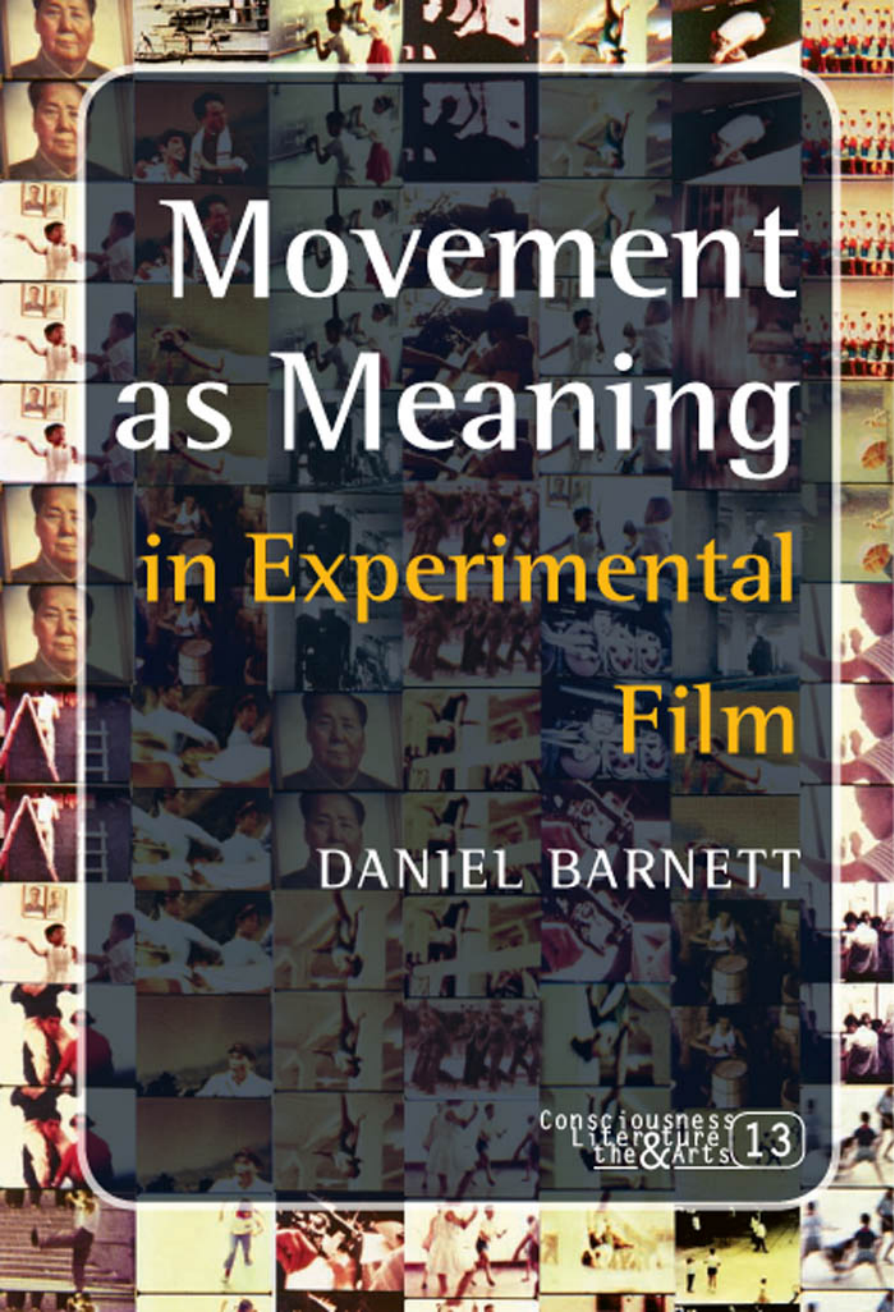
Movement as Meaning
in Experimental Film
DANIEL BARNETT
Consciousness Literature the & Arts 13

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In Experimental Film

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Rodopi

Amsterdam - New York, NY 2008

Cover Illustration:
Frames from *The Chinese Typewriter*

Cover Design:
Aart Jan Bergshoeff

The paper on which this book is printed meets the requirements of "ISO 9706:1994, Information and documentation - Paper for documents - Requirements for permanence".

ISBN: 978-90-420-2385-7
ISSN: 1573-2193

Printed in the Netherlands

Table of Contents

Part I:
Modes of Perception and Modes of Expression

Part II:
Dynamic And Syntactic Universals

Part III:
The Moving Target

Movement as Meaning

In Experimental Film

"He would set a straight course, only to look back
and marvel at his degree of error."

- John LeCarre

Dedicated to E. Peters, J.K. Shah and E. Saslaw

Foreword:
What this book is and what this book isn't:

There is a rich and vibrant tradition of film theory that follows from the assumption that cinema is a mode of representing or portraying reality on the one hand, or a way of telling stories on the other. Within this tradition, a consideration of the semiotics of film has been developed from the seminal lectures of Ferdinand de Saussure and has been further developed by Christian Metz and others. Metz points out quite rightly within this view that there are problems in applying the analogy of language and the methods of linguistics to the study of cinema. The first has to do with the arbitrariness of the sign, the second with the consideration of minimal, indivisible units and the third with the idea that cinema is not normally authored as an everyday occurrence by ordinary people.

In cinema it is clear that signs cannot be arbitrary because of the inherent resemblance between the lensed objects and what they represent, that a shot cannot be a minimal unit because of its inherent plasticity and that films are made only by companies not individuals. I am paraphrasing here, of course. I will add one more objection to this list. Films of the sort that film scholars usually consider are parasitical on language. That is they are verbally driven narratives derived from scripts or transcripts.

