

In their introduction to *Henri Bergson: Key Writings*, Bloomsbury 2021, John Ó Maoilearca and Keith Ansell Pearson offer in answer to Bergson's solution to Zeno's paradoxes Bertrand Russell's own:

A cinematograph in which there are an infinite number of films, and in which there is never a *next* film because an infinite number come [sic] between any two, will perfectly represent a continuous motion. Wherein, then, lies the force of Zeno's argument?

Why does Russell use this image? Why does he choose the image of a cinematograph? An early piece of film gear, the cinematograph combined the functions of both projector and camera. By the time Russell is writing cinematographs had been in commercial use for 27 years.

Why did he not revert to Zeno's own examples or talk about an endless succession of clouds? Why not choose a natural phenomenon? or is it to Russell's point to use this one? Is there a reason to refer to cinema in this context?

I'll come back to this because the point of this note lies in the contrast between cinematic time and natural time. Cinematic time is more readily understood than natural time and this too speaks to my purpose. By cinematic time I mean the kind of time that cinema, film and moving images in general occupy. Natural time is then the time taken by natural processes, organic and inorganic, whether they are themselves living or inanimate, the time they animate.

I think Russell exemplary for the contrast I am making not because he formulates a concept of cinematic time but because of the contrast between his views on time and Bergson's. Bergson's explanation of time is that of a duration. In duration he is dealing

with the time properties of natural phenomena. For me duration is then exemplary of natural time.

The Russell quote Ó Maoilearca and Ansell Pearson use in the introduction to their editorial choice of Bergson's key writings is from *Our Knowledge of the External World* on 'The Theory of continuity,' Lecture V, 1922. They cite Russell because of his lasting influence on Bergson's subsequent reputation. Russell contributed to the fall of Bergson's star, a star that at the time had burned more brightly than any philosopher's.

1922, the year Russell's work was published, was also the year of Bergson's debate on April 6 in Paris with Albert Einstein. The echoes of this event are still I would argue being heard if not felt or recognised in our contemporary philosophy, including in the philosophy of science. Einstein and Bergson debated the nature of time. It is said that Einstein won.

Although not widely discussed, his win contributes to Einstein's rise and Bergson's fall, the one eclipsing and outdoing the other in popularity. It is even forgotten that Bergson, particularly among women, enjoyed such mass appeal. This is another mark, in Russell's view, against him and his philosophy.

Russell vilified Bergson in plainly sexist language. Where Einstein beat Bergson in popular culture, Russell is largely responsible for his sinking below the surface of the philosophical mainstream. We might even date the divide between Analytic, anglophone philosophy and so-called Continental philosophy to Bergson dropping from sight.

The context for the waning of Bergson's reputation is strongly linked to what he himself considered his principal philosophical insight. This was into the nature of time. The insight into the natural duration of time is behind all his later work.

Bergson realised that in science's understanding time needn't pass. For science there is no endurance. There is the passage between states but in themselves these do not endure.

Science does not measure the time internal to their endurance. Rather states are measured at each end, from end to end, from startpoint to endpoint and from any point inbetween that can then serve as start or end. In the beginning a state, whether it issue out of a preceding state or not, is not and then is. The time internal, the time endured, Bergson called duration.

Science and Einstein's spacetime of relativity rely on simultaneities. A state in its is-ness is related to another in its. This is true for the states of measuring devices. It is therefore true for the clocks of the two clocks thought experiment.

Bergson argued that relativity was not a temporal phenomenon. It had nothing to do with time. It brought into relation simultaneous states, the time-reading of the two clocks.

One clock had been travelling and one not. When compared, the one that had been travelling ought to lag behind the other. According to Einstein time passed more slowly for the moving clock and the faster it moved the greater the lag. For Bergson, these relative times were not being measured, the two states of the devices were.

The time internal to the travelling clock was not being compared to the internal time of the one holding its location. A clock does not in Bergson's sense measure the time passing. It uses a spatial analogue for it.

Here time is not passing but, since it goes by the point it is recorded, still and present. Its relation then to Bergson's idea of the real time of duration is given by convention and that convention rests on a spatial metaphor. A durational measurement of time is impossible to make by fixed quantity. It is a quality, an intensity, that can only be intuited by a feeling and from its experience in duration.

Time as duration is inaccessible to ratiocination. That it must be felt does not make time an exclusive quality of consciousness. It does however render it irrational and this is Russell's finding with regard to Bergson's philosophy, of it being irrational, intuitive, therefore nonanalytical and effeminate. Moreover, for Russell, Bergson is guilty of making philosophy over in the image of his own irrationalist, intuitivist, anti-analytical and feminising impulses. Worse, he is unapologetic in doing so.

Bergson suggested that it was not only habits of thought that stood in the way of our thinking durationally but language as well. Spatial metaphors for time were built into language. My own finding is that the greatest obstacle to understanding Bergson is not language and the spatial metaphors inherent to it.

Reading Bergson is difficult because of a set of metaphors wholly other to those found naturally in language, in fact allowing them to relinquish primacy and sink into the background. This is the same background of historical time and historical context that Bergson is seen to sink into, making it less and less likely for Bergson, in its passage, to have anything useful, effectual or relevant to say to us, his readers today. The set of

metaphors displacing the ones identified by Bergson as standing in the way of thinking durationally coincide with the historical time he was writing. They come from cinema.

Before dealing with what is meant by saying that the predominant means used to think about time take their metaphors from cinema it's important to enquire further about the contrast between scientific measurable time and time as duration. Is there really a contest between the two? Isn't Russell right in thinking Bergson's notion of time to be too diffuse to be useful, too intangible and, if not feminine, subjective?

Duration might have some psychological validity but no scientific validity. It is at best a psychologism, a matter of subjectivity and, ultimately, opinion or point of view. So there is no contest, is there? As Einstein is alleged to have said when Bergson presented his counterargument to contrast with Einstein's views on time, "The time of the philosophers does not exist."

For duration to be a contrasting view of time it has to stand up on its own. Astrophysics professor, Adam Frank, in a nice article written from his reading of Jimena Canales book about Einstein and Bergson's 1922 meeting, asks in its title, "Was Einstein Wrong?"¹ This is to raise to the level of contest what has not yet been determined to be in Bergson's duration a contrasting view of time, but Frank also raises the question of whether Einstein's spacetime stands up on its own.

Frank claims, after Canales in her book *The Physicist and the Philosopher: Einstein, Bergson, and the Debate That Changed Our Understanding of Time*, 2016, that Bergson was not presenting an argument to counter the notion of spacetime. He did not want or mean to counter the physics but the metaphysics. Without certain metaphysical

¹ <https://www.npr.org/sections/13.7/2016/02/16/466109612/was-einstein-wrong>

assumptions spacetime is not a concept that stands up on its own. Therefore it is at the level of metaphysics that the notion of duration becomes contrastive and worth putting up against, pitting against spacetime.

Spacetime, writes Frank, depends on the metaphysical assumption of chrono-geo-determinism. This is a view of the block universe. In the block universe everything that can happen, has happened and will happen exists. Each event exists in its multidimensionality as actual and discrete.

A divisible part of its multiplicity, what happens, has and will happen is chronologically and spatially (geometrically) determined. So it is predetermined but it makes no sense to say so since the temporal distinctions of before, pre- and after cease to matter. Time as succession, however it may be physically necessary to bodies in motion, is no longer metaphysically supported in such a view.

