A Cartography of Interstices: Some Annotations Toward the Mapping of Biological-Technological Embodiment

by Tom Zummer

[(pre)face]

While often presented as a defining condition of modernity, *technical reproducibility* has always been less an empirical fact of a certain contemporaneity than it is a structural possibility within artifacts, a condition which—for various and complex reasons—is both rendered salient, and also suppressed. On close inspection one is compelled to ask: what precisely is it that is reproduced within the framework of technical reproducibility? Certainly it is not an 'original' that appears as a consequent artifact of this industrial infrastructure—that is ontological nonsense. If that were the case it would be quite impossible to ever produce a mere 'copy,' since one would have (re)produced a mass plurality of 'originals' demarcated only by a relation of temporal consequence, and the distinction between original and copy would disappear.

. . . reproducibility has always reproduced itself, but never in an identical manner.

—Eduardo Cadava [1]

In the contemporary context, artifacts which have been traditionally conceived in terms of a unique deictic presence — *here* and *now* — take place differently via reproduction, appearing not simply as a plurality of individual instances, but as something both spatially (and temporally) distributed and mass-like (*massenweise*). [2] They take place not as a mere collection of unique occurrences, but within a logic of supplementarity that circumscribes and enframes the possibility of origin, which at the same time recedes. Walter Benjamin's problematics of *aura* are remapped from the claim to authenticity linked to the materialities of an originary instance to the ubiquity of artifactuality, within which the very claim, itself, takes up the place of the authentic, giving way to a reinscription of the auratic in *every* instance of reproducibility.

It is in this sense that the notion of the cartographic reappears as a tacit condition of reference to an absent, and sometimes irreal, embodiment. The consequences of such mapping, for example, between biological and technological registers, have led to curiously imprecise accounts of embodiment, from prosthetic extension, to the ergonomic extraction of labor, giving birth to images of cumbersome cyborgs and remote operators to avatars and conversational agents. The following notations are an initial attempt to trace certain contours (areas, territories, states) that might be addressed in remapping or remodeling a historical genealogy of biological-technological embodiment. [3]

[annotations]

1. *Démolition d'un mur*, Auguste and Louis Lumière, 1896.

In 1896, the film *Démolition d'un mur* by Auguste and Louis Lumière begins with three figures standing in front of two perpendicular walls, structures that we suppose must have been at some time the walls of a house. One of the walls extends from the foreground, left into the background, where the other connects with it and extends from that point into the right side of the screen. In the most complete version of this film, one man, whom we take to be the foreman (it is in fact Auguste Lumière), sends the other two men off-frame, one to the right, and the other to the left, while he remains in the center of the frame. The other men disappear, and, after a moment, one of them reappears in the small space between the wall and the left terminal edge of the frame, and sets to work. Seconds later the left-center wall collapses and the men rush to the pile of stones in the center of the frame; as the dust clears we see, in perspective, the space that the wall had masked. The scene has been composed, with Lumière's favored diagonal, in such a way that the two walls create a cubic space within the projected frame, so that the left wall is coextensive with the frame of the image, an attribution underscored by the reappearance of the man from off-screen, just behind the wall. His appearance serves to demonstrate the structural similarity between two aspects of frame and wall—a contiguity of real and imagined spatiality— since both subject him to similar sorts of appearance and disappearance. In both instances, that is to say, as represented and as actual, the disappearance is *real*. The spectacle of a tumbling wall is also based on the effects of movement upon the conventions of traditional perspective, and the cinematic frame is here revealed— (con)figured—as an omnipresent mask or window over a coherent physical space. The production of such coherent and logical *hors-cadres* ("off-screen spaces") is an effect of the presumption of a preferential and tacit contiguity connecting spaces of appearance and disappearance. Or, put simply, it is a problematic of *mapping*.

But there is another point to be addressed here as well: at some point, by accident, the film was rewound with the projector-lamp still on while some members of the audience were in attendance. Lumière was so impressed by the applause that followed the 'miraculous' reinstatement of the wall to its former position that he determined to capitalize upon this effect. *Démolition d'un mur* was a very popular film, and was often projected over and over again, forward and backward, as the audience sat transfixed, caught up in the play between *mise-en-scene* (casting or putting things into place) and *mise-en-abyme* (casting them into the abyss). That one state could be (constantly) transformed into the other, and back, suggests a dynamic (and phantasmatic) recuperation of time, grounded in specific conditions of technical reproducibility. [4] It, too, presents a problematic aspect of mapping: how to determine the terminal boundaries of an indefinite and discontinuous transformation between two, or more, immanent materialities expressed through an uncertain duration.