Eisenstein on the other hand recognized the fundamental kinship between ideographic languages and the art of montage: the juxtaposition of simples to produce a complex whole that is the product rather than the sum of the ideas. Buried in this thought we have the germ of arbitrariness in a potential language of cinema. Two signs, when juxtaposed can carry meaning off into very different directions, and how we ultimately take them may become determined by a common usage. That is, to use an Eisensteinian example, where the juxtaposition of a mouth and a baby may come to mean scream through common usage (Baudry and Cohen: 16) it might also come to mean nurture.

In this book, I am taking a very different tack in my approach to cinema and language from de Saussure (although my analysis owes a great deal to his thought) and Metz. I am following a track that is closer to Eisenstein, but is a good deal more radical. For me, and for the films I am concerned with the best description of cinema is that of an articulated image stream and the best description of language is simply the meaningful articulation of elements within an overarching

structure. Under this description of cinema there is a very clear minimal unit, *the frame*. To a tremendous degree the work of this book will be to illuminate the power of this idea, and to speculate on how my perspective can ultimately point to a future development of this still infant medium - wherein stipulated meanings for these units can combine in ways that indeed may seem as arbitrary (in Saussure's sense) as the meanings of words.

Because of the speculative nature of my projections, and because I am stepping outside the scholarly traditions so far developed, I necessarily draw many universal conclusions from merely local examples, and so many of my arguments may seem unsupported by tradition. But that is because I am attempting to project what cinema might become, rather than analyzing what it has been. I am less interested in constructing some grand theory than I am in outlining a method for gaining ontological parallax – an understanding of how to parse being, through shifts in perspective.

Under my spare description of language, one will note that there is no consideration of either grammar or rhetoric. I suspect that on account of the regularizing tendencies of cognition, both grammars and rhetorics will evolve, but also within the conception of cinema that this book espouses, when that happens, the most vital, vibrant, exciting, yet chaotic period in the medium's development will have ended.

Since my thinking about cinema has evolved largely from practice, I have presented my ideas from a first person perspective. This perspective also admits the first person perspectives of others. That is to say, it has become quite clear that 'filmmaking' is no longer solely the province of the corporation, and that the future of the medium will be determined by the collective work of many, many individuals, with meanings and idioms evolving in the free, unbounded, and grammatically unregulated world of the ad hoc rhetoric of the internet.

One especially exciting aspect of this future is that it will be determined not only by the users of languages derived from alphabets, but also by the users of ideographic languages!

Preface: Arriving at the scene:

One evening when I was an undergraduate philosophy student, I went to a screening of short 'experimental' films made by individual artists. For the most part they were pleasant enough – a couple were purely abstract animations that were more or less rigorous, some were colorfully symbolic or surreal or simply, visually poetic. The last film of the evening however, was both ugly and mystifying and ruined the feelings of light pleasure I had gotten from the other films on the program – and so I stalked angry into the night. My bullshit meter had pegged. In fact I can't ever remember art making me so angry.

The film was called *Fire of Waters* (1965) by Stan Brakhage. It was black and white, or more accurately just all middling grays. The images, as I recall were shot out a window at night during a thunder and lightning storm with a manic-jerky hand-held camera. Areas on the surface of the film had apparently been struck both by stray light and static electricity, and there were what looked like water spots as well, which gave the turbid image an even more scabrous quality. Sometimes it would be entirely dim, indistinct, indiscernible, and then there'd be a flash of lightning and for an instant you could see the panes of the window through which it was being shot. Sometimes there would just be jags of light that could only have come from a static electricity discharge on the surface of the film itself.

The sound was equally obscure – mushy, noisy and largely ambiguous – maybe rain, maybe paper rustling, maybe just dirt and water spots on the optical soundtrack… And then there was a rhythmic high pitched sound, that we hear at first in the background – and that we ultimately discern can only be a woman squealing under continuous sexual collision – a sound that gets progressively more recognizable and as well more agonizing in its failure to climax.

Immediately after the film, I stalked out of the auditorium in a huff, with the distinct sense that someone had been trying to put something over on me. Then, twenty minutes or so later, (and forty years after the fact I still remember the moment with astonishing clarity) I suddenly stopped in my tracks and felt one single clear idea settle on me, an idea that gave me a new perspective both on that film and on cinema in general.

The other films of the evening had all shown appreciation for the values of painting, poetry and music, as one would expect of films made by individual artists. This film did also, but *how* it did worked

only if you were able to conceptualize its materiality exactly as the author had: *when we are watching the screen, we are watching the shadow of a physical filmstrip*!

I suddenly realized that the *fire* of *Fire of Waters* consisted both of static electricity in the sky, and static electricity on the surface of the film; the water was both the rain barely seen through a window as well as the water that directly left visible spots on the film. The woman straining toward orgasm on the soundtrack was working to bring these opposing elements, fire and water, together.

At that point I recognized that the film was about the creation of new energy through a union of opposites, a union that occurs in the arms of its substrate. And a moment or so later I also recognized that because this truth hadn't been all tricked out in prettiness or superficial beauties like many of the other films of the evening, that it was all the truer for it. And finally I understood that this was an ode to film, to the substrate itself.