Ó Maoilearca and Ansell Pearson in their introduction distinguish between this kind of multiplicity, where everything possible is actual and exists, of which temporal succession is no longer a necessary part, and what Bergson calls a virtual multiplicity. A virtual multiplicity is not composed of discrete and divisible and therefore measurable and countable events but of states of duration. These are diffuse and, from being purely virtual, they come into being.

They are not divisible except qualitatively or intensively, by relative differences of intensity. These states are not discrete, they interpenetrate. They are ever in process.

Against the absence of necessary temporal succession in the first type of multiplicity, of the multiverse or block universe, the second type, of virtual multiplicity, presents the temporal succession of different qualities, intensities, states in process, that come into

being and pass away. This overall process Bergson calls duration, pure duration or simply time, but the absence of necessity of succession in spacetime does not mean its necessary absence. This is what Russell is trying to show in his handling of Zeno's paradox, that the discontinuity of discrete states of things does not exclude their continuity in a kind of time.

How does science show time? How does mathematics show the continuity of succeeding states, from one to the next? How is change conceived of? It is not common here to talk about chronogeodeterminism as Adam Frank does.

The tendency, even in quantum field theory as it has developed from complexity and chaos theory, is to show, for example in paying close attention to and taking measurement of initial conditions, that change occurs according to laws. These laws are, broadly considered, deterministic. Were they not and did they not remain so there would be little room for them in science. They would not be supported by its epistemology, that is according to its (metaphysical) assumptions of what constitutes scientific discourse and knowledge.

Since duration frees succession from predetermination, since duration saves time, so to speak, from the determinism where saying pre-, before and after, actually makes no sense, there does then seem to be something worth contesting. Bergson's duration shows succession. It shows time to be of the order of continuous succession.

For the time of states that interpenetrate, that are always in the process of coming into being, succession is not only evident but necessary. The order of time has to be one of before and after. Time as duration, for the reason it is of a virtual multiplicity and is ever coming into being and passing away, belongs to a continuity that cannot be

predetermined and is nondeterministic. It is a time adequate to both freedom of action and indeterminacy.

Does this order of time differ from the common naturalist view of time being a succession in continuity and at once able to be decomposed into discontinuous and actual states? Does it differ from the view of temporal succession able to be divided without altering its underlying nature of being continuous? This is the source of Zeno's paradoxes relating to bodies in motion. It is also the source of Russell's paradox of the cinematograph, where I believe Russell articulates a naturalism belonging to cinematic time.

The fact of this articulation points to another source in natural language. Language, in particular written language, gives the impression of there being a continuity underlying discontinuous discrete states of things. The letters don't make sense without it. Then where does this sense, the sense of continuous movement come from?

Sense has the continuous movement of making sense that time has too. It is there in what may be called natural time. This naturalist view is what Zeno set out to challenge and inasmuch as he gives the sense there is a paradox here he succeeded.

All is movement according to this naturalism. All however is not in movement, otherwise there would be nothing solid to grab hold of, but, whether the movement is of sense or of water or of the particles it carries along, for this view, for the temporal continuity supposed to underlie stable appearances, movement is prescriptive. It is the way time is pegged to movement that produces paradox.

The all, of all is movement, can be divided at any point. Zeno supposes the realisation of this potential. Being broken at every point it can be brings about either the cessation

or the breaking down into parts and more parts of movement and from these parts the whole can no longer be accomplished.

Time however does not cease its achievement. It carries on regardless as if movement itself were separable from time. While for science time is a function of points articulated in space, for the naturalist view these points articulate time. Stillness rules time for the scientific view, leading to the immovable chronogeodeterminism of the block universe. Movement rules time for the naturalist view, leading to the paradox of the points along it being time's stopping points.

Bergson's answer to Zeno's challenge is similar to his answer to science. He answers science's division of time into simultaneities by saying that no such division can occur without a change in what is taking place in time, without qualitative change. He answers Zeno by saying that movement is not an accumulation of movements and so cannot be composed and decomposed as if it were.

The flow of his writing gives the same sense as he ascribes to a melody in music. Were it to pause and draw out any one note there would be a qualitative change. This is so for the movement of a written thought, for a melody and for the movement of physical bodies. Movement happens at a single stroke. It is indivisible according to Bergson.

Divided, its quality changes. Achilles need only walk to prove it. What Zeno shows in his paradox, since the change in the quality of Achilles' steps, is a race between two tortoises.

Bergson's answer to Zeno's challenge to the view of time being articulated by movement and therefore composed of the series of points moved through is to point back to the time that movement takes, stating that time is neither an accumulation of nor

decomposable into points or discrete states. To subtract one state that is moved through changes the nature of the whole movement. It is not with quantities of time that Bergson answers Zeno but with its quality, the overall step of Achilles being unequal in its quality for the time it takes to that of the tortoise.

Russell however does not accept the terms on which either Zeno's challenge to the naturalist view of time or Bergson's answer to that challenge rests. Between 1922 and Bergson forming his ideas around time and his answer to Zeno a new analogue for time has come into being. It is in Russell's answer to Zeno, the cinematograph and cinematic time.

What is significant for Ó Maoilearca and Ansell Pearson, is that Russell answers Zeno's paradox with another paradox. The continuous motion of time is upheld by the continuity of an infinitely unspooling number of films. There is never any next film but an unbroken stream.

The films are not, as in Bergson's example of a melody, indivisible. They are measurable, tangible. They may be stopped at any point without there being qualitative change. Russell's view shows a naturalism to his cinematic example, that of a cinematic analogue for time. As Ó Maoilearca and Ansell Pearson put it, without really asking why or stating what it is, Russell answers Zeno with another paradox.

They instead charge Russell with dogmatism in arrogating to his own view a validity that is both logical and mathematical, and that does away with the need, as Einstein also says, for Bergson's philosophical time, but what is convincing in Russell is not the logic, rationalism, mathematical and scientific validity or the truth of his view of time. It is rather in the nature of his example. It has to do with the cinematographic image.

We are more familiar with streaming media than film. We might update Russell's image for the digital image. Its internal logic would still hold. In the stream of images there need not be any next image but between any two there can come an infinite number. It might then be asked, what is the paradox that Ó Maoilearca and Ansell Pearson find in Russell?

They insist that Russell's mathematical time is not like that of the naturalist view pegged to movement. It can't be decomposed and recomposed by infinitesimal periods of time or distances in space. It has to do with continuous series where there is no next. Its failure, for Ó Maoilearca and Ansell Pearson, is that of being an actual multiplicity and not a virtual multiplicity. The states it describes have to be actual and existing, not virtual and coming into being as with Bergson.

Looking at it from the outside and taking Ó Maoilearca and Ansell Pearson at their word, the paradox for me resides in there being as Russell states it no next film. It's worth noting at this point that in 1922 cinema programmes comprised successive films. Each required the loading of new reels. A feature, like *The Toll of the Sea*, 1922, running at 54 minutes, took up 5 reels, but typically in the 1920s a reel was 15 minutes long and held one film.

The paradox therefore is that in Russell's "infinite number of films" there is always a next film. If Russell had attended one of over 1000 cinemas, as there were by 1914 in London, to see a particular film on the programme, he might have been very disappointed. If he had stayed his whole life, he still may have left without seeing it. However what Russell is attempting to assert, despite the paradox of each new film being the next one and yet there being no film consecutive to another, is the continuity

of the series. Its continuity allows, without breaking the mathematical series, for the intercalation between any two of an infinite number of films.