In *Démolition d'un mur*, the trace of history, even of such a local nature, is rendered salient through an *arrestment of the image*, a patterned regularity satisfied by repetition, exceeding the limits of its representation (the originary event has, after all, passed away) into its inverse (back and forth *ad seriam*). It is not so much that Lumière's wall disappears, but that it continually threatens to disappear, that makes it so compelling; a threat rhythmically reproduced, over and over, forward and back, preserving itself through the cinematic arrestment as being always on the verge of disappearing. This is perhaps most true at the moment it reappears. It is, as Walter Benjamin might say, an arrestment that appears in the present as a history, or, more precisely, as a trace of the possibility of history. The possibility of history, figured in a trace, the survival—through arrestment and repetition—of a trace of what has passed away, bound to our capacity to read these traces as traces. The present "now-time" (*jetztzeit*) of the image stands for, in the place of, what has passed away, the absent (abyssal) event survived by its mere trace: the photo-chemical index of cinema's

presumed verisimilitude, [5] an indexical cartography of the real.

There are important questions that arise here: What are the terminal boundaries of a media artifact like Démolition d'un mur*? If we take it to be an artifact coextensive with the event of its projection, then the sense of the singular instantiation of the artifact passes away, and repetition renders cessation, a terminal 'end' both contingent and indeterminate. Is such an artifact permeable in itself, so that projection and its inversion serve as irreducibly linked topologies/tropologies producing a coherent specular event, one that is irreducible to its enabling elements? Is *rhythm* an artifact, and its *notation* the cartography of a territoriality that is irreducibly *virtual*? What is the relation of such a destabilized and virtual event to the spectator's sensorium/somatic disposition? Are there necessary or contingent limits on duration, attention, consumption? And how has it come about that we so easily determine the finitude of media artifacts, and consider that finitude to be of such an unproblematic nature?

All sorts of things happened in the early cinema. In *Démolition d'un mur*, the fascination of a wall tumbling down, and then casting itself back in place, was constant, and unimpeded by the tacit acknowledgement that *it is only a movie*. It was as much the display of the apparatus itself that constituted the spectacle, and often the ostensible content of a film was secondary, often just an ordinary, everyday event which was transformed by its passage through this clever machinery. In this early "cinema of attraction" the apparatus itself was inscribed into the specular field, and was, in fact, inextricable from the spectacle. This 'exhibitionist' cinema set itself apart from the 'voyeuristic' (or narrative) cinema that was then concurrently developing. The demarcations are not precise: both narrative and expository tropes often inhabited the same early films. Narrative spectacles, of the sort produced by Artemus Ward, for example, were quite popular, and Ward's magic lantern shows, panorama, and humorous glass-plate lectures were readily translated into cinematic form. [6] While these narratives had developed within, and as (an element of), technological spectacle they readily made the transition to the more voyeuristic, story-telling documentary, mode. Early 'reality-based' travelogues, such as the filmed excursions of Burton Holmes, performed a cinematic 'capture' of worldly exotica, while claiming an objective, neutral stance, and the apparatus is presented as merely recording the strangeness of distant peoples and places. At the same time there develops a suppressing or eliding of the presence of the camera/projector, as the technology becomes naturalized, and hopes of catching subjects—actors and spectators—unaware, forms a new proleptics of cinematic presence.

Even when Lumière's films consisted of a single scene, as in *Sortie d'dusine*, or *Barque sortant du port*, there was a formal patterning within the image-field that already operated as a highly structured narrative event. That is to say, that within the framework of early spectacle, so often thought to be a plotless recording of raw, unadjusted, untampered, 'reality,' there was a tacit, extra-cinematic structuring of events as narrative. Or, one might say, as immediately susceptible to narrativization. In contradistinction to the claims advanced for uncontrolled cinematic realism, films such as *Sortie d'dusine* (which was staged many times over) record events which already had a kinematic structure: the opening and closing of the factory gates for the arrival and departure of the workers occurred in an attenuated timeframe, dictated by the mechanics of a clock, and, one might suppose, whistles or bells. Consequently, the cinématographe took up a position as a recording device, aligned with other devices, within an already highly structured narrative event, one with discrete patterns, contours and closure. It is this relation of technical reproducibility within an already 'prosthetic' environment of linked human-mechanical operators where the unconscious tropology of phantasies and reflections will quickly organize around technologies of reproduction. The cartography of these

strains of phantasy or reflexivity, whether foregrounded or suppressed, constitutes an inherent and continuous substrate of media.

