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## Stereo Vision and the Imaginary Man : The Influence of 3D Technology on the Experience of the Film Viewer

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Kultura Popularna nr 4 (38), 94-101

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2013

Artykuł został zdigitalizowany i opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej [bazhum.muzhp.pl](http://bazhum.muzhp.pl), gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

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Piotr Fortuna

# Stereo Vision and

# The Imaginary Man

## *The Influence of 3D Technology on the Experiences of the Film Viewer*

As emphasized by Edgar Morin, cinema and photography are the main residues of magical thinking in the age of rationalism. In this context, the expansion of 3D technology appears as a continuation of the process of disenchantment of the world. It is an attempt to remove the relics of the “magic of the cinema” by introducing a “visual stereotype” (Baudrillard, 2005: 113), to replace the play of the imagination with an accurate reproduction of the visible reality. This way, the technological core – as one would say, quoting Leszek Kołakowski – is gaining an advantage over the mythical one (Kołakowski, 2001). But what is repressed returns in a new form, restored at the level of presentation by means of fantasy characters and uncanny landscapes, in the faces of the Na’vi and woods of Pandora. It is so because the “imaginary life” is an inseparable element of the human condition (Sartre, 2004), and at the same time the fundamental principle of the cinema.

The reference to Morin’s reflections may supplement the numerous discussions on stereo vision with anthropological context, discarding the popular arguments “for” (producers’ profits) and “against” (spectators’ headaches). Today it is considered obvious that films such as *Avatar* or *Gravity* should be made in 3D technology, unlike intimate dramas such as *Doubt* or *Revolutionary Road*. The key argument is related to the field of production: only Hollywood pictures which represent the most spectacular genres have sufficient budgets to afford such luxury. On the other hand, the introduction of the third dimension is not necessarily an improvement, which can be proved by the numerous opinions of dissatisfied viewers and critics. In my article I would like to create an interpretative framework for various reception experiences – both delight and disappointment – thus disregarding the economic context (even if the mass use of stereo vision in recent years has been a response to the economic crisis, just like in the case of most technical innovations in the history of the cinema, Morin, 2005: 151). My intention is not to lend support to any of the sides of the dispute; instead I wish to consider the possible consequences of a further increase in the popularity of this technology.

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## Framework of Analysis: *The Cinema, or the Imaginary Man* by Edgar Morin

In his canonical essay of 1956 Edgar Morin argues that cinema is the field of a struggle between two forces, contradictory but at the same time operating together. The first of them is rationalism, manifested in striving to reproduce reality objectively, and the other is emotionality, showing us the world from the angle of imagination. Marey’s chronophotographic gun may be regarded as the prefiguration of the first tendency, whereas the magic lantern or Reynaud’s Optical Theatre, of the latter (Morin, 1985: 18). The cinema, however, is neither a scientific instrument nor a child’s toy. It is – as Morin seems to be arguing – a combination of the two, because its essence involves a constant oscillation between objectivity and subjectivity, between the external world and the imagination, between scientific accuracy and magical thinking. These contradictory elements serve the same purpose: actuating the projection-identification process. A faithful record of forms enhances the realism of figments of the imagination, and the emotions aroused by cinema increase the belief in phantoms presented on the screen. What can be the role of 3D technology in this complex interplay, in which viewers’ engagement is at stake?

Morin did not attach great importance to this issue, perhaps because the mid-1950s was the moment of a move away from the three-dimensional image after just a few years of interest on the part of viewers. With a kind of contempt he indicated that objects presented in stereo vision “are not convex; they still remain ... patches of light and shadow” (Morin, 1985: 144). Undoubtedly, in this way he wanted to emphasize the origin of illusion (indeed, in 3D cinema, the illusion of three dimensions is not evoked by solid items but by two overlapping patches of light). We can also treat this critical opinion as proof of the drawbacks of the stereoscopic image of that time, which did not give the impression of spatiality, at its best resembling a system of paper planes set in greater or lesser proximity to the viewer.

In another part of his book Morin formulates the thesis that “the subjective increase [of image’s value] is a function of its objectivity” (Morin, 1985: 32)<sup>1</sup>. There is no doubt that the use of stereo vision is aimed at making the reception of a film more similar to the perception of the external world, from which one might easily draw the conclusion that 3D technology intensifies the emotional participation of the viewer. I think, however, that the issue is much more complex, and requires careful re-interpretation in the light of the entirety of Morin’s considerations – contrary to some claims of the author but in agreement with the spirit of his dissertation.