What I had done – or perhaps what had been done to me was simply to move my frame of reference: a perspective shift. I had shifted from seeing *only the effects* of a medium that usually was *itself* invisible, to looking at the medium itself – and suddenly, therefore, I was able to reflect on it through the metaphor of its own materiality. This happened at an especially fortuitous time in the development of my thinking because I was just encountering in Ludwig Wittgenstein's *Philosophical Investigations*, some very astute lessons on how to look at experience reflexively – through the metaphor of another substrate – language.

This was the beginning of a chain of apparent truths for me that began: certain metaphors can lens experience, making new unities clear, and this constitutes a new perspective that can be compared with the old; a comparison that in turn, produces new knowledge. This idea, lets call it intellectual parallax, can be applied elsewhere, in other analyses. At some time, perhaps a few months later, I realized that these analyses could actually be conducted in film as well as in language. And that's what I began to do.

The films that I made are all heuristics that are thought out through the specifics of the medium. But that particular medium, 16mm film, is now obsolete. So this book is an attempt to frame out what knowledge those heuristics did yield that is not obsolete. Substrates change, but lessons can be inferred beyond them, both about motion pictures and about language.

Introduction: Two pictures of a rose in the dark

Two pictures of a rose in the dark. One is quite black, for the rose is invisible. The other is painted in full detail and surrounded by black.

- Ludwig Wittgenstein

There are philosophers of a certain stripe who are close to being artists, and artists whose pursuit is largely philosophical. Or perhaps it makes more sense to say that there are certain people whose drives and curiosities take them places that are harder to define, and ultimately they stand outside academic rubrics. The questions that both Art and Philosophy seek to answer: "What's really going on?" and "What do *I* have to do with it?" are pretty much the same. Their values are also pretty much the same: rigor, integrity and elegance of method, penetrating wit and original insight. As well, both have very cozy (but distinct) relationships to analogy. The products however usually find very different forms, constrained by quite distinct traditions.

Sometimes though, work simply refuses to sit squarely in any tradition; and occasionally borderline works spawn traditions of their own. But for the most part, interdisciplinary work has a current to work against.

For a time during the last few decades of the 20th century a group of people met on a fairly regular basis in Cambridge Massachusetts to discuss interdisciplinary issues related to the sciences, philosophy and the arts. They called themselves Philomorphs – the lovers of form. At the one meeting I attended, a teacher of art history from Harvard showed his very personal art work to the group and discussed its relationship to his professional life as a scholar.

The pieces were all pencil on paper, but it would be a touch misleading to call them drawings. They were formal explorations using only one wedge shaped mark five or six millimeters long swarming in rigorous, yet ambiguous patterns across the surface of a page. Every piece used the same mark in an entirely new exploration of the way binocular vision assembles ad hoc patterns.

Was it art? Was it psychology? It didn't really matter to the assembled what it was called. Each discussed the work from the perspective of their peculiar background. As a filmmaker, I found it notable that the spatial ambiguity in many of the arrangements

induced a visceral sense of movement even though the images were clearly static. One might call that observation aesthetic, or psychological. It could easily be taken in a philosophical direction if we were to consider how to make a judgment on what to call that motion, where to place it in phenomenological terms.

This was the first time the art history professor had ever shown his personal work to any group, though he had been doing these visual experiments for many years. He hadn't, he said because he felt that sharing them in an art context would engender misunderstandings that would destroy the private ecstasy of their production. However, he seemed to feel that this group was protected enough that the work might simply generate a discussion that could help his investigations. After all, these were all people who understood the huge range of questions that can be approached through diverse formal apparatus.

I felt I understood his reticence well. He was learning something slowly in a private process, which when ripe, he might finally share with some audience or other, in some form or other. As far as he was concerned, he was embarked on a rapturous exploration, and it wasn't especially relevant to him whether it was considered art, or some other sort of thought.

At the time, I was teaching at an art school, and the work that I was doing was being attended to in the tradition of art. But as far as I was inwardly concerned, I was carrying on in another tradition entirely. The principle questions I wanted to answer grew out of an orientation I had picked up from philosophy of language – mostly the analytical philosophy of Ludwig Wittgenstein and W.V. Quine. But I had decided that the most fruitful tack I could take in my explorations would be to switch media, and so as I began to do my work in film, I thought of my films as general language explorations. But film is recognized as an art medium and not an arena for philosophical investigation, so the academic contexts I found myself in were all art related. This affiliation was emphasized by the fact that other artists seemed to have little trouble finding my film work intelligible, interesting and useful, whereas it gave most philosophers headaches.

To this day, although I've always had trouble identifying myself as an artist, I have much more trouble thinking of myself as a philosopher, and I suspect that this book, though philosophical in both nature and intent, will be of more interest to thoughtful media-wrights than philosophers. And though its central conceit is cinema, I suspect it will be of little or no interest to dramatic film buffs. I reference no actors or directors, except occasionally, casually and in passing. The filmmakers and films I do talk about come, for the most part, from a tradition that eschews the labels, protocols, methods and social circles

modeled by the movie business. But the films and filmmakers that I am concerned with do share traditional affinities with other arts; arts that have a solid, albeit less central home in the culture, and which also happen to have a history of love/hate relationships with academe. Experimental film of the last century tended be a world of *affinities between* rather than *affiliations of*, autonomous and unincorporated thinkers in the avant-gardes of poetry, painting, drama, dance, conceptual art and filmmaking.