That the programme plays without a break is the assurance of the mathematical series, but this, say Ó Maoilearca and Ansell Pearson, bears no necessary relation to the actual world. Neither, says Russell, need it have any relation to actuality nor to time for it to be preferred and asserted over Bergson's philosophical time. Ó Maoilearca and Ansell Pearson call Russell out then on the dogmatism of the assertion of mathematical time in place of philosophical time.

What they don't do, as it is probably beyond the scope of an introduction to a selection of Bergson's writing, is investigate Russell's claim for mathematical time in view of the nature of cinema and of cinematic time. My view is that Russell's image of time, however paradoxical or dogmatic in its statement, is naturalistic. It engages a cinematic naturalism. More than this, the image given of time by Bergson's writing, from *Time and Free Will* (in French, *Essai sur les données immédiates de la conscience*, 1889) on, cannot be understood without difficulty after the advent of the image of time I have been calling cinematic.

Russell is the beneficiary of the advent of the cinematic image of time, since it is his view of mathematical time that historically has prevailed, in science and in large measure for philosophy. This image has created more problems than it has solved for our understanding of time. These problems are being played out today in particular by quantum theory, quantum field theory and in the attempt at a grand unifying theory.

Bergson's target was a mechanistic view of life but, since the capture in the moving image of a particular kind of time by mechanical and technical means, the target shifts.

It has shifted to the relation between cinematic time that captures the moment and the playing out of life. I would say then that these scientific problems ramify across our understanding and, since cinematic time captures the moment of life by capturing its movement, I would say that they radiate out over the whole of human activity. This is part of the reason for this note.

That these problems are not held exclusively by either science or philosophy, since I am expert in neither, is the whole reason. I'm a thinker not so much of thought, of philosophy, as, being on the side of cinema, a thinker of practice. Bergson's appeal is that of allowing me and I hope you, through this note, to get under the hood of what is happening in the relation of life as it rolls out and the moving image that winds it up in the kind of continuous and unbroken succession Russell imagines belonging to the cinematograph.

The fact is he imagines it. On the side of cinema there arises a wholly different picture and image of time and, on the face of it, it looks like Russell's paradox, of there never being a next film through the interposition of any number between this and any other one but yet of there always really being a next film, unlike Zeno's paradoxes, is not intended to pose a challenge to the naturalistic view of time, whether cinematic and to do with moving images or, as for Zeno, to do with moving bodies. It looks like Russell espouses the view he makes a paradox out of, as if he does not recognise that he is making a paradox.

Having come this far and in light of what Ó Maoilearca and Ansell Pearson say it might be asked whether Russell's dogmatic assertion of a view of time in place of the philosophical time Einstein said to Bergson does not exist is the mathematical or the

cinematic one. This brings this note back to what I asked at the beginning, why does Russell use the cinematograph as his example?

Is there not an example that better fits, that is closer to his only option for philosophical time? Why not talk about the infinite number of points that intervene between any two points on a line so that there is never a next point? Why not talk about an endless succession of clouds in the unbroken continuity of which there is no next cloud? or of crickets or birds in whose song there can be said never to be a next note, a next stridulation? Wouldn't any natural phenomenon serve the purpose of showing the sense of continuity, of the compact continuity against which he proposes that Bergson's duration does not make sense?

Even in his example, of films, there would seem to be one closer to the temporal model of mathematical time. Why not say that between two shots any number might be inserted, or between two frames there might be any number of frames? so that a movement would never be completed, a sequence or scene could never end? There would still be no next shot, no next, simply the continuity that he is trying to draw our attention to but as I've said, I think the reason for Russell's choice of image resides in the transformation of the nature of temporal experience effected by the advent of cinema and of the cinematograph. However there is one more point to make before getting there.

Russell would not answer a paradox with a paradox. Even if he didn't have a good understanding of the mechanism of film, of its composition frame by frame and its potential decomposition into frames or into scenes, he would not. It's all in this, Russell did not accept the terms of Zeno's paradoxes. He didn't think they made sense.

He didn't see Zeno's paradoxes being the challenge they were meant as to what I've called the naturalistic view. His own view was stated to challenge Bergson's duration. This view, the mathematical one, is that a continuum like time is divisible, infinitely, without breaking it, without stopping its flow, as Bergson has it. It is so for as long as it lasts.

This as-long-as-it-lasts is emphasised by Ó Maoilearca and Ansell Pearson. It goes to its nature of being what Russell calls a compact continuity. Ó Maoilearca and Ansell Pearson are at pains to point out Russell's continuity is not the temporal continuum as such.

In fact I have dwelt with these writers on the first part of Russell's argument. The second goes regardless of there never being a next film, because of the infinite number coming before any two, a cinematograph "will perfectly represent a continuous motion". Therefore, he asks, wherein does the force of Zeno's argument lie?

Russell uses the cinematograph ironically to dismiss the terms of the paradox. His own statement does not hold with there being any. He's not going to the movies to see his favourite film and waiting, potentially endlessly, for it to show. He's arguing for the perfect representation of the sort of continuous motion he subscribes to as view of time.

It is passably adequate, adequate to the purpose of dismissing Zeno's terms and to dispensing with philosophical time. It is so for its perfect representation. This has to do with nothing else apart from the nature of cinema and so the force of his example is an effect of that nature.

The nature of cinema is to represent perfectly a continuous motion. It doesn't matter about the intervening films because this does not subtract from that perfect representation. Their potential for endless postponement of any next film is not at issue.

The compact continuity of the continuous motion represented by the cinematograph ought to be taken into account. It's not an infinity. It's not a slice or section of a continuum.

At issue is that Zeno's paradoxes do not perfectly represent a continuous motion. The arrow in flight, the tortoise, Achilles, are engaged in a thought experiment that goes against common sense and the naturalistic view of time. For this view, animated by our habits and our use of natural language's spatial metaphors for time, time is space.

Russell's example is not about returning to this view. He wants to show it as being inadequate but this time inadequate to science and mathematics. What is demanded, unlike duration that cannot be represented, is a perfect representation that can be measured and, it is for Russell, measured without being either broken or divided. It is so without changing its quality.

Were the quality to change, the measurement would not hold. Rather than being pegged to space, as in the naturalistic view, time is pegged to the points articulating a continuous motion. For this reason Russell doesn't go in to the frames making up a film or its scenes. He holds to the continuous motion of its imagery.

The moving image gives a perfect representation of a continuous motion. In common usage, however it is composed technically, whether of frames or pixels, the moving image is singular. We know and can ignore the fact that any continuous imagery

engages a movement, of frames or pixels, of pictures drawn or computer generated, before that represented on a screen.

In the case of the digital, it might be said there is never any before. Digital imagery represents movement itself. As the digital image is always a moving image, given that it consists of moving images, perhaps it's better to think of moving image, with or without the article, as a collective noun.

Ignoring the composition of moving image from moving image, in order to say it is the one perfectly representing a continuous motion, cuts one image out from all others. These potentially make up the moving image but they are also set in train, made by it. Where to stop the moving image in its continuous motion?

Russell's perfect representation of a continuous motion imposes on continuity a unity. In his example the unity is integrated locally as a single film so that it arises as a paradox for Ó Maoilearca and Ansell Pearson, the paradox of there never being a next, Russell says, while there is forever a next film, which he doesn't say. It is no paradox for him but a proof of the terms, the terms for measurement in time and space being challenged by Zeno's paradoxes, not holding.

