“All Consciousness is Something”: Bergson, Deleuze, and Carrel on the Problems of a Scientific Application of Cinema

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Abstract

Henri Bergson’s critique of the cinema appears within the fourth chapter of *Creative Evolution* (1907), a book that offers an alternative (or “creative”) account of evolution through an explanation of time as it relates to both biological and psychological processes. In several places, Bergson uses the example of the cinematic apparatus to illustrate the ways in which the human intellect traditionally approaches reality. Yet, for Bergson, the cinema provides more to his argument than a mere analogy. Cinema’s reconstitution of movement via the animation of still images reproduces the conditions for the most ancient illusion of apperception: the illusion that movement, both real and cinematic, can be understood on the basis of intellectually decipherable parts (i.e., time elapsed and/or space covered). This inability to perceive movement in the “present tense” is, according to Bergson, the perceptive error necessary for the proper functioning of the intellect: to analyze the ‘living’ as regards the ‘inert.’ Hence, the intellect, and by extension the cinema (as product of the intellectual endeavor to record and illustrate movement), approaches its subject according to a spatial mechanism (as spatial data), and therefore, according to Bergson, decomposes real movement (“duration”) in terms of discrete instantaneous sections that succeed uniformly from one to the next, a mechanical process referred to abstractly as “time.” Arising from the thesis that evolution is indeed a ‘creative becoming’ (thus against the notion that evolution is estimable merely by reference to teleology or mechanism), Bergson’s critique of the cinematographic illusion characterizes the natural inability of the intellect to understand life: the intellect represents phenomena according to a series of states, and, consequently, allows no avenue for appreciating phenomena as it spontaneously unfolds. That a certain type of historicity is always-already present in the mechanical projection of the cinematic image (“the future is there, rolled up, already painted on the canvas,” as Bergson writes)[1] becomes coupled with Bergson’s conception of the simultaneous growth of the intellect and its idea of matter. The concept of ‘matter’, as a spatial, quantifiable “something” that is, for Bergson, a purely analytical ideal, has no real existence outside of the intellect, just as, analogously, the photograph (as an indexical representation of space) depends on the prior existence of the camera. The result is Bergson’s prognosis that the cinema fails as a means for advancing a vitalist philosophy beyond the conditions of intellectual perception (at least as far as his 1907 account is concerned).

Here, however, arises the first of two interventions, both of which I will briefly sketch, achronologically: the appropriation of Bergson by Gilles Deleuze in his philosophy of modern cinema, and secondly, the appropriation of Bergson by the French biologist and filmmaker Alexis Carrel in his cinematic explorations of cellular life. Both interventions reconsider ‘Bergsonism’ within an affirmative appreciation of the film image. For Deleuze, this intervention occurs primarily as an historical revision: a claim that Bergson’s earlier conception of the movement-image (from *Matter and Memory*, 1896) prefigures notions of movement in modern narrative cinema, as opposed to the early cinema that Bergson was familiar with, and arguably referring to, in his treatment of cinema in 1907. Carrel’s thesis is perhaps more complicated as it takes the form not of a revisionist corrective to Bergson’s original thoughts on cinema, but rather attempts an ‘applied Bergsonism’ in the form of his experiments in filmed microbiology—thus advancing an example of a ‘Bergsonist cinema,’ in 1914, that is neither narrative nor modernist. To suggest that Bergson had an uncompromising antipathy for his contemporary cinema is, as historian Tom Gunning points out, at least biographically inaccurate.[2] Later in life, Bergson expresses an appreciation for certain pedagogical uses of early film, citing for instance François-Franck’s use of animated serial photography to show the phases of cell division.[3] Yet, it should be noted that Bergson’s appreciation neither retracts nor contradicts his earlier indictment of cinema as a fundamentally intellectual enterprise. Rather, I argue, through both Deleuze’s revisionism and Carrel’s ‘applied Bergsonism,’ that the ingenuity of Bergson’s conception of the intellect, as a mode of perception fundamental to the formulation of intuition (i.e., Bergson’s method for understanding durational time), must be reevaluated according to the idea that Bergson’s philosophy is neither ‘anti-intellectual’ nor ‘irrationalist’, as is often cited, and should be understood instead for its complex interplay between these dual modes of knowing outlined by Bergson, between the intellect and instinct, and between matter and duration—a problem reenacted in Bergson’s own conflicted appreciation for cinema.