Here is where the reader may encounter a clash of protocols. Whereas academic philosophy is considered to be the result of a long and deeply interwoven tradition – a dialogue among scholars who assiduously reference each other's ideas, the avant-gardes of the arts have the opposite tendency: of breaking with tradition as radically as possible and launching out into the blue, albeit with integrity and rigor, whenever they can.[1] This impulse guided my initial approach to filmmaking almost forty years ago, and to a degree, that is the protocol I will attempt to follow here – even though really, it's philosophy I'm after and not art.

In this essay, it will be my goal to explore how a simple attitude toward the idea of *meaning* can convey with some equivalence how words, pictures, music and motion make meaning. And cinema is merely the kettle in which I brewed this thinking. My motivations are not just to understand what the various offspring of this almost brand new medium (in art historical terms) has to offer, but I also want to explore how having new intellectual tools can influence the way we come to learn and understand in general.

In the late 19th century, when our ability to create a flow of quickly articulated pictures opened a new expressive domain, it actually opened a new analytic domain as well – new domains from which we could not only learn to communicate with one another in a novel way, but also make more sense of the world. It is the analytic

[1] Gene Youngblood's manifesto, *Expanded Cinema* carried the rhetoric of the era when much of the work I discuss was made. The following quote is a bit polemical for me, but it uncovers a popular and influential sentiment of the times: "All art is experimental or it isn't art. Art is research, whereas entertainment is a game or conflict. We have learned from cybernetics that in research one's work is governed by one's strongest points, whereas in conflicts or games one's work is governed by its weakest moments. We have defined the difference between art and entertainment in scientific terms and have found entertainment to be inherently entropic, opposed to change, and art to be inherently negentropic, a catalyst to change. The artist is always an anarchist, a revolutionary, and a creator of new worlds imperceptibly gaining on reality." (This section was reprinted in *Video Culture, a Critical Investigation*, edited by John G. Hanhardt, 1970:230)

domain more than the expressive that I wish to explore in this book, though they are closely connected and there will be a lot of straying back and forth.

As the particular conceptual/cinematic tradition out of which I write was gathering steam in the U.S. in the 1960's, the films and filmmakers were called variously, avant-garde, experimental, art or personal. Other names work as well or better, depending on where we want to go with them. For now though, I'd just like to specify that I use the term *avant-garde* to refer to the protocol of leaping into the blue wherever possible, *experimental* to refer to works whose main reason for being is to learn something more or less particular, and *personal* to refer to those works that focus on film as an individual and autonomous medium as distinct from collaborative and corporate work; that is, film used either for the idiosyncratic expressions of a kind of poetry, or of a kind of intimate discourse. If this cinema is a public medium at all it barely is one. What makes it cinema is the machine it uses.

This book focuses mostly on the work I consider to be experimental and whose experiments are in two areas usually considered in philosophy's precinct: ontology and epistemology – how can the machine of cinema inform us about the nature of being; and what can it tell us about how and how much we know the world? Personal film however, film as both poetic expression and intimate discourse, provides the social context for what I have to say as well having major implications for another newer medium and the topic of part III of this book, the world of digital motion pictures.

All communications have audiences, even if only the speaker. The audience[2] is one way of defining the work, so it might be helpful if I describe (in a somewhat roundabout sort of way) the situation in which the audience for these films dwelled (we're pretty much talking past tense here); and as well some characteristic attitudes the makers held toward the users.

I'll begin by describing one of my most recent experiences of extremist cinema and then move further back into my personal history.

I had just arrived at the place in writing this book where it was finally time for me to tackle the complex and multifaceted role of repetition, both in film and in other communication acts. To refresh

[2] The subject of *audience* is complex. Here I don't mean the general population toward which a film may be directed, but more specifically those individuals who feel they have received a clear communication from it.

my memory and get some inspiration, I put a DVD containing some super-8mm films ported over to digital into my laptop.

Just the act of transferring work from the plastic filmstrip, which was built on the premise of an analog/mechanical medium over to a digital, magnetic medium is, at least from the point of view of ontology, a shockingly complex process; one which to me has always been sodden with counter-intuitive compromise. So, I was not particularly looking forward to the *experience* – it was *information* I was after. I had last seen most of these films years before in their original incarnation and was pretty sure, while I waited for the disc to load, that they wouldn't captivate me while playing back on the screen of my computer as they originally had in a theater.

I was wrong, and it was very useful and important for me to understand why I was wrong.

The movies I was about to look at were among the most eccentric I have ever seen. They were made by Saul Levine in an era when eccentricity was considered a prime value unto itself. That was in the late 1960's and early 1970's when it appeared world culture was coming apart at the seams, and many people considered that giving birth to outlooks diametrically opposed to the status quo, was, *ipso facto*, noble work.

There was the Cultural Revolution in China, the riots on the streets of Paris, the revolt against the War in Vietnam, and perhaps most important for the arts, the explosion in the use of consciousness altering drugs. Also, the thrust of thinking was definitely away from the markets of culture, though weirdly enough those markets turned and followed. For a time.

I began to make films in the late 1960's; and in the '70's and '80's, for almost a dozen years, I worked alongside Saul, first when we both taught at The State University of New York at Binghamton, sharing a studio, then for eight years at Massachusetts College of Art, where broadly speaking we shared an approach. Since the substance of what I am writing here comprises what I learned mostly from the process of making and thinking about my own films, and since I am constrained, for the most part, from using my film work as direct examples in this book, I often use Saul's as a stand-in. Not only is he clearer from my point of view, but also – more important, he's not me. And of course, I use the work of many other filmmakers from whom I've learned as well.

One thing that was not only a given, but a very fundamental given for many workers in our tradition was that with film, images can be articulated in ways that are both surprisingly musical and 'lingual' – that is like the fine-grain (phoneme level) articulations of language.

