

Indeterminacy and realism in cinema and art

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This paper will address two moments in cinematic history: a shot that occurs in Robert Wiene's avant-garde production of THE CABINET OF DR CALIGARI (1920) and the attempt by the main protagonist in Antonioni's BLOW-UP (1966) to discern a phantom figure in a blurry section of a photograph. Both are examples of what I term 'visual indeterminacy', where images resist easy or deny immediate interpretation. Visual indeterminacy is in fact quite a common perceptual phenomenon. Although not very widely studied in science it has been recognized for centuries by visual artists and writers. I will discuss the phenomena of visual indeterminacy, its perceptual basis, and its wider implications for our understanding of how we see the world. In particular, I will note the impact of indeterminacy on our notion of the 'real' by looking at the work of the artist Gerhard Richter, whose images veer between the mechanically and expressionistically abstract to the photographic. Richter's declaration that works of art should defy easy interpretation will be considered in relation to a wider modernist preoccupation with indeterminate meaning.

Introduction

Historically, we have tended to accept a distinction between reality and imagination, with the 'real' world perceived as being 'out there' and the imaginary world of the mind being thought of as 'in here', in the head. However, neuroscientific evidence gathered over recent decades has shown that areas of the brain involved in the direct perception of objects in the world overlap with areas of the brain involved in visualising or imagining objects.¹ In other words, as far as the brain is concerned, there are no separate compartments for dealing with reality and the imaginary; in many ways they are treated as the same. This finding may have significant implications for how we understand the relationship between the mind and the world, and in this paper I want to explore some of them through a consideration of art and cinema.

¹ Miyashita, Yasushi (1995). How the brain creates imagery: Projection to primary visual cortex. *Science*, 268, 1719-1720; Ishai, Almit & Sagi, Dov (1995). Common mechanisms of visual imagery and perception. *Science*, 268, 1772-1774.

As an art student in the 1980s I was watching *THE CABINET OF DR CALIGARI* (1920)², a masterpiece of German avant-garde Expressionist cinema noted for its stylised visual appearance. Towards the end of the film there is a prolonged still of a hand-written letter followed by a wipe to the next scene. At this moment I experienced something that profoundly impressed me. Despite the screen being full of clearly delineated forms I was momentarily lost, unable to recognise what I was seeing. Some two seconds later — as a human figure rose from a bending posture — a wave of recognition overcame me, even though the image had changed only marginally. Figure 1 shows two frames from this sequence, the left hand image shows the point of non-recognition and the right image shows the point of recognition. I remember the intervening period being marked by a mild sense of panic, mixed with a brief euphoria. I had seen the world in a way that was at once detailed yet devoid of distinguishable objects.

[Insert Figure 1]

Figure 1. Two frames from *THE CABINET OF DR CALIGARI*. Photographed by the author.

As a young man in 1895 the artist Wassily Kandinsky saw one of Claude Monet's luminous haystack series in a Moscow gallery. Unable to recognise what was depicted, he later recounted:

And suddenly for the first time I saw a picture. That it was a haystack [or rather, a grain stack], the catalogue informed me. I didn't recognise it ... And I noticed with surprise and confusion that the picture not only gripped me, but impressed itself ineradicably upon my memory. Painting took on a fairy-tale power and splendour. And, albeit unconsciously, objects were discredited as an essential element within the picture.³

A similar experience is recounted in a well-known passage from his *Reminiscences* when he returned to his studio at dusk and was astonished to see: "...an indescribably beautiful

² *THE CABINET OF DR CALIGARI* (dir.) Robert Wiene, Germany, 1920.

³ Parsons, Thomas and Gale, Iain. 1992. *Post-impressionism, the rise of modern art 1880–1920*. London: Studio editions. p. 255.

picture, pervaded by an inner glow" standing against the wall.⁴ In it he could discern "only forms and colours" and no comprehensible objects. It was in fact one of his own paintings turned upside down, which he had failed to recognize. Kandinsky had realised the potential of objectless images to evoke a remarkable perceptual response. He subsequently spent many years refining a visual language through which this insight could be expressed.