2. Projection and Narrativity, circa 1912.

In Syria, around 1912, there was a man who traveled from village to village carrying an old projector, a reflecting lantern, and a single reel of film. He made a regular circuit, putting on his cinematic spectacles, projecting the silent reel, and telling stories about the exotic people –Europeans—who appeared as flickering shadows on walls or makeshift screens in the various communities he visited. The film would occasionally break, and would be repaired with any adhesive readily at hand. This was a continual problem, and there was a high attrition rate, as the film became more and more worn and damaged. Sometimes the repair became a tacit edit, and shots or scenes fell out of sequence or were lost entirely. Moreover, as the man made his rounds through the various communities, the townspeople tired of hearing the same stories over and over again. Over the course of time something very like a traditional oral epic began to develop, so that after a while the man was telling stories not of the people who remained on the screen, but complicated extended narratives of their relatives, or children, or friends and acquaintances, people who were not present within the frame, but resided somewhere else, outside the image, in a sort of continuously evolving virtual off-screen space. [7]

The story may be apocryphal, but there are nonetheless certain aspects—repetition, variability, permeability, commutability, virtuality, a re-mapping of elements and referents—that remain endemic to the entire register of the cinematic and similarly to subsequent media artifacts. Media inscribes itself into subsequent media, and while certain of these basic structural and technological attributes have on occasion been intentionally refined and deployed as aesthetic, theoretical, or political tactics addressing the critical transformation of media, for the most part they have persisted in the popular public sphere as tacit conditions of possibility, where they are often precluded or suppressed by more conventional habits of consumption. There is, in fact, a good deal of anxiety about the containment of media and a sophisticated culture of apprehension surrounds the introduction of new works, new forms, and new technologies, a culture which defends notions of *representation* (as contradistinct from *action*), tradition (contradistinct from the *present*), *identity* (and not *plurality*) or *subjectivity* (rather than multiple, contextual/ambient *permeability*). The genealogies of virtuality are not in any sense 'contained' by an historiographical periodization, or necessarily indicated by markers such as 'new,' 'old,' 'post,' or 'contemporary,' but are to be found in a range of processes and practices which, for all of their familiarity and domestication, remain, on close analysis, exceedingly strange and problematic

3. Technic/Somatic Bodies

There are certain preconceptions involved in the linking of the body to a register of instrumentation. These are, to use a phenomenological model, the inevitable 'pre-understandings' of the world via the forms in which experience is given. Sensory phenomena are interpreted by analogy or metaphor in relation to our own somatic memory: a microscopic view of the body may be described as a *landscape*, individual hairs are like *the trunks of giant trees*, atoms are modeled as *miniature solar systems* and molecules constructed in tinker-toy fashion. Such descriptions situate things in relation to the subjective and collective lived experience of the body's contact with the world. [8] Strange microscopic things may appear charged with meaningful associations deriving from sensations of bodily proximity and familiarity, and conventional ways of reading, such that we inscribe

ourselves into a relationship with things that are almost familiar. Similarly, notions of inference and continuity, succession and consequence derive from the body's physical/cognitive disposition in the everyday environment. We do not encounter the world except as already embodied and culturally embedded. Moreover, the body's perception of itself also constitutes a psychic substrate, and the unconscious somatic memory that organizes lived experience is, itself, modified by specific technologies. These form other technical substrates of unconscious memory. Optical devices, for instance, alter the experienced scale of an observer's body, while at the same time changing the apparent place of that transformation, affecting our ideas of spatiality and temporality, causing us to perceive things as closer, or larger, or more similar, in relation to our own perceived bodies. Perception, linked to technological instruments, stubbornly apprehends different phenomena according to the most familiar tropes, habitual conventions of pictorial representation, and fundamental intuitions of the body.