This realization, arrived at independently by many people, and developed as a cultural collaboration, opened vast new latitudes and longitudes for exploration.

While Saul did (and still does) experiment widely and freely, he largely saw film as a medium for intimate communication and expression, and chose to work in the smallest, handiest and least expensive gauge possible for reasons that were aesthetic, but also political.

This mutually identified group of personal filmmakers all shared a dream back then that has finally, ironically, and no thanks to any of us, come true: the dream of capturing in moving imagery, those personal sentiments one might otherwise jot on a note, either to oneself or someone else; casual, off-hand, immediate, person to person, yet intimate in the way that only moving pictures can be, touching on those happenstances in life that are fundamentally ineffable, and either keeping them for future reference, or passing them around the world – and doing it as easily as we might do it in words. Many of Saul's films are in fact called *notes*, a reference both to their offhand character and their musical awareness.

One of the films I most recently looked at, sliding it into the DVD slot in my laptop, was called, *Notes of An Early Fall* (1976), punning as he loved to do, on his having been "offed" from the faculty of the first university where we taught together.

By the 1990's it was clear that the particular dream of universal access had nearly been fulfilled, but I hadn't actually experienced it for myself as a purely aesthetic event. That is, I had never before seen one of these media self-conscious movies in a digital rendition until the afternoon when I put that DVD into my laptop and the screen was taken over by an almost long-lost sight. The first image on the screen was that of the red Kodak logo-stripe running vertically through the white background of the super-8 film leader – an artifact almost always edited out of films. This, for many years was the beginning of any experience of watching 'home movies'. This film leader, that always announced the start of an individual roll of film, was often, in Saul's films, the signal of the start of an idea.

And then, across (30 years of) time and (3,000 miles of) space, I was plunged into the semi-deranged and wickedly astute consciousness of one Saul Levine.

There once was a time when the motion picture image was held captive in a dark room. Now it's both out in the light and all over the place. Not only are moving images everywhere but the spectrum of potential audiences and potential uses has become both sharper on one hand and more diffuse on another. Sharper because the medium has

become far less expensive and easier to use, so 'target markets' can be much more highly defined. More diffuse, because moving images can now proliferate in the most surprising ways.

The dream Saul and many others shared included the idea that, like speech and writing, film could be a two way medium: people could make films to one another, and therefore film could be as living a language as any other. Well now digital-cinema can be, and is. Yet before I put that DVD in the laptop, I had considered that the differences between a film seen in a theater and movies loose in the ambient light of the world was so huge, intellectually and perceptually, that I was shocked to discover how effective my experience of the work, as seen in the ambient light of my office was.

Context is king when it comes to meaning, as far as I'm concerned. The historical context in which these films were made was one where conversations about levels of consciousness were commonplace, and in many ways you could think of these particular films as descriptions of discreet (more or less) levels of consciousness. Well, *descriptions* isn't really the right word – *inducements* is a little more like it. Unlike the big screen "movies", that seduce their necessarily wider audiences into the alternate realities proposed by their authors, these films often simply manifest the state of mind, the level of consciousness *inhabited* by the author, and it is up to the viewer to hitch a ride.

As I've indicated, I always considered that I was doing a kind of philosophy with my filmmaking, especially in the phases of my work where my audience was explicitly and only myself. This was well before there was an on-line special interest group for film-philosophy, a sub-specialty with a journal and a bibliography. So, instead of reading a lot of books and articles, I was mostly looking at the work of like-minded filmmakers.

Philosophers love to declare and debate whether an x really is a y, or is only pretending to be. Two of those kind of debates in which this book will become entangled have to do with whether or not any particular film can actually *do* philosophy, as they say, and if so, what are the criteria for this; and more fundamentally, whether or not *film is a language*. I will not attempt to recount the short history of that battle here, I'll just let the rest of this book clarify my position.

They are both interesting questions. As to whether or not film can *do* philosophy I provide examples that will allow readers better purchase on making their own decision. The answer to the second, I believe is colored by two things: whether we are talking about film that is driven by a script, a narration or some other verbal framework; or are we talking about films that are primarily picture-driven.

Second, my answer is colored by my attitude toward this kind of question in general, and in this book you'll see that I take a very distinct position on all these questions of definition that philosophers characteristically ask. Rather than attempting to *define* the subject with some wall of exclusion, it is my goal to *describe* the subject in ways that are interesting and fruitful: What happens when we think of cinema as a language? What would a cinema that is a language look, feel and taste like? What kind of progress can we make by teasing out this analogy as a thought experiment? What about those films that set out self-consciously to explore this question? Finally, besides the new stuff we do learn when we consider film as if it were a language, what are the confusions this consideration might lead us into.

My prejudice is to say that considering films which are word-driven as a language engenders more confusion than it's worth; and on the other hand considering films which are picture driven can engender some distinct and broad illumination – especially if handled with care, consideration and a semblance of precision. And so I will not treat "narrative films" at all and let them remain in the locker of my own prejudice. So therefore, what follows is my consideration of *picture driven cinema*, thought of as a language, with the hope of extracting lessons about the nature of both media.

The interaction between the two predominant methods I'll use can be illustrated by the following thought experiment:

Imagine that instead of having two eyes that are side-by-side and aimed more or less in the same direction, we have one eye that is stationed off at some arbitrary distance and positioned so that the center-of-gaze can be directed back toward the other eye. Would we then have the kind of parallax that not only gave us a very different kind of depth perception, but also gave us the ability to hold opposing intellectual perspectives in our mind simultaneously?