Seeing and knowing

In these cases where the automatic connection between what is seen and what is known is lost the experience can be more than mildly confusing, it can be revelatory. Within the frame of the screen or within the frame of a painting one expects to know what is depicted. Either that or the image is immediately classified as abstract, in which case there is no such expectation. But when the habitual act of recognition is temporarily suspended it is as if a gaping hole opens up the centre of one's conceptual fabric. The representation no longer represents, and all one's perceptual resources are poured in to try and plug the gap, to restore the familiar continuity of the semantic fabric. For me, and apparently for Kandinsky, such moments reveal a possibility of a world quite different from the one we ordinarily inhabit; a world still visually rich but at the same time objectless. I have called this phenomenon 'visual indeterminacy.' Here is an example of a visually indeterminate image commonly known as the Cow Illusion.

[Insert Figure 2]

Figure 2. The Cow Illusion.

Most people I show this to fail to recognise what is being depicted at first. If you don't recognise the object immediately your mind is probably sifting through various possible alternatives, trying to match the perceptual input with appropriate conceptual knowledge derived from stored memories and associations. Once the cow is recognised, it is thereafter very hard to see the picture in any other way; from then on the 'top down' conceptual information in the brain determines how we interpret the 'bottom up' perceptual information arriving from our visual sensations.

⁴ Lindsay, Kenneth and Vergo, Peter. 1982. *Kandinsky: Complete Writings on Art*. London: Faber and Faber. p. 369-370.

The phenomenon of visual indeterminacy demonstrates how fragile our perceptual grip on the world can be. What normally appears to us as a world full of solidly self-existing objects can suddenly evaporate into unsettling uncertainty if the link between perception and recognition is interrupted. I want to suggest that the fact that we can occasionally glimpse an objectless world tells us something about the nature of that world itself: that objects as we are used to experiencing them are not 'out there' in a form we directly access. Instead, our perceptual systems have to do work to make objects appear to us — a fact vividly revealed when those perceptual processes stumble or fail. Looking at an object, and being consciously aware of what we see, requires not simply that we passively register a pre-given external reality but that we actively construct an impression from the cues presented to us through the senses — a construction that is interpretative, necessarily incomplete, and vulnerable to error.

Making indeterminate art

This problematic link between what we see and what exists in the world has fascinated me as an artist for many years. Since the experience I described when watching the *THE CABINET OF DR CALIGARI* I have trying in one way or another to replicate the visually indeterminate experience I had then by making images that induce the same effect. Starting with film and photography, then working with computer generated images and digital collage, and finally with drawing and painting, I have attempted to make images that hover on the boundary between seeing and knowing, between being objectless and object-full. This has not been easy. To make an image that convinces a viewer there is something there to be seen while at the same time denying any opportunity to recognise what that might be has proven difficult. This is partly because the human visual system is so adept at recognising objects from the sketchiest of clues (think how a semi-colon and a bracket can conjure up a winking face ;) and partly because it is so ready to categorize as abstract or empty anything that appears to be noise, pattern or texture. Here are some further examples of my indeterminate paintings that play on the boundary between recognisability and abstraction.

[Insert Figure 3]

Figure 3. *Paralysis*, 2005, Oil on panel, 30 x 40 cm. Private collection.

[Insert Figure 4]

Figure 4. *Liminus*, 2006, Oil on panel, 90 x 60 cm. Private collection.

I want to argue that the phenomenon of visual indeterminacy can reveal something about the ancient problem of how we relate to reality. Visual indeterminacy shows us something about the nature of the world as it exists prior to and in the process of being conceptually categorised, that is, as we become aware of what it contains. It tells us something about how reality is constituted for us, and how objects in the world come into being for us. To illustrate this I want to discuss a short sequence from the film *BLOW-UP*⁵ made in 1966 and directed by Michelangelo Antonioni, whose early career in Italy was connected with the postwar Neo-realist movement.