The history of scientific experimentation provides us with a number of examples of the relations between instruments and the imagination. Such supplements to vision as telescopes, microscopes, and photographic apparatus are organized according to tacit conceptions wherein somatic inscriptions—of the body's *sensorium* into instruments, and of prosthetic perceptions into the body—are naturalized, producing an unavoidable perceptual bias in our relation to the instruments we devise. For example, the human *sensorium* registers stimuli in logarithmic, and not linear, increments, and so the systems and tools we employ —the acoustic decibel scale, the seismic scale for measuring earthquake severity, the magnitude scale for stellar brightness—are also logarithmic, in part because they reflect our propensity to perceive the world in that way. Other scales and types of detectors may increase the range of human senses—into the infrared register, for example— but they also translate data back into familiar intuitive forms. The difference between the optics of the eye and the camera is both marked and subsumed as it is naturalized, and there is a cartography, as well as an economy, of relations producing 'identifications' and suppressing differences. [9] The substrates of unconscious memory, technical or somatic, support an economy of translations, mapping recursively between perceptions and instruments.

There are memoirs and personal accounts in the history of the development of the electron microscope in the mid-20th century that sound eerily close to phenomenological descriptions of embodiment. For these scientists the microscope became, within limits, an extension of the operator in his/her interactions with the miniscule. The microscope became a prosthetic sense-organ, and microscopists became early cyborgs. And since almost all of the American electron microscopists in the 1940s and 50's used the same instruments, [10] their tacit and intimate understandings of their craft were quite uniform, and in turn, must have contributed greatly to the subsequent cohesiveness—even in popular magazine depictions—of their accounts of research into unseen realms. It is an interesting problematic. In optical microscopes resolution is limited by the wavelength of light. Electron microscopes using a beam of electrons, operate well below the wavelengths of visible light to form an image of very small objects. High-energy electrons can be associated with considerably shorter wavelengths, allowing far greater resolution. The transmission electron microscope uses a sharply focused electron beam passing through a metallized specimen onto a fluorescent screen, where a visual image—which can be photographed—is formed. The scanning electron microscope forms a perspectival image, although both magnification and resolution are considerably lower. In this type of instrument a beam of electrons scans a specimen, and those electrons that are reflected (along with any secondary electrons emitted) are collected. This current is then used to modulate a second electron beam in a television monitor, which scans the screen at the same frequency, building up a picture of the specimen. Electron microscopists, like the general

populace, experienced themselves 'transported by this instrument to an alien landscape,' [11] and the tacit conventions of reading 'landscapes' came into play in the representation of these invisible topographies by invoking and communicating common bodily experiences and pictorial conventions. The interface of operator/machine/ phenomena is modified—tuned—by both physical limitation and cultural presupposition. The intuitive perception of the resulting micrographs as everyday landscapes is further supported in that specimens were coated with a thin layer of metal atoms by spraying them from a low angle so that one might use the length of a 'shadow' (where a feature has blocked the metal deposition onto the surrounding support) to determine the 'height' of that feature, thus casting the electron beam's 'illumination' at 'noon' (rather than from the actual direction of metal deposition), and thereby constructing the micrograph in such a familiar manner that it does not intrude on the intuitive perception of the images as a 'landscape.' [12] In the process of refining the scientific apparatus the observer's 'lived experience' takes up residence in—is sutured into—the machine, such that one 'dwells' in the instrument, in a continuum of decreasing consciousness and increasing familiarity, moving from alterity to embodiment. [13]

There are many other such lived technologies. In the tacit interface of architecture, technology, perception and habit, we, as 'spectators,' are intimately inscribed into the mediated imaginary, taking up residence—momentarily, or permanently—within a phantasmatic technology, whether cinematic, televisual, immersive, or having to do with the habituated naturalization of our own bodies.