It is as if cinematic time underlies the naturalistic view of time with its spatial references that Zeno uses. It is a new naturalism but one of cinema and it is here receiving its official philosophical endorsement. Russell's view is a naturalisation of cinematic time.

How to get around this? how to get around the cinematograph perfectly representing a continuous motion? It's possible to point out the paradox, no next one, always a next, or to translate Zeno's paradoxes for the moving image, and peg time back onto space. The

moving image is composed of moving images comprising further moving images and can be put together to unroll continuously without ever reaching an endpoint but this, I would say, is the ruling metaphor for time as commonly understood.

It's why the Big Bang, a time before time, and the Big Crunch, a time after, are so hard to think. This view has gained currency like the spatial imagery, that Bergson points to, inhabiting and haunting language. It has become part of our language.

Time unrolls for us. It rolls out ahead of us and out behind us. In one direction time is no longer accessible to us. In the other it is not yet, not quite here. Here bears the full weight of the present.

Here where each of us is is the now we might like to be more mindful of and to appreciate, rather than living in anticipation of the future or yet unable to free ourselves of the past and our memories. The now has the duration of a point in time. Its stretching out ahead and behind is in the form of a line that we can mark out further points on, things that are possible in the future and things that happened in the past.

To be here in the now is not to return to the physical spatial nowness of the natural order. It has been since the invention of the means to reproduce and replay moving images to be among those images, watching old movies or events on screen that are either as close to the present as technically available or belong to the past. It is to live in screentime, cinematic time and to be in some measure free of the physical continuum that for Zeno constituted the only one.

Events that are simultaneous with us we tend to consider part of the present, to be live. These events are like the simultaneous measurements of the clocks in the two clocks thought experiment. The idea of reproduction is reserved for the fabrication of events

that are produced. Their production, the production of their imagery, constitutes for us, just as it did for Russell, their reproduction.

The role of time is to enable the endless and continuous succession of changes. We can replay this as energetics or use it, whether reconciling ourselves to it or not, to measure the lengths of time relative to birth and death. The role of time is not creative as it is for Bergson.

The role of the now is not in duration. The past, present and future exist in terms ideally measurable so that in the now we know where we are. The now is not able, as it is for Bergson, to be reeled up into knowledge or otherwise rolled out into action. Nothing sticks to time as it does for duration. Sticking would be a quality of duration not a quantity of time, where everything slides against a continuum, like the imagery that slips across the screen, in a film of imagery.

We know the present to have no extension not from the spatial habits that preceded ours but from the cinematic moment. This differs again from that of the still. The photo does not represent an arrested moment, like the image before us whether on a screen or here now when we open our eyes, until we imagine it to participate in a succession similar to that of cinematic time and projecting it back imagine what happened before and will happen after the photo was taken.

Mist will rise from the lake. The car was out of control before crashing into the tree. There will be casualties. There will be further effects of light. For Bergson the now of the still photo has a depth, an inner duration, but not from the time it was taken. From the time internal to the technical mechanism the image will have an inner time.

This time thickens and thins. It sticks sometimes and sometimes stutters and for intervals is still as in the still shot. It is not made up so much of homogeneous continuity as of a heterogeneous and fluid succession of discontinuities.

Like reading Bergson today, his time and the experience of time slowing or quickening, or even time stopping, seems unnatural. It poses a problem as if breaking not just with habits of thought but with conscious experience. Conscious experience, that is to say subjective experience, unreels its moments in succession.

Whatever special effects occur, like the slowmo we experience when about to fall down a flight of stairs, affect the moment. They are momentary. They pass and normal transmission resumes.

These moments are anomalous and not the rule that consciousness sets for itself. Science comes to our aid to explain the anomalies, a big hit of adrenalin, an alteration in brain chemistry, fight or flight, and solve the problem. In the resumption of normality, of memory not overcoming the present as it does for the old, of the promise of the future not taking over the present, of it not holding inestimable riches as it does for the young but merely calculable ones, conscious inner experience, consciousness has the continuity and the density of a film.

Dissociation and other pathologies, for example narcissistic lack of empathy, result from its thinness. The burnout that comes from overinvestment, broken-heartedness and fits of depression may result from its thickness. We need a happy medium to be healthy. We need more comedies. We need more hero movies.

The medium however is dictating the terms. Inner experience is subject to those terms. Time does not in fact alter its qualitative consistency. It remains in homogeneous flow.

It does not thicken or thin, stick or stutter, in a normally working brain. The standard for thought, the rule for consciousness then is the same as the one for time.

It becomes so not just by Russell's example but by open consensus. Pathologies relating to temporal experience are not even socially conceived. They are individual. They belong to the workings of the individual brain.

That anomalous experience may have physical causes, either in the development of the individual brain or in its chemical makeup is not at issue. After all, consciousness is not the brain. The proof is that we can be conscious of the diagnoses given our experience by medical science. In the moment of experiencing weird stuff we can put it down to chemical changes, maybe a misfiring neuron, being sick or high. In other words, we can put it down to its imagery.

Consciousness is the indifferent medium until we go truly psychotic and that line is expressed by taking the latter for the former and being unable to separate the medium from its imagery. Isn't this the sort of psychosis Russell's example exhibits? In it the cinematograph is the imagery of films and our consciousness of them.

Once time is identified with cinematic imagery, consciousness is identified with time. Once consciousness is identified with time we are stuck in the cinema unable to get at the projector. We may in fact not admit there is one but an 'it thinks' that 'I am.'

The sense perception that the brain is said to be hooked up to by the nervous system provides it with the images that are projected for me. These determine my inner experience. They comprise the consciousness of which they are, no matter how much filling in is done or what failures and compromises of transmission through the medium of consciousness there may be, the imagery.

Once I conceive consciousness in cinematic terms, rather than admit to the mechanism being simply out of reach, it's easy to picture myself being a passive observer of what passes before me as if on a screen. It is perhaps more desirable but this opens the possibility of there sitting in the cinema of myself yet another observer who is the recipient of my own observations of the screen watching the film I am projecting for myself from in myself. Further little observers, each one stuck in the cinema of sensation of the one before can be imagined in a reduction that resembles the kind of paradox Zeno uses to challenge the naturalistic conception of time.

The paradox is as well of the sort, notwithstanding the fact I don't, that Ó Maoilearca and Ansell Pearson see in Russell's answer to Bergson's answer to Zeno because once one observer comes between myself and my sensation there can come an infinite number. It follows in turn that because of the endless line of mini me watchers that I never get to see what I see. The perception never reaches sensation.

Sense never gets to arrive at consciousness. The arrow never reaches its target. It requires an equally infinite amount of time not ever finally to arrive because there is no end and no next except that of its duration, of the arrow in flight, of light first projected then in endless transmission. The medium for this transmission is the air, is consciousness and is time but for the cinematic image in particular the light bearing the image is the same as the light that makes it.

For something that goes so fast it goes so slowly as never to arrive and seems that nothing can go more slowly. If Russell's solution is applied to this paradox we repeat the doubling up of cinematic time by thought. Later in their introduction to a selection of his writing, Ó Maoilearca and Ansell Pearson say that what is at stake for Bergson is not

whether science is wrong about time but whether the time of science and the time of cinema and of the cinematograph are the same.

In his books on cinema, written late in his philosophical career, it is said Deleuze takes Bergson to the cinema. Bergson on his own behalf has little to say about cinema but Deleuze is not about trying to reconstruct what he would say if he had given it more thought. He is not rehabilitating cinema in Bergson's eyes. He is rehabilitating Bergson in cinema's. He is setting Bergson in philosophical light of cinematic time.