Indeterminacy in *BLOW-UP*

BLOW-UP tells the story of a fashion photographer, played by David Hemmings, who becomes frustrated with shooting the models in his London studio and goes out to take photographs in a nearby park. There he secretly photographs a couple, becoming intrigued by the strange behaviour of the woman, played by Vanessa Redgrave. She sees him and runs after him, angry that he had been photographing her and asking for the film reel. He refuses, but she later turns up at the studio and tries again to persuade him to give up the film. He eventually agrees, but gives her another reel instead. Intrigued by why she was so keen to get the negatives from him he develops the shots, prints them, and examines them, trying to piece together the events that photos captured. His attention is drawn to a patch of indistinct foliage in one of the photographs, which he blows up and examines more closely. Here is a moment of visual indeterminacy. The dark and light patches in the image strongly suggest the presence of something that is at the same time absent, until he has a flash of recognition and resolves the indeterminacy. He realises he has inadvertently captured the moment when someone in the bushes is about to shoot the man he has been photographing, although we never find out exactly why these events have occurred. The film critic Sam Rohdie describes the significance of the sequence in the wider context of Antonioni's cinematic style:

Since things lack the final determinations of a closed structure of events, and since the entire binding of events in a plot and in a drama are loosened to the point of disappearance, the entire film, and any image in it, is threatened with indeterminacy: hence the oscillation as

⁵ *BLOW-UP* (dir.) Michelangelo Antonioni, UK, 1966.

central to Antonioni's films and the problems the films pose of fixing a reality, of seizing upon a substance which seems so insubstantial, whose very presence is in doubt.⁶

The sequence makes an obvious play on the dual meaning of the word 'shoot', in the photographic and gun-related senses (in English at least). But it also probes the way we understand or make sense of the world around us by extracting meaningful information from the array of potentially significant clues available to our senses. It is legitimate to ask to what extent the figure in the bushes is really there prior to the moment the photographer recognizes it. At the moment of recognition the shadowy figure comes into being in a way it wasn't before. At what point, then, does it become 'real'? This filmic sequence in fact plays out over an extended period of time the almost instantaneous processes that occur in visual perception (and in fact in all modes of perception) from moment to moment when the chaotic flux of our indeterminate sensations are forced into conceptual categories, and so become determinate and meaningful things in the world.

Visual perception

Vision scientists often refer to two fundamental stages of vision, which normally occur almost simultaneously but occasionally disconnect or misalign. The first is sometimes called the 'early', 'perceptual' or 'bottom up' layer.⁷ Here the visual information received by the visual cortex is organised into formal properties of shapes, colour, line and motion. The world appears to us here in almost abstract terms, full of contrast, form, shade, pattern, but lacking distinct or recognizable objects, much as Kandinsky described the images he saw as 'objectless'. The other important aspect of vision is the 'cognitive', 'high-level' or 'top down' layer in which attaches meaningful information to the perceptual forms, identifying within it objects that correlate with our stored memories of things in the world built up over our lifetime. Normally these two layers work together almost immediately when we apprehend things in the world. But when errors creep in – either through temporary misperception or more permanent brain damage — the results can be profound.

⁶ Rohdie, Sam (1990). *Antonioni*. London: British Film Institute. p. 178. There is another notable 'indeterminate' moment in *Blow-Up* early in the film, where Hemmings goes to visit an artist friend who describes the process of finding recognizable forms in his Cubist-like works as like "finding a clue in a detective story".

⁷ Farah, Martha. (2004). *Visual Agnosia*. Cambridge, MA, MIT Press. p. 156.

Visual agnosia is one such condition, where due to lesions in the brain the normal processes of perception and cognition fail to coincide. A famous case was studied by the psychologists Humphreys and Riddoch.⁸ A patient of theirs, John, was able to see perfectly well in that his eyes were functioning normally, but was unable to recognize through sight alone the things he saw, even though he knew what the objects were and could recognize them by other means. John was able to copy the owl picture on the left of Figure 5, somewhat laboriously, but did so without realizing that the image depicted an owl.

[Insert Figure 5]

Figure 5. John's drawings from Humphreys and Riddoch (1987). Reproduced by permission (© 1987 Oxford University Press).