The idea of shifting perspective in order to gain insight, as a model of how to treat inquiry, has great appeal to artists, and tends to worry philosophers, given as they are to the 'necessary and sufficient', 'is or is not' style of analysis. From this philosophical point of view, the analyses in this book might well seem specious. After all, can we really specify *how* the views from our separate eyes sum, any more than how the two terms in a metaphor manage to yield a third perspective? These are things we appreciate more than we understand. In fact, I admit right now that several very central perspectives in this book, if taken as a premise, are simply untenable, but if taken as metaphors can tell us quite a bit.

Part I

Modes of Perception and Modes of Expression

1. First ideas in new media: the cinematic suspension of disbelief

Here, at the beginning of the 21st century it's easy to think that movies have been with us forever, but in fact they've just popped over the historical horizon. Not only that but movies have been followed so quickly by other still newer ways of moving ideas around – using some combination of words, moving pictures and music, that the original cinematic paradigms have become the stuff of archaeology. With movies, the acquisition and dissemination of new kinds of knowledge and entertainment entered a very new kind of flow. And with the world wide web, that flow has taken on the flux and interactivity of an atmosphere, influencing and influenced by everyone. As a result of these new media, language has crossed a threshold, and communication has taken off in a way that we've not experienced since the development of writing. These new media may ultimately be nearly as important to the overhaul of the way we parse life as was the origin of speech itself.

A bit of speculative history, and of somewhat less speculative cine-archaeology might be useful in order to get a handle on the nature of that threshold, with the hope of taking a peek beyond. But also, and this is a very powerful undercurrent of motivation, with the hope of gaining a deeper understanding of how the nature of language itself, and our possession of it, influences perception – that is: What is the relationship between language and epistemology – the theory of knowing; or language and ontology – the consideration of states of being? Another way of asking this most fundamental of all questions: How does the language we use influence the way we perceive reality?

We can bring this hazy and abstract question into focus on one level with a simple example that I am stealing from W.V. Quine's essay: *Speaking of Objects* (1969:1) wherein he imagines a language in which every manifestation of a rabbit is followed by a vocalization: *gavangai*. He asks us how we are to translate the utterance, if we are in our very first encounters with the speakers. Does it mean rabbit, the way *we* think of rabbit: that is, the manifestation of an individual member of a species that English speakers call rabbits? Or does it perhaps mean rabbit the way we use the word rain, as in the local

manifestation of a general condition, e.g. what we might translate as [Quine 1969: 3] "it now rabbiteth"?

This perhaps, oh-so subtle distinction actually underlies something quite grand – how does the language we use influence how we divide the world into pieces: How do we parse reality?

Let us imagine a past so remote that there is almost no evidence to help us in our imaginings. Let us try to imagine what the origins of language itself might have been like, and how our grasp of reality might have changed around that new tool for organizing perceptions. Let us imagine that the development of specific vocalizations combined with ostention, or pointing at things, was the beginning of both definition and reference. Words would, for the first time, allow us to relate to one another about things that are not present to be pointed at, and allow us to relate about where they were when we saw them last and as we might see them again. With words, the ability to reference the *not here* and *not now* would begin our current conception of space and time.

As the making of marks evolved (possibly hand in hand with speech) including bent branches, cairns made of piles of rock, blazes cut into tree trunks, then, perhaps, diagrams, maps, pictures and ultimately pictograms and alphabets, it seems obvious, but still interesting to note that of the above systems, it's the maps, diagrams and drawings, the imitative markings rather than the learned writing systems or the stipulative markings that have a greater universality and therefore can be read pretty equivalently by people of different languages and cultures. When the stipulative marks ultimately became translatable from culture to culture, and language to language, and then became mechanically reproducible, the nature of culture and the spread of ideas took another immense leap.

When the first movie of a train approaching a station caused viewers to bolt from its path, a brand new level of reference came into being and the "cinematic suspension of disbelief" was born. This level so accurately caught the action dimension, it transcended the *imitations* of diagrams and the *stipulations* of language systems in immediacy and universality, giving cinema the unique referential boost of an *illusion* and giving it as well the greatest instantaneous cross-cultural range of all media. This medium doesn't just entrain the nervous system, it tricks it. But, like the evolution of the mark, there are other paths besides the telling of stories for the articulation of pictures to take – en route to referencing a world of which we have not yet dreamed.

Such a powerful new medium bursting on the scene opens lots of questions about the history and future of our media. Did music and

speech evolve together? Was the beginning of time, i.e. our ability to refer to the "not now", also the beginning of rhythm as a way of carrying information? Does the fact that we can now articulate pictures, inflecting them in time, giving them rhythm, mean that their referential power can synergize with the inflections of music, and speech – not just sum, but synergize? Can our new ability to reference the world by articulating pictures tell us anything about the way speech and music each refer to both our shared external and our otherwise private internal experiences? What can we learn about ourselves, the nature of perception, and the nature of meaning, from the optical illusions that power the transcendence at the heart of cinema?