4. Reactive, Projective, Virtual

In 1923, Ivan Pavlov describes the reflexive "orienting response" of human test subjects to sudden noises or shifts in the relative luminosity of objects. Cinema provides a splendid example. One's pupils dilate, the brain's alpha activity diminishes, and there is a constriction of the small capillaries: attention is drawn to novelty in the perceptual environment. It is not surprising that cinematic strategies of sound/image composition, editing, and *mise-en-scene* also operate in this register. The human visual system, recognizing a change in luminosity as a change in form, gives unconscious credence to our investment in the fidelity of cinema's flickering *sensibilia*. We have already reacted to a moving image, the trace of a person, for example, as if he or she were present. We presume the deferred presence of somebody as having been, at some time, present before the camera such that it (the device, unintentionally) — or someone else behind the camera (intentionally) — has observed and faithfully secured the image of the person or event represented. But the camera itself, unseeing, [14] has been prosthetically inserted between the original subject and the (intending) eye of the operator, so that it circumscribes and subsumes the space of the spectator' perception, a 'camera-eye' which holds place for — *simulates* — the presence of the eye of the spectator, such that there is a presumed coextension — an identification and mapping — between the apparatus, the originary operator, and the present spectator, which serves as an evidentiary trace of photographic verisimilitude, a technically reproducible access to the real. It is an instance of the camera's penetration into human re/cognition, as happens when we look at a photograph of some person or watch an actor/character a movie. As the film unfolds before us, there are moments of sympathy or dislike, times when our hearts may race, or our breathing become shallow, hairs stand on end, and we become aroused, or terrified, or burst into laughter almost before we know it, as if the shadows before us have some privileged link to a present that has *not* passed away, but which, *once having taken place* — arrested in the trace of the image — is present at *every* moment, and persists, holding place for the potential recuperation of the real. Cinema is promissory: there is a strange *prolepsis* (*anticipation*, but also *cognition*) concerning technical reproducibility in this very social configuration, a presumption that the repetition of the real constitutes a privileged access to the

originary act or event— a strange, and modern, spatial conceit that locates the deferred and absent trace in some recoverable elsewhere.

While the figures on the screen may be insubstantial phantoms easily distinguishable from corporeal reality, the experience of motion in the cinema, at a physiological level, cannot be distinguished from the experience of real motion. As Christian Metz notes, there is a perceptual basis for the assertion that motion in the cinema is not a re-presentation, but a presentation, not the re-experience but the experience of motion, since the very same perceptual mechanisms that process real motion and apparent motion are brought into play in both cases. [15] Those same mechanisms for discerning the real enable our investments in the play of shadows, and there is an uncanny commutability between one register, the physiological, and another, the phantasmatic, such that there is a real engagement, and investment, in the illusions of the specular.

5. Mimetic Cartography I : Spatiality and Corporeality

. . . a universe comes into being when a space is severed or taken apart. The skin of a living organism cuts off an outside from an inside. So does the circumference of a circle in a plane. By tracing the way we represent such a severance, we can begin to reconstruct, with an accuracy and coverage that appear almost uncanny, the basic forms underlying linguistic, mathematical, physical, and biological science, and can begin to see how the familiar laws of our own experience follow from the original act of severance. The act is itself already remembered, even if unconsciously, as our first attempt to distinguish different things in a world where, in the first place, the boundaries can be drawn anywhere we please. At this stage the universe cannot be distinguished from how we act upon it, and the world may seem like shifting sand beneath our feet.

—G. Spencer-Brown [16]

Spencer-Brown's comments pertain as readily to problematics of cartography as to philosophy, to the unavoidable fact that a *map*, in order to be useful, must be false, at least insofar as it arrests, or fixes, as a representation, complex, active and fluid systems. Whether it resides in the representation of the shifting contours of a shoreline, or the disingenuous placement of a remote city as an incident of propagandistic disinformation, a map necessarily falsifies its referent. In addition, fundamental distinctions concerning inclusion, exclusion, interiority and exteriority set cartographic principles in relation with philosophical and logical precepts (among the proper names might be Leibniz, Husserl, Derrida). [17]

Recognition of the body's inscription into diverse practices as both subject and site is, in a sense, a commonplace of our modernity, and the concomitant economies and predations between center and periphery, between the places, limits and extent of bodies, has become so ubiquitous and mediated as to have become almost invisible. It is in the margins of this 'circulatory system' that the disposition of bodies in relation to technologies is most often rendered sensible, framed in a manner that causes us to take notice, to see through the reflexes and habits of an increasingly regulated life. Such topographies trace an intercessionary 'place' where the re-cognition and re-engagement of the body, in all of its increasing complexities, occurs. We are so familiar with ourselves, so secure in our embodiments—in what we presume ourselves to be—that we readily forget how strange, edifying, or terrifying those territories which lie just—intimately—beyond the artifactualities of identity really are.