Inaugurating Gilles Deleuze’s two books on cinema (*Cinema 1: The Movement-Image* [1983] and *Cinema 2: The Time-Image* [1985]) is a description of the three elements that make up Bergson’s theses on movement, as culled from Creative Evolution: (a) of movement conceived from the space covered, i.e. movement relating to the objects themselves, defined by their distinct character; (b) of movement as a spatial succession that translates from one state to the next (either as a mechanical succession, as in the modern scientific view, or as a succession between privileged instants or essential poses, as in the antique view); and (c) of movement as duration, as a spiritual reality that, constantly evolving, expresses the Whole (that is to say, duration understood as an irreducibly singular/indivisible movement—from which the objects of the intellect emerge as equivocal products). Deleuze’s theory of the movement-image (as well as the foundation for his theory of the time-image) derives from these theses, and from the conception of movement that Bergson draws out, more generally, in the opening chapter of *Matter and Memory*. Yet in order to construct a film theory from concepts originating in Bergson, Deleuze must reconcile one point: the fact that Bergson himself denigrates the cinema by comparing it to an intellectual (i.e. inferior) mode of perception that misapprehends the real conditions of movement. This misapprehension is dealt with explicitly in Bergson’s first thesis (that ‘movement is distinct from the space covered’), and the proposition contained inherently within this thesis that “you cannot reconstitute movement with positions in space or instants in time.”[4] The graphic understanding of movement that Bergson opposes (graphic in the sense that it accords to a sequence of fixed points in space a uniform succession from one phase to the next according to an abstract, mechanical time), is what, for Bergson, is represented in the functioning of the cinematic apparatus—an apparatus that reconstitutes movement via photographic stills. Of course, to appreciate the importance of this metaphor for Bergson’s thought, and likewise to appreciate the work that Deleuze must do to reframe Bergson in such a way to tease out from him a positive critique of the cinema, it becomes necessary to relocate this metaphor within the larger argument that it occurs, in reference to an illusion that, according to Bergson, is tied to the purely intellectual notion of

negation: the connection being that an action (and its corresponding movement) fills a void, and therefore moves from an absence to a presence. 'Movement,' in this view, would be defined as a progression from an original state to an objective result. The idea that the 'novel' emerges through a progression of stages ("something from nothing") epitomizes the "false evolutionism" that runs counter to the program of 'creative evolution' that Bergson defines in his work. This 'false evolution' is derived, according to Bergson, from a philosophical idealism that runs its course from early modern thought to an eventual idea of 'difference' (quantitative difference) that informs the birth of modern science and mathematics.