One of the many interesting questions such cases raise is this: Where in reality is the owl? For those of us with normally functioning perceptual systems we see the owl as really there; but what John sees as real is an arrangement of abstract lines. John's visual system does not have the capacity to construct the owl from the information available in the picture, and so for him it does not exist. Yet for us looking at the same object it does. This demonstrates the way in which the appearance of reality for us has to be actively constructed by the perceptual system. It is not merely 'there' to be passively recorded, but has to purposefully sought out and discovered from a series of clues, in much the same way as the photographer in BLOW-UP hunt for meaning within his enlarged images. In the visually indeterminate image the link between the perceptual and cognitive layers is temporarily broken or frustrated. The act of trying to construct what is really there from the available clues is brought into the forefront of our minds, we become aware of it, and the reality we are used to finding 'out there' immediately is removed from our grasp.

Richter and indeterminacy

The contemporary German artist Gerhard Richter is somewhat unusual among artists (but by no means unique) in that he works in a number of quite distinct styles. He is particularly

⁸ Humphreys, Glyn and Riddoch, Jane. (1987). *To See But Not To See: A Case Study of Visual Agnosia*. Hillsdale, NJ, Lawrence Erlbaum Associates.

recognized for both his photo-like images, often immaculately rendered⁹, and his generally larger abstract works, which he frequently produces by almost chance-like acts of scraping or squeegee-ing, leaving the final effect to the unpredictable interaction between the materials and the tools.¹⁰

In the work of Richter, who as a young man was trained in the Socialist Realist school in East Germany, we are offered a range of image types that make the question of how his works relate to reality a very rich and complex one. For example, his photo-based works are sometimes referred to as being 'realistic', that is, they closely correlate to how the world 'is' in reality, whereas his abstract pictures may be regarded as having little or no relation to the appearance of reality, being more autonomous constructions, i.e. formal arrangements of pattern, shape and colour.¹¹

But if we look at Richter's work more closely, and consider some pronouncements by the artist himself, we can find a more subtle understanding of the relationship between mind and reality and how this is expressed in and mediated through a practice like art. In fact, rather than being seen as either realistic in the conventional sense, or abstract in the sense of nonrepresentational, Richter's work can be better understood as 'indeterminate' in the way described here. In other words, what the artist is trying to produce in his paintings is a sense of uncertainty, lack of determinacy, which draws the viewer in to try and make sense of what they are seeing. Richter himself is very explicit about this. He wrote:

Pictures which are interpretable, and which contain a meaning, are bad pictures. A picture presents itself as the Unmanageable, the Illogical, the Meaningless. It demonstrates the endless multiplicity of aspects, it takes away our certainty, because it deprives a thing of its

⁹ For example: *Betty*, 1988, Saint Louis Art Museum, Saint Louis, USA.

¹⁰ For example: *Bach (4)*, 1992, Moderna Museet, Stockholm, Sweden.

¹¹ In one sense these two strands of Richter's work can be thought of as paralleling the two layers of visual perception discussed earlier: the 'representational' layer instantiating determinate objects that have specific meaning for us and the 'abstract' layer consisting in rich but meaningless shapes and patterns.

meaning and its name. It shows us the thing in all the manifold significance and infinite variety that preclude the emergence of any single meaning or view.¹²

And in this exchange with the art critic Robert Storr he makes a similar declaration:

GR: I try to avoid something in the painting resembling a table or other things. It's terrible if it does because then all you can see is that object.

RS: So you allow for aspects or suggestions of images in the abstract work but not actual pictures?

GR: Not actual pictures. I just wanted to reemphasize my claim that we are not able to see in any other way. We only find paintings interesting because we always search for something that looks familiar to us. I see something and in my head I compare it and try to find out what it relates to. And usually we do find those similarities and name them: table, blanket, and so on. When we don't find anything, we are frustrated and that keeps us excited and interested until we have to turn away because we are bored. That's how abstract painting works...

RS: I am just saying that you use paintings as a way of making it difficult for people to read the image.