## Limitations and Possibilities

The key element of that anthropological interpretation of the cinema is the category of the double, possibly “the only truly universal human myth” (Morin, 1985: 33). This is what Edward Burnett Tylor, one of the pioneers of anthropology, writes about the double:

When the sleeper awakens from a dream, he believes he has really somehow been away, or that other people have come to him. As it is well known by experience that men’s bodies do not go on these excursions, the natural explanation is that every man’s living self or soul is his phantom or image, which can go out of his body and see and be seen itself in dreams. Even waking men in broad daylight sometimes see these human phantoms, in what are called visions or hallucinations. They are further led to believe that the soul does not die with the body, but lives on after quitting it, for although a man may be dead and buried, his phantom figure continues to appear to the survivors in dreams and visions. That men have such unsubstantial images belonging to them is familiar in other ways to the savage philosopher, who has watched their reflections in still water, or their shadows following them about, fading out of sight to reappear presently somewhere else, while sometimes for a moment he has seen their living breath as a faint cloud, vanishing though one can feel that it is still there. Here then in few words is the savage and barbaric theory of souls,

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<sup>1</sup> All citations from Morin’s book translated by the autor.

where life, mind, breath, shadow, reflection, dream, vision, come together and account for one another in some such vague confused way as satisfies the untaught reasoner (Tylor, 1960:203).

According to Morin, the double is an image giving an external form to the greatest human desires, especially the desire for immortality. It occurs in the projection process, when a person puts his or her mental states into an external image. Therefore, it is both subjective and objective, identical to the person and independent of them – it is the “*ego alter*, the other me”. Usually, it assumes the form of a shadow or reflection; it also appears in dreams and hallucinations, and – finally – it leaves the body in the night and after death, when it becomes an apparition (Morin, 1985: 33–38). This immaterial visibility, the insubstantial presence of the double is the manifestation of its affiliation to a distinct, higher reality which we cannot access.

In the era of rationalism the myth of the double has disappeared, but its remains can still be found in children’s plays, folklore and the occult (Morin, 1985: 36). First of all, however, it still functions in cinema and photography under the cover of aesthetic experience. As Morin claims, black and white film was an ideal substitute for the double, combining the magic of shadow with the magic of reflection, even more perfect because it supplemented the wonderful properties of photography with the element of movement.

A photo is a physical picture, yet richly endowed with mental characteristics. If such properties managed to stick to photography so easily, it was mainly because the nature of a photographic image oscillates between reflection and shadow (Morin, 1985: 38–39).

Along with the popularization of color film, the cinema lost part of its emotional potential, as it no longer had at its disposal the shadow, which beforehand had been substantial and metaphysical in character – it created, absorbed and permeated the film world (Morin, 1985: 43–45). As a result of introducing color, the cinema began to “evoke greater awe but lost its charm” (Morin, 1985: 45).

I believe that an analogous change occurs in the case of stereo vision, which – through the removal of the reflection plane – deprives the film of another quality of the double. This happens because in stereoscopic cinema the boundary between the two, previously disproportionate realities disappears. Thus, the fields of the real and the surreal are reduced to the common denominator: they are subjected to equalization in a three-dimensional space. As a result, our spontaneous attitude to the film character changes too. It is no longer an *ego alter*, “the other me” in a dream or in the spirit world, it is just “the other”.

The introduction of stereo vision is, then, not a mere cosmetic change involving the improvement in the quality of film image. On the contrary: we face here a serious interference in the fundamental mechanisms of the cinema. It is so because the institution of the cinema assumes special conditions of projection, whose aim is to separate us from what – following Maurice Merleau-Ponty – one could call the first-person or bodily experience of peripersonal space (in contrast to the third-person or visual experience of the objective space, Merleau-Ponty, 2005). They include, first of all, darkening the room and immobilizing the viewer in a chair, which result in the limitation of tactile stimuli and motoric experiences. In the cinema, the viewer’s attention should

concentrate on visual impressions, since it is with eyesight that we experience our body “in the third person”, seeing it as an “object among other objects” (Merleau-Ponty, 2005: 241). Then it is easier for us to forget our corporality and the space around us – and in this way leave our physical shell in order to transform into an immaterial double ready to move to the surreal sphere (actually, to another dimension). Then, just as in a dream, we can look at ourselves “from outside”, drawing pleasure from the substitute satisfaction of our desires.