Deleuze does so in such a way that the elision between the time of science and the time of cinema falls back both into the historical and the cinematic background that is the background of cinema's own particular history. For him this happens before and he writes after. Neither does philosophy do cinema for Deleuze nor is one applied to the other. For him, cinema does philosophy. He tries to show what it thinks in philosophical terms.

I am trying to show what cinema thinks in cinematic terms, specifically in terms of cinematic time or of the time cinematic time is imagined to be. The history of cinema has value for this account because it shows how we wind up with an image of time that is drawn from cinema. For me Bergson's value is in the persistence of the problems with spacetime he deals with and also in the problem he poses for his readers today.

The problem is exactly that he doesn't have much to say about cinema and that we don't find in Deleuze, in his books on cinema at least, what he could have said. Bergson's examples, his images for duration are not just old-fashioned they are inadequate to the one that Russell illustrates for time. Bergson talks about a melody.

If it glitches out it is no longer that melody. Any alteration in the intervals of time brings about qualitative change. The melody no longer makes sense or it makes a new kind of sense. He talks about a bell tolling.

He hears it ring a number of times but he needn't count them. Without attending to number he gets a sense of the number. From its qualitative duration he hears how many times it rings.

Switching to cinema Bergson does consider the effects of slowing down motion to show on film changes in natural processes that happen too quickly for the eye. He talks about film's usefulness for science because of this. He doesn't seem to see what's coming, that film can be so compelling as to displace all other images of time and the assumptions made about them, that it will induce the displacement of metaphysical by cinematic assumptions.

This is the advent of cinema, the displacement by cinematic assumptions of assumptions made about time. To say they are metaphysical is to point to the elision of one to the other being unexamined. It is unconscious and where it is a conscious choice, for example, for the sake of example, gives negative proof. It covers for what is not there and only confirms the tendency, having been naturalised, being natural.

I can appreciate these examples of Bergson's, the melody, the tolling bell, intellectually but I don't automatically understand them, so the question is what do I automatically understand. What do I think we automatically understand? If we confine ourselves to operations in cinematic time we can't understand Bergson.

We can understand him least when, by saying the brain is an image among images, he is closest to us. Intellectually we can come to appreciate him. To make sense of him we

can remind ourselves that the image he is talking about is not a representation and it is not a representation either subjectively or objectively, neither in the mind nor in the world.

We can learn him and build up, piece by piece, the parts of the puzzle we do understand finally to complete the picture. It will take time, or we can use Bergson's own method, of intuition. To intuit invokes a different sense of time.

Intuition goes to the interval that breaks the automatism of our continuous apprehension of the world, and of ourselves. When thinking about what I do or don't automatically understand I thought, I don't understand myself. I come to understandings with myself.

There is room for negotiation that sometimes involve placing constraints on myself. I constrain my behaviour and emotions to what I prefer, for myself and what I prefer to project to the world but, if I am honest, my own self-understanding seems to have more to do with reconciliation and accepting that I don't know and what I don't know. The flaws I find after all are in the eyes of others not flaws, whereas pride, pride is the classical flaw in character.

Humility towards oneself seems too positive to me, too much of an action, while passivity is too close to indifference. I tend to keep openminded, or I would like to think so, towards myself and what it represents, to keep open the material space that I occupy. This bodily space is probably what I least understand and to see it in the aspect of mortality, of either sex or death, suggests to me a reductive view.

I prefer to see myself in the aspect of an interval. It's not necessarily the one where we get ice-cream and it need not be the one where we leave the cinema but it does break

open what I have here been calling cinematic time. A break occurs in the continuity of apprehension either of the mechanism, for example a clock or cinematograph that is both projector and camera, or our own, the apprehension of the subject.

The idea of a continuous time lends itself naturally to the image of a mechanism for registration and playback of the moving image, the break, the interval, more naturally to subjective experience. Objective time borrows its sense of automatism and continuity from this image, I have been saying. The subject then takes up the image in its mechanically rendered automatism and continuity and idealises it to render to consciousness what belongs to cinema, the indifferent film of all our personal imagery playing in the cinema of the self.

The stakes are high. They engage scientific and philosophical, physical and metaphysical, materialist and idealist notions of time, of what time is and, by engaging objective scientific notions, empirical notions, of what can be tested for and what measured, also are at stake. This is why it's important to point to both the mechanism and the subject as each having a time internal to it that is duration.

In neither the subject nor in the cinematograph is there really automatism and continuity. This is an idealisation. It comes from cinema. It takes in the whole field.

If cinema can show us this and we will get to it we should ask what Bergson can show us about cinema. Apart from ice-cream, what is the good of the interval to cinema? Surely the good of it is to show its own continuity of apprehension and its automatism of mechanism in order to assure us of ours, that is in order to give us the impression of a continuity matching real life and to do so without our manual intervention or suspension of disbelief? If the cinema's continuity and automatism breaks down or our

own does, and our own does, it's not working and we are back in the pathological zone, aren't we?

Then we are weighting cinema with our own welfare. This also I have been saying. It goes both ways.

First to the subject, when the automatism of its continuous apprehension breaks down it starts working. Outside of any metaphysical pretension to understanding, the work the subject does is to intuit from its surroundings how to adapt itself to them, either to perish or to make use of elements that are there. When the ground falls from below my feet I don't scramble to find a reason to stand upright. The same is true for intellection, for intellectual apprehension.

When faced with the minimally unfamiliar, the next in a superhero franchise, I can go with the flow. I go with it unless it loses me or I lose it. I'm here concerned with me losing it. It losing me will follow.

I lose it and burst through to the thoroughly unfamiliar. In other words I have not adapted myself in time but I have if it is a matter of duration. An interval opens that is there all of the time.

I had not been aware of it. Now it imposes itself on me. Either all of a sudden or by slowly creeping up, these are the two modes of intuition, that it is instantaneous or follows the contour of the things happening in the film. In the second case I am travelling with a minimal subject, a subject so strung along that it is oblivious of the risk.

When I'm so involved I am oblivious I am following my intuition. In the zone, I am in the interval but what is happening is a detour. A shock may come at the end of it, the shock of lack of recognition, of the failure of recognition.

The film may come to a dead end. The problem it sets, the question it asks, continues. This is there all the time for the adaptation to our surroundings in the interval between what is sensed and its selection.

Elements are selected for their usefulness to us and their selection is largely intuitive. We have familiarised ourselves with it to the degree it does not involve an active effort directed towards trying to make sense of the unfamiliar. The selection is then for an action.

The interval of intuitive activity going on all the time in surroundings we know, in genres we have general knowledge of, Bergson puts down to how elaborate and complex the nervous system is in humans. In it, there is always delay. Even when no intellectual effort is required there is delay between perception and sensation.

Bergson says this is always coloured by affective states, by moods and feelings, and that these as well as the process of making sense are influenced by memory. What contours they are we are following in a romcom is being selected as we go by the states elicited in us by events in the film in connection with our expectation and recognition. Time is so far comfortable, unless the contour should drop away and we find we've pinned all our expectations on false promises.

Everything is up in the air. What does this look like? It looks like physical pain insofar as no matter how we try and recoil from it we are thrown back on the body as if, not the emotional journey we were on but, it is the source of discomfort.

Intuition engages memory, emotion and intellection. Intellectual intuition, given the normal run of things, tends to laziness. It tends to take all flows for that flow affecting everything and everyone around while effecting nothing.