For Bergson, negation and/or abstraction is that which allows for sequential logic, which, when applied to the analysis of movement, is upheld by a formula of spatial difference over impersonal and homogenous mechanical time. The image that the intellect produces under normal circumstances (the image of the moving object presented in singular instances within a series of manifested states, an object that moves and whose movement is self-sufficient and exterior in relation to the intellect that observes it), represents at best an intermediary image of movement, an image that is 'actual,' but that cannot represent movement adequately in itself. By its necessary application of a sequential logic, what the intellect renders is merely the "snapshot view" of a transition. This view corresponds the images according to a series of oppositions set from one image to the next, and with 'movement,' conceivably, occurring in the interval. Bergson thus establishes the conditions for which the 'sequence' arises: as the dominant method for understanding movement, yet wholly inadequate for examining evolution in its creative aspect, for the fact that the sequence evades, by virtue of the fixity of its images, any direct representation of temporality: "If we pass (consciously or unconsciously) through the idea of the nought in order to read that of being, the being to which we come is a logical or mathematical essence, therefore non-temporal."[5] To think 'being' directly (that is, to think 'evolution' as it occurs spontaneously), without making a detour through abstraction, requires, for Bergson, the proper thinking of duration—a thought that can seek differences independently of all forms of negation: a thought that can "think," in other words, in terms of an irreducibly present tense. This thought, that is of a psychological rather than of a mathematical or logical essence, approaches the object on the basis of the subject's own perceptual bias and is thus able to contrast the duration of one object against another according to the natural articulations that define the differences between them (the ability to establish the identity of one duration as it occurs against the backdrop of the subject's own, entailing a concept of space and time inextricably linked to intuition, but not necessarily its product). This thought signifies the relationship between Bergson's first theses and his third thesis. When the first thesis (that 'movement cannot be reconstituted by immobile sections') is acknowledged against the second thesis, having to do with the perceptive lie that appears, in the mind, to reconstitute movement via discrete forms (either in the antique dialectical order of poses or the modern mechanical progression of any-instants-whatever), what is made possible is a third way of seeing (which Deleuze maintains as the possible 'other' way of looking at the cinema): "not only is the instant an immobile section of movement, but movement is a mobile section of duration, that is, of the Whole, or of a whole."[6] The same intellect that conceives of movement as the translation of immobile sections in phases (here, in the sense given to the any-instant-whatever, product of a graphic representation of movement tied to the methods of analytical science) can perceive, through a secondary meditation, the idea of a discrete section of movement (as something that can be represented by a mathematical equation) as a 'mobile section' in a transition towards duration (the Whole). "We take snapshots," writes Bergson, "of the passing reality, and, as these are characteristics of the reality, we have only to string them on a becoming abstract, uniform and indivisible, situated at the back of the apparatus of knowledge [….] Whether you think becoming or express it, or even perceive it, we hardly do anything else than set going a kind of cinematograph inside us."[7] The question therefore becomes whether or not the absolute starting point for an intuitive method (for seeking duration) is not likewise the starting point for the rational method (which decomposes and reconstitutes movement according to the immobile unit): that is to ask, whether or not the intellect can be outright avoided, or whether it is always-already a factor on the road towards an intuitive perception of duration (the pure immediacy of which, then, ought to be questioned).

Though the two philosophers, Deleuze in *Cinema 1* and Bergson in *Creative Evolution*, appear to disagree on the definition of "cinema" (Deleuze reads cinema as oriented towards the spectator's/director's identification with the durational image, while Bergson sees it for its mechanical operations), what they share is the sentiment that 'science', in its approach towards the movement-image, is incapable of seeing or analyzing true duration. Scientific analysis (given, for example, the chronophotographic experiments of Marey and Muybridge) is held by both Deleuze and Bergson to be incongruous with the idea of the movement-image, as the movement-image, whether defined as cinema or *against* cinema, is incapable of being known on the basis of an intellectual perception, as that perception necessarily requires movement's decomposition into analytical units. However, what happens when Bergson's "new metaphysics," initiated in his concept of duration and extended to his theory of the organism, is applied in the laboratory setting? Such an encounter occurs in the filmed experiments of the surgeon and biologist Alexis Carrel, who attempts not only to re-imagine a new form of 'scientific method' through Bergson's theories, but attempts, furthermore, to record his experiments via cinematography. In Carrel's laboratory, cinematography serves not an ancillary purpose, but, in fact, becomes essential, as Carrel theorizes, for rendering a mode of observation in line with Bergson's thoughts on intuition. This setting for a "Bergsonist cinema" occurs only a few years after the publication of *Creative Evolution*. Immediately, if Carrel's thesis and methodologies hold, problems arise both for understanding Bergson *against cinema* (a sentiment that Deleuze sought to do away with), as well as for understanding Bergson *against the intellect* in every instance (since Carrel's experiments would conceivably be intellectually useful for his research). More specifically, what appears to be at stake are the ideas propounded by Deleuze that early cinema ("primitive cinema") was that which was incompatible with Bergson's theories and that, once overcome with modern cinematic techniques (i.e. montage), would be essentially sublated by the 'mature' conception of cinema, which would therefore reveal Bergson's messianic prefiguration of the cinema in his earlier concept of the movement-image. Carrel's microcinematic explorations of cellular life were, as many film historians have pointed out, not produced in isolation; they were rather very influential on turn-of-the-century science, as well as on the rhetoric of the science film and early film more generally (together with the films of Jean Comondon, who 'invented' the microcinematic technique and, with Carrel, established this "new genre").