There is an interesting confluence between certain words occurring in both English and French

which, depending upon the context, may be used to denote either objective conditions or subjective states. The word *disposition* may refer to a mood, temperament, or natural *inclination*. An inclination might just as easily refer to the physical condition of a body resting at an angle, as to a propensity, habit, or *attitude*. An attitude, while having to do with behavior, also has a precise meaning regarding the position of an objective body relative to specified directions. Attitude may also mean a posture, a settled mode of thinking, or a *disposition*. In French, *disposition* means a tendency, inclination or aptitude, while the word *dispositive*, which translates the English *apparatus*, as device or set-up, also connotes configuration, system, schema, or plan of operation. When one speaks of a *disposition of the body*, one may refer to its material conditions or tendencies as much as to its unconscious, subjective, or performative states. Moreover, it in inordinately difficult to draw a line, determine boundaries—or even, for that matter, to trace the contours of a mediating interface—between different aspects and registers of embodied being. Nonetheless, it is 'here' in the interstitial spaces of perceived signs and senses of embodiment—as lived being, collective or hybrid system, as a contiguity or metonymic presence, as a deictic (spatio-temporal) marker, as a trace or an interval—that a certain modification in the relations of interiority and exteriority has overtaken us, where the issues of the coextensive corporealities of biological/technological entities can be taken up, recognized, and grounded in a new phenomenology of bio-technics, a descriptive and analytical practice that avoids or remedies a certain impoverishment in our current philosophical vocabularies. [18]

5. Mimetic Cartography II: Mirror Neurons

In the 1990s neurophysiological studies of the motor systems in the brains of monkeys and of humans revealed the existence of a class of neurons with 'mirror properties.' Recent studies of the motor neuron system indicate that there appears to be a strict link between the motor organization of intentional actions and a capacity to understand the intentions of others. If a person reaches down and grasps a stone, or a flower, a certain series of neurons fire. This activity is regular, predictable and observable. The truly remarkable thing is that if another person observes this activity, the same series of neurons, in the motor cortex, the parietal region, and other areas, also fire in the same way. Where the conventional model for learned behavior, mimicry or empathy posited a rapid process of reasoning to account for observed actions, the model of mirror neurons presents a faster, simpler and more efficient means. While there are many implications in this, I will cite just one. Volunteers at the University of California, Los Angeles, were selected for a series of experiments using functional magnetic resonance imaging (fMRI) systems.

Participants in these tests were presented with three kinds of stimuli, all contained within video clips. The first set of images showed a hand grasping a cup against an empty background... [19]

The designers of the experiment had wanted to determine whether human mirror neurons would distinguish between several types of 'grasping" a cup—to drink, to remove it, to possess it—and they demonstrated that the human mirror neuron system did indeed strongly respond to the different intention components of the represented acts. While a consideration of the relation between actual bodies and mediated, represented, bodies was outside the scope of the experiments performed on this occasion, the implications for understanding what happens between different orders of embodiment, physical, substantive, virtual, are compelling and important. It is interesting to note that philosophers in the phenomenological tradition had long ago posited that one had to experience something within oneself in order to truly comprehend it. The implications of this research for questions of pleasure, pain, sympathy and empathy are suggestive. Notions of *mimesis*, in the

classical sense, having to do with aesthetics, realism or simulation are also recast, as are the 'cartographic' principles involved in the apprehension of the flickering shadows and *sensibilia* of cinematic, transmissive or digital projection, the recognitions of bodies, avatars, voices, traced, shaped and constrained within a diffuse and permeable 'body' where conventional distinctions between biological and technological bodies may no longer pertain.

6. Artifactualities: of Perception.

At the very beginning of a book entitled *échographies de la télévision. Entretiens filmés*, there is a citation, a remark having been made elsewhere which is now coextensive with its appearance here. [20] It begins with a bracketed ellipse, a diacritical textual convention marking an absence:

[...] Today, more than ever before, to think one's time, especially when one takes the risk or the chance of speaking publicly about it, is to register, in order to bring it into play, the fact that the time of this very speaking is artificially produced. It is an artifact. In its very happening, the time of this public gesture is calculated, constrained, "formatted," "initialized" by a media apparatus...

The words are those of Jacques Derrida, but they do not belong to him, and in fact there is something that appears somewhat artificial in that claim, and in the anxieties that are expressed here. Two philosophers, Jacques Derrida and Bernard Stiegler, are improvising before a camera, talking about the effects of teletechnologies upon the philosophical and political 'moment.' What is it to speak of a present moment within a situation of "live" recording? Especially when what we have taken to be as 'natural' conditions of expression, discussion, reflection, or negotiation have been breached; when in the very moment of their utterance [production], the words that one might speak—as a philosopher, as a politician—are swept away, taken up in a transmission which is coextensive with the event of speech, that is to say, as *artifacts*. When these words are simultaneously produced and re-produced, and distributed in a manner that is both plural and concrete, we must conclude, as do Derrida and Stiegler, that

...actuality is precisely, made: in order to know what it is made of, one needs nonetheless to know that it is made. It is not given but actively produced, sifted, invested, performatively interpreted by numerous apparatuses which are factitious or artificial, hierarchizing and selective, always in the service of forces and interests to which "subjects" and agents (producers and consumers of actuality—sometimes they are "philosophers" and always interpreters, too) are never sensitive enough. No matter how singular, irreducible, stubborn, distressing or tragic the "reality" to which it refers, "actuality" comes to us by way of a fictional fashioning. It can be analysed only at the cost of a labor of resistance, of vigilant counter-interpretation...