2. Describing how the mind moves toward understandings:

You could say that with language, we parse experience, using the 'parts of speech', into objects, actions and qualities. But, given the complexities and subtleties of life, we know there is more to experience than that. With the quantifiable, we parse experience in ways that are more precisely analytic: mathematics, binary codes or other logical schema. The ineffable, we parse in ways that tend to be more private and personal: with music, pictures, gestures and other body language, etc. On top of that, many of our experiences are not parsed at all, but absorbed, ridden with, meditated upon, stewed over. We allude to what we can't parse in words with labels like the unconscious, the subliminal, the gut, the infinite, the sublime, the divine and collectively, as the ineffable. But throughout history more and more previously unparsed experience has been solved, so to speak, as each of the great paradigm inventors (Zeno, Euclid, Giotto, Brunelleschi, Descartes, Newton, Einstein, Cage, etc.) have changed the ratio of the unparsed to the pars-able and served up new discreet gobs of an up-till-then un-sharable universe. How does parsing the world connect us to it? At this point I will revert to an almost unbearably simple description of what happens when we feel that we've made sense of something: *Where the mind can move, there's meaning*. If we *get it*, we can *move on*, if not we *get stuck.*

A grammar describes how words are assembled to make meaning, but describing how our minds *move* (metaphorically speaking, of course) under the influence of words, or for that matter music, pictures and expressions of other kinds, could not only show us the *how* of meaning in general, it could also show us the many structural similarities, or homologies, in the ways that all languages reference our shared experience of the world; ways that lie beyond the instruction manuals of grammar. This comparison is not meant as an

equation or prescription, just as *a way of looking at* the problem of meaning – a scaffold or heuristic rather than the foundation of a theory.

I'm suggesting that our perception of the orderly (meaningful) flow of sound that is speech, is analogous in a simple and discussable way to those symptoms of meaning that allow us to follow music: rhythm, melody, harmony and form; and analogous in the same rich but simple way in the visual realm as well, to the associations that power the path of the wandering eye and produce the sense of meaning we derive from the space we're in, or the pictures we look at.

In each case, if we move with it, it makes sense. If it makes sense, we can move with it. We can not only ask: "*Where are we going?"* but also: "*Why are we able to go with something?"* Most of all we can *examine* the vectors, and *characterize* the qualities and implications of the movement.

3. New paradigms for viewing experience and new ways of creating meaning:

Whenever a new paradigm, e.g. the invention of calendars and clocks, the heliocentric view of the heavens, Euclidian Geometry, Cartesian Coordinates; or a new medium, e.g. alphabetic writing, or the development of perspective in painting emerges, there's the possibility for a new style of mental movement, new kinds of meanings and the parsing of new knowledge – not just meanings that have been ported over from a previous paradigm or medium, that are able to address old experiences with more accuracy, cleaner analysis, or more resonant exposition, but meanings of a whole new kind, able to open realms of new experience and knowledge; knowledge that is only sharable under the light of the new paradigm or in the voice of the new medium.

This doesn't happen easily or directly. In order to bring new realms into shared meaning, a context needs to be created for the participants. With new paradigms there is often a struggle to integrate them into our extant world-view. With new media we usually port over the meaning-laden strategies from close relatives in old media first, a familiarity that helps the mind move in the new flow. So motion pictures first adopted and combined the idioms and methods of documentary photography on one hand and stagecraft, on the other.

4. Theories of meaning – media, messages and how the mind moves:

The attempt to analyze meaning in language has a rich and checkered history, and the threshing floor is littered with examples of

partial and broken theories. Each might seem to satisfy a different picture and cover a particular case of reference, but all break down in the transition from the specialized worlds of scientific or philosophical inquiry into the general world of "ordinary language" and break down even further as we move toward the ineffable – questions of meaning in art. The failure of some of the most powerful philosophers of the last century to reduce the meaningful vectors of ordinary language to logic and mathematics reflects a mistaken impression among some that ordinary language is a looser subset of a system of precise relationships, rather than the other way around – that logic and mathematics are in fact a tighter subset of what is actually and operationally a very loose, and somewhat *ad hoc* system of relationships. Therefore I am approaching the problem of how human beings create referential relationships from the perspective of meaning as an ad hoc occurrence within a highly structured, but utterly elastic context.

The extremely simple model of meaning as mental movement (referential movement) will be my way of getting closer to understanding a central process in cognition in a way that allows broader and clearer equivalence across those realms where philosophy of language, semiotics, and art criticism jockey for understanding. I choose cinema as my paradigm because it combines meaning vectors from language, music and pictures simultaneously, and also because it was to cinema that I turned in the 1960's to get my head around issues of reference and levels of meaning.

My approach is embedded in the belief that an analysis must pinpoint, then penetrate, the essence of any medium if we're to understand what possible referential relationships that medium has to offer.

5. The relevance of the mechanism – lessons to carry forward from an already ancient medium:

When the very early filmmakers Lumiere, Griffith and Melies picked up the new motion picture medium, they each analyzed certain aspects of its potential to accommodate their own particular ends and came up with distinctly different strategies for making meaning. Of the three, only Melies, a magician by trade, looked to the essence of the *mechanism* for his inspiration. Melies realized, like the others, that the foundation of cinema lay in its ability to generate an illusion that conjures certain aspects of experience. He also realized, along with the others, that out of our innate predisposition to promote the suspension of disbelief, we simply filter out the aspects of experience

that cinema fails to mimic. This predisposition gives us an experience of a *world*, not just an experience of *pictures which seem to move*.

But Melies had a further realization: that if he made the camera expose only one frame at a time while the projector continued to run without stopping, his capacity for creating illusions would be greatly enhanced. Melies understood what lived between the frames.