Once out of the flow, I'm on my own pressed up against and having to recognise my body as its source. My outer experience goes to inner experience. Outer experience takes a detour through inner experience, experienced as duration.

Now this flow does effect something. It produces inner experience. This inner experience is neither mediated nor reproduced.

It ceases to be the flow of consciousness imagined apart from the body. It ceases to be the flow of film imagined apart from the mechanism. Either one or the other is set in the ideal light of the mechanism to be continuous and automatic.

The automatic flow of consciousness suffers a delay, is detoured by the film, comes up against itself and its own mechanisms in the body of duration. This is not usually the case. Films are usually made to escape the flow of time not in this way but the fact of that escape proves something about the nature of cinematic time. It belongs to duration.

Belonging to duration the time of inner experience and cinematic time are discontinuous. They do not approach time as a substrate. They are not asymptotes to time's arrow.

The advent of cinema is a challenge to time's arrow that it meets by assuming it as its own. Time runs from that advent to the point tomorrow it may run out for us. This is not to take no notice of the detour and delay in duration.

Time as the medium in which we swim does not flow. It has oceanic depths. It is even chaotic. Then film comes along and seems to put it in order.

Second, to the object, as product of history and of history as product, we might as well talk about a genesis of film. Film belonging to duration that does not flow evenly between points A and B is presupposed by the logic of time Russell finds for in the cinematograph. Its unevenness approaches to chaos and from chaos comes the order of the word.

Films are not then generally made to support the detour and delay, the deeps of duration. They are generally made to support the continuity of time and historical contingency, the historical contingency of different times. Detour, delay, escape from the order imposed on our times needs a noncontingent time.

Duration, writes Bergson, is absolute. It is also indeterminate. Its indeterminacy is absolute.

Jordan Schonig's primary research, presented in the article "Contingent Motion: Rethinking the 'Wind in the Trees' in Early Cinema and CGI" (2018),² gives evidence of noncontingent time in cinema. Schonig's findings are the basis for what I'm saying here accords with Bergson's view of time. Rather than on his thesis about contingent motion, the view I'm laying out of cinematic time, what it is as much as what it is not, is based on what Schonig turns up about the early history of cinema.

The "wind in the trees" in his title refers to the Lumière brothers' film *Le Repas de bébé* that was part of the programme for the earliest public cinematic event. Taking place in

²

https://www.academia.edu/36112597/Contingent_Motion_Rethinking_the_Wind_in_the_Trees_in_Early_Cinema_and_CGI

Paris on 28 December 1895 it began a campaign, that although commercial was almost military in extent, to get cinema to every country in the world. Two years later this cinematic war machine had largely achieved its objective.

In 1896 the Lumières even sent an employee with a cinematograph, from what was by then their factory in France, to Russia for the coronation of Tsar Nicholas II. They said to him "to let neither kings nor beautiful women examine its mechanism." Mark Cousins, whose book, *The Story of Film*, 2004, I'm drawing from, notes the rapidity of the spread of cinema. It is remarkable and, like the fact the first full-length feature was shot in Australia, not entirely commercially explicable. Cousins says, "Socially, technically, politically, artistically, philosophically, transcendently, nothing about it was yet pinned down." (29)

Then he goes on to deal with the shot. Cousins describes it being "a piece of visually recorded action extended roughly in real time". He adds that for us the strangeness of the shot is "muted by our familiarity with it." (29) Just as I don't think commercial interest is all there is behind cinema's rapid global spread, I don't think that this is all there is to it and I think the two are linked.

Rough or relative extension in real time doesn't give us what is essential to the shot. Strangeness does. Cinema's conquering of the world and the shot are linked by strangeness, by the mystery of the shot.

Cousins moves on quickly from the invention of the shot to the juxtaposition of shots forming a logical link, that was a precursor of montage and the cut. For him the unity of the shot and so its invention comes with juxtaposition. It is a later development.

The cut usually claims more attention for belonging to the language of film and not natural language. Film has a logic, worked out technically, that is all its own. The strangeness of film cuts and of montage may remain but according to this logic these are thought to be more or less contingent on the unity of the event and in the service of sense and story.

Strangeness is usually sacrificed to the not so strange, to continuity. They are put at the convenience of a view of time having the unity of a continuum and being divisible, cuttable. This continuity is the same unity of the event that Russell substitutes for temporal continuity and exists for the same reasons, to uphold the reasonable progress of our knowledge of measurable entities allowing science to facilitate that activity called human progress. It is also a view of time Bergson calls spatial. It is geometric.

That the cut is inexplicable in terms of natural language makes it strange but it is really only strange because of a view of time it is used to support, as Russell does. Moving images in general are used to support a view of time as divisible continuum where the unity of the event is relative. It has relativity, can be measured and in Bergson's view spatialised.

Our familiarity with the logic of the cut and of montage, however illogical the juxtaposition of images is, leads us not to acknowledge a deeper familiarity, one that is engrained in us, with the cinematic time of the shot. Its mystery is occluded. The familiarity that mutes the strangeness of cinematic techniques, that go to a knowledge of its language, mutes, burying it more deeply and muting it more thoroughly, our deeper familiarity with the mystery of the shot.

What the shot shows is radical indeterminacy. It is an indeterminacy as absolute, as duration. This is what our familiarity covers or screens and hides, the way these things go, in plain sight.

What gives the shot unity is the unextended event of duration. Although it might in space, the shot does not extend in real time but in cinematic time. Cousins says that it is a piece of visually recorded action, and it is, although this puts the emphasis back on action.

As a visual record of action does its playback amount to action? The emphasis on action, as in Russell, stays at the level of what is represented. At this level film impressed neither Bergson nor Freud.

Bergson was interested in slowed-down footage for the demonstration of natural processes not seen by the human eye but both he and Freud considered early cinema, with its chase and action sequences, for the sake of either philosophy or psychoanalysis, not worth serious examination. Philosophy and psychoanalysis would later find the complete opposite. Schonig cites Siegfried Kracauer, a friend of philosopher Theodor Adorno. Both gave serious thought to cinema from outside its practice.

History is told, including the history of cinema, from the point of view of time that has been victorious, not from the point of view belonging to audiences, the point of view I'm arguing that led to its global conquest. There are then two cinematic times, the one that can claim victory and has prevailed for a century and a quarter and the other that I support and find a basis for supporting in Schonig's "Contingent Motion: Rethinking 'The Wind in the Trees' in Early Cinema and CGI."

The window for any kind of rethinking of early or later cinema is brief but is part of the historical record. If its brevity is to blame for its obscurity so is that history. It is after all a point of view of time that is at stake. It bears on how we see history.

History then intervenes, both with filmic representation, with cinema as medium, and in terms of its relation to time. My parents' generation learnt of the world from films at the cinema. My father saw the footage of the camps being cleared and never forgot it, so it is part of how we know. Today because of deep fakes this has never been more a matter of contention but again rests at the level of representation.

The question might better be raised of fake time, a simulation inclusive of the historical record whether filmed or not. Cinema fakes time. Russell saw this and saw in it a way to peg time on to the abstract points of its articulation.

This would be a mathematical and calculable time, a time available to ratiocination and therefore a rational time, but in the history of cinema and in the representation of history, filmed or not, Russell's view of cinematic time gets confused with time pegged back on to movement, action, the reason Ó Maoilearca and Ansell Pearson accuse Russell of answering a paradox with a paradox. It is then the case that we lose from the history even Russell's cinematic naturalism, his naturalisation of cinematic time. In its place we get the idea, in the history of film, that cinema developed from other technologies that exploited the phenomenon of retinal retention, zoetropes, stroboscopes, phenakistoscopes, flip-books, magic lanterns and the electrified versions of these in the Nickelodeon.