Carrel, who made his mark earlier in his career by pioneering vascular suturing techniques, turned his attention by the early 1910s to the study of tissue, in particular the study of cellular senescence, i.e. the phenomenon of "aging." This work coincided with his move to the United States in 1906 to set up a laboratory for cytological research at the Rockefeller Institute. Within this laboratory setting, Carrel proceeded to employ what historian Hannah Landecker has referred to as an "operationalized philosophy": against the norms of accepted scientific methodology, Carrel's tendency was to "tinker" with samples of tissue rather than to experiment in any "high-controlled, hypothesis-driven way."[8] For Carrel, this open-ended methodology would be the practical reenactment of a new scientific method equivalent to Bergson's own theories in *Creative Evolution*, in his descriptions of a methodology that privileges observation and the 'immediate,' intuitive knowledge that it yields. After 1918, Carrel develops an apparatus for studying cellular life *in vitro*, with the

aide of microcinemotography to record the movement of cells at the microscopic level, as well to make possible (and repeatable) his observations. At this stage, Carrel's 'Bergsonism' becomes increasingly relevant to his project. By culturing live somatic cells outside of the organism's body in transparent glass vessels and preserving cellular growth inside the tube by means of constant intervention, Carrel was, with the aide of the image produced by his microcinematic apparatus, able to isolate what he referred to as an 'image of a particular cellular mode of duration': an image reconstituting the duration of a particular kind of cellular formation. Carrel, at least in theory, 'perceives' these different cellular types through their natural articulations in duration, *qua* Bergson. He writes: "A tissue consists of a society of complex organisms which does not respond in an instantaneous manner to the changes of the environment. It may oppose such changes for a long time before adapting itself to the new conditions through slight or profound transformations. To study it at only one instant of its duration is almost meaningless."[9] Microcinematography, along with Carrel's interventions to maintain the life of cells *in vitro*, for a time, in endless proliferation, provides the means for observing movement at this level, at which point Carrel is able to catalogue the differences, from experiment to experiment. Hence, what Carrel produces is not a decomposition of movement, according to analysis, but rather an analysis of duration according to an implied idea of 'montage': the (mental) decipherment between the purely articulated movement-images representative of each cell type.

In his essay "The New Cytology," Carrel describes his work as appearing at a critical injunction in medical research. Classical histology had, up to the era of Carrel's work, accounted for the fundamental errors of cellular understanding: "Whether dead or living, dissociated on a slide or explanted in a drop of plasma, or sectioned and stained, cells and tissues have been considered as inert forms, unrelated to their environment and deprived of functional activity."[10] Carrel's accomplishment, then, would be to show cells in physiological continuity with their environment, through the method of a "close observation of the concrete event which a tissue is."[11] The method he establishes as the 'new cytology' would therefore conceive of individual cells and their situation in tissue as constituting artificially "closed systems" within the total "open system" of the organism. The function of Carrel's *in vitro* interventions into cellular life is therefore to isolate a kind of "durational unit" for understanding morphology and senescence, establishing a 'movement-image' individual to that group of cells, ascertained at a certain moment in their life-cycle. On the basis that duration, as Bergson described, does not flow at an "even rate" in matter, Carrel's microcinematography attempts to do what both Bergson and Deleuze thought untenable in cinema, to pin down a certain species of duration for an immanent analysis. If cellular movement relates those cells between which it is established to the changing whole that it (as tissue) expresses, Carrel sought to render this cellular movement in its most basic expression—in an image that renders the permanent, "immortal" sustenance of a certain kind of duration.

Although perhaps this artificial rendering of 'cellular immortality' was Carrel's downfall. His attempt to illuminate cellular life beyond not only what *he* could perceive, but beyond, to what cells themselves were capable of performing, is what best illustrates the paradox of Bergson's method. "[Things] are luminous by themselves," writes Deleuze: "all consciousness is something…. But here it is a consciousness by right, which is diffused everywhere and yet does not reveal its source: it is indeed a photo which has already been taken and shot in all things and for all points, but which is 'translucent.'"[12] For Deleuze, cinematic 'intuition' is the imperative to rid thought of its interiority: cinema expresses a 'thought of the outside' by rendering all life in a moving plane of images. Only through enabling the proper divisions that conceive matter intuitively, according to articulations in duration, rather than by the abstractions of quantitative time and space, can consciousness 'see' itself immanent in the matter that it strives to understand. What Carrel saw through his lens, as proof for the boundless growth of life, Deleuze saw in the very modes of cinema itself: to view the world as an infinite assemblage of moving images is to view the world cinematically – to open our thought into infinitely new directions.

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