Stiegler and Derrida insist that one must never forget the full import, and impact, of this index:

...when a journalist or politician seems to be speaking to us, in our homes, reading on a screen, at the dictation of a "prompter," a text composed somewhere else, at some other time, sometimes by others, or even by a whole network of anonymous authors...

What consequences accrue to a situation when one's words, speaking as a philosopher, are no longer your own, when the conditions of responsibility, obligation, or ethics, as well as performative configurations concerning truth, culpability, or mode of address, remain linked to a "subjectivity" which has become dissipated, and, while in certain respects no less concrete, perhaps, but in its

distributed, mass-like, character, has become *phantasmatic*, an appearance without *substance*? The theorized "speaking subject" of only a few decades ago has become an empty marker, a place-holder for a reality uncontained and uncontainable by its image, a deferred substantive. It is a kind of inversion of the pictoriality that Heidegger describes in his later remarks on technics as the defining condition, and also the danger (*Gefahr*), of the modern world: the *enframing* of the subject as susceptible to being placed and displaced at will [*Bestellbarkeit*]; it is a displacement which is now both constant and masked, conditional and contingent, ambient and susceptible, a cartography taking, and holding place, for an absent referent. [21] Every supplement bears the 'truth' of an identity, without ever composing that identity—a passport, a credit record, a photograph, a license, even a reputation or rumour, are linked to the possibility of the figure that appears as 'origin.'

References

[1] See Eduardo Cadava, *Words of Light: Theses on the Photography of History* [Princeton: Princeton University Press] 1997.

[2] In Harry Zohn's translation *massenweise*, which literally means 'massive' or 'mass-like,' comes into English as 'plurality.' Samuel Weber points out some of the complexities masked by this translation. See Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, H. Arendt, ed., [New York: Harcourt, Brace & World] 1968/"Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit," in *Illuminationen. Ausgewählte Schriften 1*, [Frankfurt am Main: Surhkamp Verlag], 1955/1977. See also: Samuel Weber, *Mass Mediauras: Form, Technics, Media*, [Sydney: Power Publications] 1996.

[3] One of the defining characteristics of the modern era has been the increasing significance given to the *archive* as a privileged means by which historical knowledge and forms of remembrance are collected, accumulated, stored, and recovered. Archives, distinct from libraries, museums or collections, constitute an ordered system of documents and records, elements that may be verbal, visual, textual or technically reproducible, and often serve as a basis or foundation from which history is written, stabilized, modified and reproduced. Archives, databases, interfaces all have a very interesting relation to cartography, and notions of the technical inscription and preservation of memory, from the artificial memory-systems of the ancients to contemporary reference systems, such as those of Otlet, Warburg, and others are pertinent.

[4] See Auguste and Louis Lumière, *The Lumière Brothers First Films*, [New York: Kino Video, DVD K106] 1996, trt: 61 min.; *Landmarks of Early Film*, Vol 1, [Chatsworth: Film Preservation Associates/Blackhawk Films, DVDID4103DSDVD, 1994, trt: 117 min. See Walter Benjamin, cited above.

[5] See: Thomas Y. Levin, "Rhetoric of the Temporal Index: Surveillant Narration and the Cinema of 'Real Time,'" in *CTRL SPACE: Rhetorics of Surveillance from Bentham to Big Brother*, ed. Thomas Y. Levin, Ursula Frohne, Peter Weibel (Karlsruhe: ZKM/Center for Art and Media / Cambridge, Mass.: MIT Press, 2002). Levin goes on to describe the rearticulation and re-appearance of the documentary "image" as *style* — that is, as an index of the evidentiary, so that the surveillant look of the photo-chemical trace, hand-held or automatic camera movement, or technical glitches or infelicities trades its claim to verisimilitude for a rhetoric of spatio-temporal configurations in the service of narrative progress or closure.