We lose what is altogether new about film, its relation to time. Instead we get the spatialised account but I would say we know, and we know after the advent of cinema

and because of it, the idea of one thing following another, one event after another, whether it cause it or not or is to an end or not, to be false. It is false but scientific, because, says the philosopher Karl Popper, falsifiable. Its falsifiability indicates that each event in time occupies an abstract point and is in fact a variable placeholder.

An event names an articulation on the time line and of the time line, so we have alternative histories and revisions of history, setting other events in the places formerly occupied by the ones that whoever wrote the histories was interested in, the visual record having largely been exempt from this process until digital manipulation and AI. There is still the confusion between what Zeno made of time and challenged and Russell's view. What this means for cinema is in the first instance that *L'Arrivée d'un train en gare de La Ciotat* replaces *Le Repas de bébé* to invoke cinema's novelty.

Coming a year after *Le Repas de bébé*, *L'Arrivée d'un train* in 1896 is still inside the window, made use of by the Lumières to conquer the world, of cinema's unfamiliarity and of the strangely compelling nature of the shot. The responses to the two films differ as much as their subjects. In *Le Repas* a baby gets fed.

L'Arrivée d'un train is sensational in comparison. It is kinetic. A train hurtles towards the audience.

The angle is low and it seems like the train will burst through the screen. At least the histories tend to this view, and the audiences, immediately under its spell, are terrified. They duck behind seats and run down the aisles for the exits.

All this is meant to attest to a value, still placed on the moving image, of its kinetic energy. From this comes its sensory impact. Movement, action is meant to engage like no other spectacle and the power of cinema is its representation.

Take this forward, in cinematic terms, fast forward a century and a quarter and there is the virtue of virtual reality being touted in the same way. It is not just moving images. In it we can do things.

Agency is all and this for Bergson comes from the body being above all a centre of action. It has an evolutionary explanation. A feminist critique might ask whose body and if it is the same as has historical agency and would be right in doing so.

A gender bias exists towards the active body to the point that the female body has been thought not to be one outside its reproductive function and this has brought about the compensatory claim that female bodies too must be considered centres of action. There is always the same focus on action, on performance in philosopher Judith Butler's terms and on the engagement of women in public affairs. There has been a politics of engagement but this is to ignore what Bergson is saying prompts it.

The series of metaphysical presuppositions up to the body as a centre of action predates but gets reinforced by cinema. It is not innate to it any more than movement is the measure of time. Like that view, although for Bergson we have evolved to see things this way does not mean it is natural.

Because it is an evolutionary series it diverts from a sense of duration. Such a sense is not instinctive. Neither is that of the other major de-centrings.

The earth is not the centre of the cosmos. Humans evolved, were not created and are not set apart from the rest of creation. Neither are men set apart from women nor are they exempt from biology but are a single species. The last is of what is first for the development of the individual, the de-centring of the will that drives me and of the I that thinks it does.

These de-centrings, taken from the lessons of Copernicus, Darwin, Marx and Freud, have become like children's stories but the way to compensate for past injustice has been to put oneself, specifically one's body, at the centre of the action. The struggle of the anthropocene is with a de-centring that has everything to do with time. It calls on us to act in a timely fashion.

To each de-centring along the evolutionary line, from egocentrism to anthropocentrism, stopping at class, race and gender on the way, equates a similar despair, How can I do anything to change the way life exists or to ensure it does? If it has been this long in preparation, how can I do anything? How can I measure my life against geological time?

All I seem to be able to see is time unrolling in front of me and reeling up behind me into the knowledge of what will happen. For Bergson, and this is what his own de-centring is of, the brain does not have a separate evolution. Intelligence, reason, judgement and imagination evolve to serve the body that acts.

The brain is an image among images, he says, another reason to think of him in terms of cinema. However, again the obstacle to understanding Bergson, the body is too. It too is an image but, and here the de-centring, this means it has a time internal to it. It has its own duration.

Spurred by a distinction Ó Maoilearca and Ansell Pearson make I was thinking how difficult it is still to think duration. They are talking about Bergson's views on society as either an open system or a closed system. This is in *The Two Sources of Morality and Religion*, 1932, and they make the distinction in this context between what is inert and what endures.

It's easy to think about them being the same. The inert is what endures, like a stone, a pyramid or a mountain. Its endurance almost reaches a sense of geological time, but they are distinct.

The inert applies to a closed system and endurance to an open system. An open system need not be thought to be one of life but is any energetic system, anywhere there is an exchange of energy. Life is just a particularly good example but in what sense does it endure?

It stays with. It stays with being open, for as long as it can. Its endurance then is not of a state but of indeterminacy.

Duration is this staying with, with the problem, for example, and it is that before we act. It has the interval and is not so much timely as untimely. It takes the time that it takes for as long as it has the energy to do so.

Bergson explicitly links the *élan vital* with duration. It is as if duration were a source of energy. The duration of what endures does not take but gives the energy to do so. For an open system, this is in exchange, and change.

Then along comes film and once we familiarise ourselves with the notion that the train depicted is not going to burst into the auditorium we can sit still for a whole film and not act. So the film is fulfilling the function of duration. We are sitting with it and open to it.

We are open to its indeterminacy as a function of duration but, being so is only because we are inured to the novelty of it. It is familiar not mysterious. We would have to be in

that first wave of cinema to know what that felt like, the radical indeterminacy of the image and a sense made compelling because it was one of pure duration.

Back to Schonig's findings, there we find at the start of cinema an audience response that was less sensational than a year later at the showing of *L'Arrivée d'un train en gare de La Ciotat* but more profound, and that prepared the way for it. It also prepared the way for its occlusion by the later event, for the mystery of the shot to be eclipsed by the myth, that they ran for the exits. It was the response to *Le Repas de bébé*.

The film shows a bourgeois family scene. Mother and father feed a baby. They are Marguerite Lumière, Auguste, brother of Louis Lumière on camera, cinematograph, and Andrée Lumière, the baby.

The action may be thought negligible. Coffee is poured. Marguerite drinks it. Louis is more involved with feeding Andrée. The film is a single take and the shot is static, one shot from a tripod and it is of course silent, but it was the first time an audience had seen it and even with such little action it might be thought that it would be the subject of the film which would grab and hold an audience.

Comment was instead made on what was incidental to the shot, in the background, that was in Schonig's words contingent motion. This was the movement of the leaves on the trees. The comment from the audience that is preserved is the exclamation, The leaves on the trees are moving!

The preconception an audience of 1895 would have taken with them to the Salon Indien at the Grand Café, Paris, could only have come from theatre where seeing people moving about, animated by various tasks, whether mundane or significant, would have been commonplace. In the theatre the audience might even have been familiar with

special effects, particularly storms, stagehands potentially shaking the scenery, a canonball rolling down a sheet of metal, lightning flashes from either flashpots or gas flares. This is not what they saw on screen.

They saw something qualitatively different and they thought it was remarkable. Cinema, a later commentator cited by Schonig said, captured nature in motion. Other writers reviewing the same evidence have said the same thing but what sets Schonig apart is his interest in the ontological status of this contingent motion that cinema reproduced and his introduction of new evidence of the effect it had on audiences.