GR: Yes, that's right.¹³

In many of his works we can see Richter playing with the viewer's perceptual expectations, encouraging them to "search for something that looks familiar to us". Take the *Baader-Meinhof* series of paintings made in the late 1980s, and in particular *Funeral*.¹⁴ Many of the paintings in this series are based on blown up and degraded newspaper images, processed by Richter in such a way as to erase all obvious clues about the objects depicted, leaving only the overall structure of dark and light patches that make up the formal organization of the image. We get a strong sense that the images are full of meaningful objects, but it is not immediately apparent what they are. Richter actively encourages this struggle between audience and artwork as a way of heightening the aesthetic engagement with the work.

¹² Elger, Dietmar and Obrist, Hans Ulrich (eds.) (2009). *Gerhard Richter: Text*. London: Thames and Hudson, p. 32-33.

¹³ Storr, Robert (2003). *Gerhard Richter: Doubt and Belief in Painting*. New York: Museum of Modern Art. pp. 178-179.

¹⁴ *Beerdigung (Funeral)*, 1988, The Museum of Modern Art (MoMA), New York, USA.

Images and reality

Prior to the convulsions of the European avant-garde movement in art in the mid-nineteenth and early twentieth century there was a general understanding that what the still camera, and by extension the movie camera, did was to present reality to us 'as it is', that is, in an objective, accurate and determinate form. The optical media of photography was seen to be able to replace, in a faster and more efficient way, the role of painting in capturing visual experience in tangible and permanent matter. The overwhelming assumption throughout a large part of European history is that a picture should represent some aspect of external reality, albeit in a more or less detailed or stylized way. Some art historians have seen the history of art, at least in pre-Modernist epochs, as a series of continuous steps towards achieving the near photographic rendering of the world in representational form.¹⁵

Many of the art movements that broadly made up the avant-garde resisted or reacted against this notion, and often resulted in the making of images that left audiences being confused about what the image they were seeing was supposed to be. Even at a time when his work was quite readable by today's standards, the British Romantic artist J M W Turner found himself subject to rebuke and ridicule when exhibiting publicly some of his atmospheric landscapes in the early nineteenth century. One critic wrote:

Mr. Turner has doubtless heard that obscurity is one source of the sublime, and he has certainly given to the picture a full measure of this kind of sublimity. Perhaps his work may be best described by what a lady said of it — that it is all flags and smoke.¹⁶

Even some years after his death, Turner still had an international reputation as an artist who confused his public. In 1871 a French critic wrote:

His painting degenerated into lunacy. [His late works] compose an extraordinary jumble, a sort of churned foam, a wonderful litter in which shapes of every kind are buried. Place a man in a fog, in the midst of a storm, the sun in his eyes, and his head swimming, and depict, if

¹⁵ Gombrich, Ernst (1969) *Visual Discovery through Art*, in J. Hogg (ed.), *Psychology and the Visual Arts*. London: Penguin, p. 215.

¹⁶ Quoted in Ziff, Jerrold. (1964). Proposed Studies for a Lost Turner Painting, in *The Burlington Magazine*, volume 106, number 736, p. 329.

you can, his impression on canvas; these are the gloomy visions, the vagueness, the delirium of an imagination that becomes deranged through over straining.¹⁷

Like Turner, Claude Monet endured public ridicule for exhibiting works that lacked objective delineation, perhaps most famously in the case of *Impression, Sunrise*¹⁸ — a view of Le Havre that Monet chose to exhibit at the first exhibition of the Impressionists group in 1874. The notorious satirical review of the show by the artist Louis Leroy instantiated the use of the term 'impressionism', which Leroy took to mean the rendering of natural forms in a loose, shorthand way. The resultant visual uncertainty (we use the word 'impression' to denote a sketchy understanding rather than more detailed knowledge) caused the reviewer to exclaim in front of Monet's painting, "What does that canvas depict?" as he resorted, like Kandinsky, to the catalogue for a means of identification.¹⁹

The European avant-garde, then, could be held responsible in large part for a general shift in how we understand the relationship between images and reality, away from the simple view that painting and photographs clearly show us the world 'as it is' towards one of much greater complexity, even confusion where we can't be certain of what we are seeing, or have to work hard to interpret the visual material before us. The facile or easy link between external reality and its pictorial representation was successively broken throughout the nineteenth and into the twentieth century. Richter himself is both an inheritor of a contributor to this modernist tradition in which the artist challenged and subverted the realistic intent of figurative representations and forced viewers into an active struggle to recover the meaning of the work as opposed to being a passive recipient of pre-formed determinates.