The “*gimmick shot*”, so typical of 3D cinema, is probably the greatest threat to a receptive situation constructed in this manner. A butterfly flying right in front of us or a rock speeding towards us instantaneously remind us of the body we have just left in the cinema chair, stimulating it to respond and making us ready to act. They violently enter the sphere which was to be cut off. As Sartre says, “at contact with reality, our imaginary me shatters and disappears, ceding its place to the real me” (Sartre, 2004:146). In fact, we are affected in the same way by the effects typical of 4D cinema (e.g. moving chairs or water sprays), and to a certain extent, even by eating or drinking during the show.

In the field of aesthetics, the concept of the double corresponds to the concept of the photogenic. Explaining what the photogenic is, Morin points out that the films by the Lumière brothers presented ordinary situations, well-known to the viewers from their own lives. People came to the shows not in order to see reality but to see the image of it (Morin, 1985: 22–23). Eventually, the photogenic enriches reality as a result of film reproduction; it reveals in the visible world what is invisible to the eye, and is able to “create picturesqueness in things which are not picturesque at all” (Morin, 1985: 23). Hence, the necessary condition for the photogenic to occur is the difference between the perception of reality and a film image. In other words, the appearance of the world must be transformed, only then can the previously hidden properties be revealed. This is why the camera should operate selectively, highlighting certain features and ignoring others. A black and white film emphasizes the value which usually disappears in a feast of color, thus revealing the abundance of shapes and textures. A color film disregards depth in favor of a color patch. Only three-dimensional cinema tries to preserve all properties of the visible reality.

Yet, the greater the resemblance to the real world, the lower the symbolic potential (Dovey, Giddings, Grant, Kelly, Lister, 2009: 132). In this regard, stereoscopic cinema resembles *trompe-l'oeil*, a painting technique which avoided any abstraction so as to deceive the viewer about the nature of the picture. A picture conveying as much information as a non-mediated image leads to conventional attitudes taken from everyday life (Markiewicz, Przybysz, 2007: 115). It moves us to fictitious reality in a physical rather than an emotional sense, directly and personally rather than through the double. Here, immersion is more important than emotional participation; kinaesthesia more important than coenaesthesia. The free play of impressions and emotions, typical of a dream, is replaced by the orientation at activity. This, obviously, is a problem since, contrary to appearances, we have no possibility to influence the world seen on the screen. In extreme cases this may result in boredom or frustration of the audience. Consequently, three-dimensional image would work much better in the case of computer games or simulators. It should also be useful in disaster or horror films, genres in which the only thing a viewer would like to do is hide, freeze and strive to survive.

The comparison of stereo vision to *trompe l'oeil* reveals one more aspect of the issue. Depriving the pictures of symbolic potential, both techniques offer

something in exchange: admiration for the proficiency in creating the illusion. This is a pleasure of another kind, of a meta-perceptive character. The magic of the cinema disappears, giving way to magical tricks. In this rationalistic version of magic, the distance, awareness of illusion and the resulting disbelief in the show determine the viewer's satisfaction.

Jean Baudrillard writes that a three-dimensional image is the multiplication of a realist stereotype (Baudrillard, 2005: 113), inhibiting the viewer's imagination. He claims that stereoscopic cinema aims at creating the perfect illusion, one which does not allow for any creative activity of the viewer.

An image is precisely an abstraction of the world ... removing a dimension from the real world and therefore inaugurating the power of illusion. Virtuality, on the contrary, by making us enter the image, by recreating a realist image in three dimensions ... destroys this illusion ... tends towards perfect illusion, a recreative ... illusion (Baudrillard, 2005: 113–114).

Hence, the advantage of image over reality lies in the fact that it leaves an empty space which we can fill in with our own ideas. This is confirmed by the fundamental findings of perception psychologists. The difference between impressions received by the retina of the left and the right eye is only one of the indicators which make it possible for us to perceive the third dimension (Gibson, 1950: 72). On the other hand, it is the most basic indicator, determined by the anatomy of the visual organ and, contrary to many other ways of perceiving depth, occurring independently of our knowledge or experience. If we do not have two-eye vision, we need to use other, parastereoscopic indicators of depth. Then the phenomenon of perceptual constancy based on the knowledge of shapes and sizes of the seen objects gains a particular significance (Jankowski, 2007: 68). According to Ernst Gombrich, the perception of two-dimensional pictures is based on our experiences and expectations (Gombrich, 1981: 257). That is why 2D cinema actuates the resources of our memory, activates the imagination and improves projection processes.