His thesis is that CGI in trying to get hair right, in its texture and its movement, and reproduce other phenomena as they look in nature picks up on the special ontological status of contingent motion. He shows that for cinema it had this status from the start. He describes the establishment of what was the first cinematic genre as dealing specifically with contingent motion, the wave film.

Wave films have as their main subject the motion of waves on the sea. There may be people in the shot, a rowboat or spectator to the scene, but it is they who are incidental to it. What mattered to audiences and what they were into was the waves.

The same can be said of other sorts of contingent motion Schonig mentions, the dust rising from a wall being smashed by a sledgehammer, an effect accentuated by its silence, smoke billowing, leaves rustling without sound, water splashing from a garden hose. Effects that are not at all special, not to us, were the subject of discussion and comparison. It was common, says Schonig, for films featuring these effects to be repeated in the same programme, two or three times, so that audiences could take in all the details.

Their repetition reinforced for audiences their special status. It is not surprising then that film-makers and programmers of cinematic events catered for their popularity by making and showing films that dealt with these subjects. Neither is it that they became codified into a genre of film.

To say the element of contingent motion has a special status, an ontological status, as Schonig does I think does not go far enough. It doesn't say what the charge was, where it came from, the thrill and the hit that audiences got, but key to this is I think that word, contingent. Like incidental it can mean both random, accidental and independent and also dependent, being contingent or incidental on, but trivial, and by contingent motion mean that the leaves in the trees are moving independently of the action in the scene as well as that their movement is there a part of the scene that is inconsequential.

This movement gains in consequence, so its incidentality ceases to be incidental and tangential, by being singled out as the scene's main subject. The other meaning comes to the fore. The waves in the wave film carry the weight of the film for their independent and chaotic movements.

The mystery is, how? The audience did not need to be familiar with physics to know that waves move like this, leaves like that and smoke and water in the ways that they were shown on screen. It was not to waves in their mode of being waves that the special ontological status was attached.

The waves' contingent motion is not an ontological mode that can be attributed to waves off screen. Contingent motion in general is not an ontological mode except on screen, in film, where somehow the physical laws of motion obtain but not those of

time. The way of being, in other words, of these waves is consistent with the mystery of the shot.

Contingent motion is a mystery, has special status and a special charge, when it is shot on film. The shock of it on film is due to it being able to be re-played. Re-played, in the same programme, every detail remained the same.

In every detail of the spray off the crest of a wave its indeterminacy endured. That's what grabbed audiences about the early cinema, the replayability. What audiences were doing in comparing the wave from one showing to the next was looking for the random details that confirmed this wave was the same as that.

How could the absolutely unique be reproduced? These were not the sort of technical geeks who looked on all this as a technical accomplishment. The interest lay for them outside of the image's means of reproduction and replayability.

The charge was not from the technological novelty of the cinematograph and cinematography. That a slice of real time could be replayed was more than enough cause for excitement. What verified it as real time was that in it there was moving a thing like a wave or like smoke or like leaves, at random and, in nature, with a movement absolutely unique and unrepeatable.

The moving image captured the authentic and unique thing. It reproduced it, enabled it to be replayed, with the mystery of its aura intact. Aura is the word Walter Benjamin will use in 1935 for this phenomenon in his essay "The Work of Art in the Age of Mechanical Reproduction."

Contingent motion is the name Schonig gives to it. Its contingent motion proved for its earliest audiences that what they were seeing was real. This is how it prepared for the shock of the arrival of a train at La Ciotat station, when in 1896 taking it for real audiences hid behind the seats in front and ran for the exits.

It is also how the shock from the aura and mystery of the shot gets not undermined but covered over and, although he was as unimpressed as Bergson by cinema, all it had to offer was action and chase sequences, it is in this that *L'Arrivée d'un train* resembles what Sigmund Freud called a screen memory, the greater shock covered over by the lesser shock that needs it for support. The lesser shock puts a screen memory, the myth, over the mystery of the shot. What compelled audiences was also what scared them, the fear and excitement of being able to see the past being replayed.

From this screening out of an initial fear comes the reversal that Deleuze takes note of in the preface to *Cinema 1*. Time related to movement. Then the relationship is reversed and movement is contingent on time, as in Russell's example of a time divisible no longer by movement but by its own articulations, like a film.

The codification of the shock, the charge, the source of fear, the thing that compelled an explosion of interest globally in cinema, into a genre of films dealing with subjects moving independently, their movement free of artifice, did not occur to control and box it in, to lessen its effect but to heighten it, to attend only to this new shocking thing. Genres are like plateaux, to intensify a specific pleasure. Their codification is in acknowledgement of what can't be contained in the box, on the screen, the uncontrollable that is surplus.

It wasn't to relax audiences for the confrontation but to focus in on it. It wasn't to make it so they could recognise it and know what to expect. What happens, just as for anorexics, is about directing and controlling the control.

Anorexics don't, although they are often said to, seek to regain and assert control of bodies that are taken over by others, but of what they recognise as a control, in this case the control from mealtimes and set menus, set to control their appetites. They release them. By so doing they gain the pleasure of intensifying them.

Now in that surplus to codification of either what is eaten or what is on screen is found a production of desire that takes note of what breaks from the code. Whatever exceeds the genre, that is new possesses the thrill of its novelty, certainly but the thrill more of a break, a cut that can be said of cutting, a treating-of-oneself. It has to do not so much with transgression and the breaking of taboo as the intensification of it, of its enjoyment. Control is enjoyed, how deep shall I go when cutting myself?

Control is not the object, but the cut itself. How deep can I go and how close to the edge? How much is in me before I tip over into the chaos represented by the object? It's not seen as death this instinct that pushes and probes towards it but a source of life, a source of life because a source of desire with which duration is explicitly linked.

Thought is not in pursuit of the unthought. Action's not to get to a point of inaction. They are to trace out the outline of what exceeds them, reaching its edge, with everything at stake, risking everything.

That excess of desire in the object is not harnessed but aimed at and sought. Codification is for what differs. Pinching the difference until it's miniscule intensifies its pleasures.

Not eking it out incrementally, getting it all in one tiny hit is what I would say our so-called addiction to the small screen of cellphones is about. They were not technological geeks, but these aficionados of the wave films were the first geeks. What is the essence of geekdom?

Pinching difference until it is minute and revelling in it as if it makes the biggest difference. It makes the biggest difference, the difference that is barely there, the slightest movement. This is the hit.

Deleuze's time commanding movement is Russell's time. All I'm saying could be much more simply put if I said, because the image moves of itself it is thought to move in real time. Bergson conducts his Copernican revolution then along comes cinema and puts everything up in the air.

Cinematic time is taken for real time but it is not even cinematic time. Cinematic time is not inert. It endures.

Psychological time, the time of inner experience or, as Bergson puts it, reflective consciousness, is taken for cinematic time. It too is not even cinematic time. It too endures and endures in the tiniest movement.

It endures in the tiniest interval of movement. There is the indeterminacy proving the image is one of real time because it has its genesis in chaos. This is what the advent of cinema brings.

It is as if because it can be repeated duration is not duration. The cinema relates the radical indeterminacy of the image to the interval. This is neither its running-time, clock-time, nor is it its subjective time but nor can it in any way be said to be objective.

Rather, like in dreams, what endures in cinematic time is time suspended, noncontingent, and outside of time. It breaks with any preceding concept and opens onto a duration. But it provides this duration with the means to be covered over, and still it endures.

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