destruction and suicide. Science has given us an atomic mind and industry an atomic body, but we have no atomic hearts.

The modern technology that created this problem is the only one that can solve it. It is no accident that the movies were invented or have enjoyed such a meteoric success. For only a dynamic medium could give sensual shape and meaning to the dynamic concepts inhabiting the modern mind, and illuminate the consequence of modern action that extends so far beyond the normal range of man's senses.

Needless to say Hollywood has done practically noth-

ing to consciously fill this need. It has made cowboy films and gangster films by the thousands, but nothing about the scientific or social realities of our times. It has translated nineteenth-century literature and theatre into film, but has refused to go to the source of art, science, and become an independently creative art. Recently, science fiction has arrived on the screen, but in the perverted guise of crude propaganda. If anything the new scientific outlook should serve to unite men, not divide them. Scientific, documentary and impressionistic shorts are the true germs of tomorrow's films. They are ridiculed and rarely given any screen time by the big companies, but they will grow in length and depth into the cinema of the future. Of the new films Cinerama's "Trip Around the World" and the "Sea Around Us" are the biggest step in this direction and their enthusiastic reception by the public is proof of the vitality of these themes. The cast of tomorrow's film will be plants, animals, elements, man, and the stars, and the story will not be man's war on his own complexes, as in literature, or man's war with man as in theater, but man as a united family struggling against ignorance and the indifference of nature. And then, on a bridge of art that is modern and scientific, man will again span the gap between knowledge and action, establishing the sanity and unity of living he left behind at simpler levels of his civilization. Since most discussions about the new film developments sooner or later bring in television, let me end this essay on the last point of consumption.

There is no more contest between cinema and television than between music and radio—they are completely different things. Cinema is a product—television, one of its means of distribution. What contest there is, is between a film and a "live" show, as product, and the cinema, theatre, and television as means of distribution. Even here no one or the other will win out, for they each fill completely different functions. When timeliness, unpredictability, and audience participation are of the essence as in news, sports events, and quiz shows, etc., the "live" show is in its element. When the object is to develop an exact theme by integrating a wide variety of elements and scenes taken from all over the world, or created in the animation studio, that is, art, *control* is of

the essence, and cinema, with its ability to record and rerecord elements from every source and mix them together with precision, is by far the best and in most instances the *only way*. Actually, because of the control advantages of film, most of TV's "live" shows are done on film with audience reaction dubbed in. The howling antagonism between the television industry and movie industry is one of ownership, not of product. Whether a film be made by Metro Goldwyn Mayer or CBS, or projected in a theatre or on television, it is still a film, as far as the public is concerned.

By producing wide vision, 3-D stereophonic films the theatre owners of the movie industry are trying to capitalize on the limitations of television's small black and white screen and single speaker. These limitations are only temporary. The TV unit of the future will project the same 100% vision 3-D, color, stereophonic sound, smell, touch, image that the theatre will. This, however, does not spell doom for the neighborhood movie house.

Man is not only a "rational animal" but a "social animal," as well, and just as he still gets dressed up and goes to a concert hall to hear music he could hear on the radio, he will continue to go to the neighborhood movies to see the same film he could see at home on TV.

Men feel restless, cooped up in their homes, and desire to go places and see people. Thus, in the future there will be two distinct forms for consuming the cinema of the future—individual and social, but with this distinction from today's individual and social consumption—each will consciously stress its own advantages. For individual consumption, quiet, uninterrupted concentration and freedom of selection are essential. As a result, the television set will no longer be right in the middle of the living room where telephones, doorbells, and visitors can shatter the spectator's concentration. Homes in the future will contain a windowless, soundproof sphere with one or several seats suspended in the center. Films will be recorded on tape and sold for popular prices for private collection the way records are today. By simple manual control the listener will tune in on a TV station or select a film from his tape library and absorb it in uninterrupted contemplation.

The theatre will provide for the full exercise of the

social instincts. It will incorporate a promenade and cafe around the theatre proper. The film will not be presented as "entertainment" but as an evening of community culture. A speaker will review the personalities in, and history of the film being viewed. After the performance the audience will criticize the film in a discussion facilitated by television relays and led by a moderator. The audience will be able to continue the discussion in the cafe-lounge or on the promenade where they can see, be seen, and enjoy the evening in a thoroughly social

fashion. Thus, individually and collectively, by thoroughly applying the methodology of art, the cinema of the future will become the first art form to reveal the new scientific world to man in the full sensual vividness and dynamic vitality of his consciousness.

#### **Acknowledgments**

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**USC School**  
**of Cinematic Arts**  
*Hugh M. Hefner Moving Image Archive*

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**Appendix.** *Translation of Figure Labels*


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Spanish	English
	How we experience an object
ondas de luz	Light rays
moléculas de olor	Odor molecules
contacto químico de sabor	Taste receptors
ondas de sonido	Sound waves
calor y presión	Head and pressure
objeto fuente de muchas formas de energía	The object: source of many forms of energy
	Immersive cinema of the future
El proceso cinemáscopico de principio a fin	<i>Cinemáscopico</i> process from beginning to end
Registradores	Sensors
1. lentes	1. Lenses
2. olfativos	2. Olfactory
3. micrófonos	3. Microphones
4. reg. del gusto	4. Taste sensors
5. reg. del tacto	5. Tactile sensors
grabador de cinta magnética	Magnetic tape player
distribución de la cinta por diversos medios de transporte	Distribution by conventional means of transportation
transmisor de televisión	Television transmitter
dos modos de distribuir los films	Two modalities for transmitting films
receptor de televisión	Television receiver
reproductor de la cinta magnética	Magnetic tape player
	Horizontal field of view
Filmando en 3-D cinemáscopico	Filming in 3-D <i>cinemáscopico</i>
	Vertical field of view
Angulo de la vision vertical	Vertical angle of vision
	Comparative aspect ratios
p. normal	Normal
p. ancha	Wide screen
p. gigante	Giant screen
cinemascope	Cinemascope
cinerama	Cinerama
vision humana	Human vision

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**Appendix.** *Translation of Figure Labels (continued)*

Spanish	English
	Artist and viewer
artista	Artist
espectador	Viewer
medio	Modalities
color	Color
forma	Shape
movimien	Movement
sonidos	Sound
palabras	Words
olores	Odor
sabores	Taste
obras	Performances
cine del futuro	Movies of the future
ballet	Ballet
opera	Opera
teatro	Theater
sentido	Sense modalities
proceso de las "artes combinadas"	Process of the combined arts
	Community arts center of the future
centro comunal de arte	Community arts center
foro para teatro, opera, ballet, conciertos	Waiting room for theater, ballet, and concerts
anfiteatro de inclinacion variable	Theater with variable slope
pasillo	Hallway
exposicion temporal	Temporary exhibit
exposicion permanente cientifica	Permanent scientific exhibit
sala de descanso	Rest area
acuario	Fountain and fish pool
pasillo, galeria de arte	Hallway, art exhibit
foro	Entrance
planetario	Model of earth
espectadores	Viewers
pista de baile	Dance floor
orquesta	Bandstand
galeria de artes graficas con biblioteca	Graphic arts gallery with library
sala de musica con biblioteca	Music room with library
sala de libros con biblioteca	Reading room with library
cuartos de estudio privado	Private study rooms
cafe con pista de baile	Cafe with dance floor