In the case of most shows – provided that they represent the kinds of objects that are known to us – non-stereoscopic indicators of depth allow us to recognize the presented space. What is more, the impression of depth in such cases is irresistible (to the extent that reducing the picture to a flat surface of canvas was challenging for avant-garde painters, including Pablo Picasso and Jackson Pollock as the most representative examples). From this point of view, stereo vision seems to be a useless addition to a film image. Two-eye vision serves an important role in practical life, conditioning the precise determination of distance (Gibson, 1950: 6–7), but during a cinema projection it complements the picture with redundant information, unnecessarily engaging the limited resources of our attention (Markiewicz, 2007: 114).

At the same time, constantly bombarding viewers with sensory stimuli becomes a necessity. Due to its inherent lack of a photogenic, 3D cinema is doomed to reproducing the “picturesque” elements of reality – not necessarily beautiful, but having some immanent aesthetic qualities and thus capable of arousing our interest not only on the screen. All kinds of fantasy visions, realized thanks to the film set and costumes or digital effects, are particularly predestined for this. On the one hand, they introduce the lost dimension of uncanniness, and on the other, their irrational character is compensated with

the increased realism of the film form. For a contrast: a scene of a conversation taking place in a typical office is not suitable material for 3D cinema. Its indisputable realism does not require any additional confirmation; conversely, it needs an emotional component which can be provided by a two-dimensional transposition of the picture. The only exception might be when the film makers want to achieve the impression of unbearable boredom, which could, e.g. constitute a contrasting background for the subsequent dazzling sequences (such a functional effect was achieved, though unintentionally, by the makers of *Alice in Wonderland 3D*). To sum up, wherever the aim is to stimulate the senses, to show spectacular actions, beautiful or repugnant views, stereo vision seems to be a good solution. It will not help to create the mood in an atmospheric drama or poetic film, but it will work well in a disaster film or a fantasy production. It will evoke greater awe but at the expense of charm.

## Doubts

The cinema guarantees us the sense of realism not due to similarity to the real world it represents but thanks to employing audio-visual codes which we accept as the signs of what is real (Dovey, 2009: 132). They are historically determined and in this sense, incidental, even if they cover more and more properties typical of the way we perceive non-processed reality. For example, today, realistic cinema uses color and sound, although a few decades ago it did perfectly well without these components (Morin, 1985: 142).

While any similarity to the visible reality is a condition necessary to obtain the realism of presentations, the level of the similarity is determined by cultural factors. The components of the realistic audio-visual code cannot freely assume any form, as they are dependent not only on habits deeply rooted in the community, but also on the physical properties of our sensory apparatus (Jankowski, 2007: 96). The cinema might have been monochromatic, but can't have been multi-colored in a way contrary to our perception of reality.

Initially, films were black-and-white and silent, but still they struck the contemporary viewers with their realism. Color cinema was not an anthropological necessity but a technological novelty designed to draw viewers in at a time of crisis (Morin, 2005: 151). Color on the screen was only "a luxury of perception" but, as Edgar Morin observes, "any luxury, taking root, becomes a need" (Morin, 2005: 143). Similarly, today the third dimension is a response to film studios' rather than viewers' needs, but in the future it may become one of the conditions of film realism.

Today, three-dimensional cinema is hyper-realistic and thus anticipates our expectations towards a motion picture. That is why the impact of stereo vision is spectacular in character, and arouses awe with its intensity, providing a strong stimulus to unaccustomed viewers. The power of 3D effects is very likely to weaken gradually, ultimately leading to stereo vision becoming a neutral component of the film image. Today nobody runs away from a train speeding across the screen, like in the popular stories about the first shows by the Lumière brothers. At the same time, a film without the third dimension may in the future seem incomplete and direct our attention to the medium itself. Similarly, a black and white image is not transparent to us the way it was to the viewers of a few decades ago. Its application does not go unnoticed; it is always a meaningful operation (for example, it may be a means of archaization, referring to the time when color in the cinema was a rarity).

The breakthrough does not have to occur by means of the cinema: other media, such as 3D television, may also irreparably affect our perception standards. It may occur that, contrary to James Cameron's expectations, the potential choice between 2D and 3D image will not be fully free (Cameron, 2008). After all, realism of visual codes does not depend on the will of a single user.

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