[6] See: *Artemus Ward's Panorama* (also known as *Artemus Ward's Lecture*), Artemus Ward, [New York: G. W. Carleton] 1868.

[7] The author has encountered three versions of this story. Two versions occurred in conversation while traveling in Algeria in the early 1990s. The third variant is found in *Seeing in the Dark; A Compendium of Cinemagoing*, Ian Breakwell, Paul Hammond, eds., [London: Serpent's Tail] 1990. See also: Thomas Zummer, "Variables: Notations on Stability, Permeability, and Plurality in Media Artifacts," pp. 201–253, in *Saving the Image: Art After Film*, ed. Tanya Leighton, Pavel Buchler, [Glasgow and Manchester: Center for Photography/Glasgow and Manchester Metropolitan University] (2003)

[8] See: Nicolas Rasmussen, *Picture Control. The Electron Microscope and the Transformation of Biology in America, 1940-1960*, Stanford University Press, 1997. For a sustained and brilliant exploration of the place of the body as both a mode and object of perception see Susan Stewart, *On Longing. Narratives of the Miniature, the Gigantic, the Souvenir, the Collection*, Johns Hopkins University Press, 1984.

[9] See Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, H. Arendt, ed., [New York: Harcourt, Brace & World, 1968.

[10] See: Rasmussen, *Picture Control*. See also Thomas L. Hankins and Robert J. Silverman, *Instruments and the Imagination* [Princeton: Princeton University Press] 1995, for a technical discussion of the modification and naturalization of perception via instrumentation.

[11] Ibid.

[12] Ibid.

[13] Ibid. See also the discussion in Thomas Zummer, "Projection and Dis/embodiment: Toward a Genealogy of the Virtual," in *Into the Light: The Projected Image in American Art 1964-1977*, ed. Chrissie Iles, [New York: Whitney Museum of American Art/Abrams] 2001.

[14] Benjamin's comments ("The camera introduces us to an unconscious optics as does psychoanalysis to unconscious impulses," etc.) are to be found in "The Work of Art in the Age of Mechanical Reproduction," Section XIII, P. 239, in *Illuminations*, H. Arendt, ed., [New York: Harcourt, Brace & World, 1968.

[15] Maurice Merleau-Ponty, "Eye and Mind," in *The Primacy of Perception, and Other Essays on Phenomenological Psychology, the Philosophy of Art, History and Politics*, James M. Edie, ed., Northwestern University Press, 1964.

[16] G. Spencer-Brown, "A Note on the Mathematical Approach" in *Laws of Form*, [London: George Allen and Unwin] 1969, p. xxix.

[17] For example, Leibniz's notion of the *monad* was in part a response to Descartes' notion of substance, which he found wanting. The model of the monad as a 'simple' which is inclusive of both the material and the spiritual is an interesting precursor to modeling virtuality. Similarly, Husserl's discussion of *phantasmata* in *The Phenomenology of Internal Time-Consciousness* is useful in

terms of the distinction between immanent and transcendent in relation to technical embodiment. Derrida on frames in *La verité en peinture*, and on the archive in *Mal d'archive* are also relevant to a problematics of mapping.

[18] All definitions are from *The Oxford English Dictionary*, and *Le Petit Robert*.

[19] "Mirrors in the Mind," Giacomo Rizzolatti, Leonardo Fogassi, Vittorio Gallese, in *Scientific American*, November 2006. See also: "Action Recognition in the Premotor Cortex." Vittorio Gallese, Luciano Fadiga, Leonardo Fogassi, and Giacomo Rizzolatti, in *Brain*, Vol. 119, No 2, April 1996; "A Unifying View of the Basis of Social Cognition," V. Gallese, C. Keysers, G. Rizzolatti, in *Trends in Cognitive Science*, Vol. 8, 2004; "Grasping the Intentions of Others with One's Own Mirror Neuron System," Marco Iacoboni et al, *PloS Biology*, Vol. 3 Issue 3, March 2005; "Parietal Lobe: From Action Organization to Intention Understanding," Leonardo Fogassi, et al, in *Science*, Vol. 302, April 2005.

[20] See: Jacques Derrida and Bernard Steigler, *Échographies de la television*, [Paris: Éditions Galilée–INA] 1996.

[21] In the 15th century 'map' meant "to bewilder." [OED , (p. 149)p.1722]; also: a representation, an 'embodiment of virtue' (17th century).