In Richter's work there is no simple demarcation between the real and the abstract, the factual and the interpreted. In fact, he goes so far as to reverse, or at least upset, the conventional understanding of the relationship between reality and the way it is depicted in photographs and paintings. He has said for example:

¹⁷ Hippolyte Tain quoted in Lochnan, Katharine (2004) *Turner Whistler Monet*. London: Tate Publishing. p. 37.

¹⁸ *Impression, Sunrise*, 1872-3, Musée Marmottan, Paris, France.

¹⁹ Leroy, Louis. (1874). "The Exhibition of the Impressionists." In *Le Charivari*, 25 April.

Photography has almost no reality; it is almost a hundred per cent picture. And painting always has reality; you can touch the paint; it has presence; but it always yields a picture — no matter whether good or bad. That's all theory. It's no good. I once took some small photographs and smeared them with paint. That's partly resolved the problem, and it's really good — better than anything I could say on the subject.²⁰

The painted photographs, like much of Richter's work, play with the interface between the real and the imaginary, the mechanical and the expressive, paint and photograph, recognizable and unrecognizable, determinate and indeterminate.²¹ By presenting on the same picture plane both a conventional pictorial image and a viscous, erratic ,abstract' painted marks, Richter sets up a complex negotiation between the viewer and the artwork in which the final meaning of the image remains elusive and fluid. In Richter's terms, this process endows the ,unreality' of the photograph with the tactile, material reality of painting, so upending our habitual categories of what is realistic and what is not so.

Indeterminacy and reality

The phenomenon of visual indeterminacy disturbs the apparently direct or immediate relationship between external reality and how we perceive it and represent it; it prevents us making an easy connection between what we see and what is ,out there'. I would also argue that the experience of the visually indeterminate transcends the simple binary abstract/real distinction by which we define so many images and so much art by bringing the externally real and the internally real together in the act of imaginative interpretation. We are reminded that all experience of reality is a matter of interpretation; nothing ,out there' is inherently meaningless or meaningful until we chose make it so. In this sense all perceptual acts are interpretative, although we tend to overlook this since the process of interpretation occurs seemingly immediately and in most cases effortlessly. But occasionally we face a situation — as I did watching *THE CABINET OF DR CALIGARI* or as the Hemmings character did in *BLOW-UP* looking at the enlarged photographs — where the immediate grasp of the

²⁰ Elger and Obrist, p. 273.

²¹ For example: *Misty Self-Portrait (18.1.1990)*, 1990, Anthony d'Offay Gallery, London, UK.

depiction is frustrated, and we are forced to struggle to recover or sense of the reality of the world around us.

It in this indeterminate state of perception that we come closer (perhaps as close as we can ever come) to experiencing reality as it exists before we determine, for our own purposes, what we take it to be. The process of visual indeterminacy slows down, and in doing so makes us aware of, the way our perceptual systems work to construct an 'appearance of reality' that is as much subjective as it is objective, as much a product of our own manufacture as it is of any external, independent world properties. This is why I argue visual indeterminacy is of fundamental importance in understanding not only great historical shifts in art and the motivations of important artists but the very nature of perception and our relationship to the world. The consequences of this realization are profound: if we are always complicit in the production of reality then we can no longer enforce a clear demarcation between an external objective world and an internal subjective experience, just as we can no longer enforce an easy separation between perception of the world and our imaginings of it. In these terms, subjective experience becomes *part of* objective reality, indeed the very fabric within which it is created. This sense of how reality coincides with the way it appears to us is captured in this final statement from Richter: "I never wanted to capture and hold reality in a painting. Maybe in a weak moment I did, but I don't remember. However, that was never my intention. But I wanted to paint the appearance of reality. That is my theme or job."²²

²² Storr, p. 172.