Our nervous systems process visual information relatively slowly compared to the cinema machine and that allows two separate illusions to power our experience of mechanical-analog cinema. When we are in a movie theater we don't notice that we are really sitting in darkness a majority of the time, a darkness punctuated by the brief[3] flashes of light that carry the shadows of a filmstrip to the screen. We don't realize this because when light gets painted on our retinas, the excitation persists for longer than the actual stimulus. It's a phenomenon called *persistence of vision* and it prevents us from seeing the dark between the frames. Analog movies, after all, originally consisted of a stream of still images sequentially replaced in the gate of a projector where the process of replacement is hidden from us by the closing of the projector's shutter. This is the first part of the basic illusion – the illusion of *continuity* in an experience which is actually *intermittent*.

Another illusion, which psychologists call the phi phenomenon, has to do with our tendency under some circumstances to see two sequential images as a modification of one image rather than a comparison or disjunction between two. So, under the right conditions, we read *spatial displacement* as *motion*. Persistence of vision and the *phi phenomenon* are the two, linked, fundamental features of our visual system that empower cinema.

Melies was a magician by trade, and so he deeply understood the machine's latent power – since his illusionist's craft depended on the eye being relatively slow. He recognized that by photographing one frame at a time, he could make substitutions in the content of images at his leisure, making his "hand" very much faster than the eye of the beholder.

The same essential understanding of cinema's capacity for high-speed image replacement that gave Melies and his followers (like the current workers at movie special effects houses) a tool for making entertaining illusions, can also create relationships of a very different

[3] Actually, each film frame is projected three times for 8.5 milliseconds each plus 5.4 milliseconds of darkness between each burst, for a total of 42 milliseconds for a single film frame. (A TV frame lasts 33 milliseconds.) (Dennett 1991: 103)

kind, changing entirely the way that meaning courses from object to subject through the medium. More on this later.

We can think of *persistence of vision* as a measure of the time it takes a packet of light to get processed in the brain, allowing the image to remain with us while the shutter of the projector is closed and the screen is actually dark. The *phi phenomenon* is simply the expression we use for our still mysterious perceptual tendency to read substitutions as transitions under certain conditions. If the length of the interruption that's required to substitute one picture for another and its accompanying darkness were any longer, we'd perceive that brief moment of darkness as a flicker. If the images being substituted exceed certain spatial or content parameters, we perceive them as a cut between two distinct images or as a comparison between two distinct states of affairs, rather than as a transition between different states of one affair: i.e. the 'same' image, moving.

If we want to do some inter-modal stretching, we can think of these basics of the cinema experience as having analogs in grammar, with the phi phenomenon providing a kind of benchmark: That is, if there is a perceptible difference (but one that's not too extreme) between frames, we perceive motion – the province of the verb, and if we see no perceptible difference between frames or if the differences are insignificant, we read stasis – objects – the world of the noun. If the difference is barely palpable, not quite perceptible or not a featured aspect of the image, then perhaps we have something like an *adverjective*, another expression of quality beyond those defined by color, texture and composition, etc., one that includes a moving image's *character* of movement or repose.

If we want to carry on with this comparison between parts of speech and components of cinema, a truly risky – but riotously informative exercise, we might want to think that where the phi phenomenon houses the object, action and quality rooms, persistence of vision houses the existential qualifier, the experience of a continuous existence assembled from a precisely fractured stimulus: we see a continuum, where there really is a discreet series of pulses: Persistence of vision as the existential qualifier – TO BE.

Persistence of vision demands we ask: is reality seamless (as it seems), or is consciousness the seamless representation of a reality which actually consists of discreet packets that are too small or subtle for our senses? Cinema explores the existential flip side of Merleau-Ponty's observation that *the ability to perceive similarity in difference*

underlies all perception.[4] Each new frame continues our expectations of coherent space and time so long as there are significant similarities. We expect that the space and time within the frame will obey the same rules of coherence as the space and time outside the frame. But it doesn't have to.

In a cinema that is self-aware of its mechanisms of illusion, the existential qualifier, *certainty of being*, is itself articulable.

6. Frames vs. shots, surface vs. window:

If we take cinema (as most people do) primarily as an extension or illustration of verbal media, i.e. a potentially fuller and richer way of telling stories, then regarding it as composed of a sequence of still frames holds virtually no interest for the dramatic filmmakers that followed D.W.Griffith and no meaning potential for almost all of the documentary films that followed in the tradition of the Lumiere Bros. The individuality of the frame harbors values few narrative filmmakers care to articulate.

However, there is an alternative view of cinema that honors and mines the sequence of frames as prior to the sequence of shots. It also recognizes the screen as a surface upon which light is projected, before seeming to become a window into another world. Another feature of this perspective is the extreme value it places on continuous reinvention and self reflection and at the same time eschews the escapism and unreflective seduction of the dramatic narrative. But although this tradition will never usurp the mainstream cultural momentum of narrative cinema, narrative cinema itself continues to slowly absorb some of these same artistic values and insights; insights that ultimately amplify its story telling power.

Since the illusion of the window of cinema is so strong that we normally pass right through the medium to the message – reassembling the world of a well made film on the other side of the screen with the same effortless ease with which we put together the world around us, the *screen itself* winds up being apparent to us as rarely as is the 'assembly' of our personal experience. The qualities of the *surface*, those abstract photographic values like brightness, contrast, color saturation, color balance and the general modulation of light across the frame are usually subtle qualifiers of the story-illusion we're watching and almost never center stage. We're rarely aware of them, almost never really tuned to them.

[4] Many of the underlying themes in my thinking come from the general mind-set Merleau-Ponty outlines in his extraordinarily influential and comprehensive book, *The Phenomenology of Perception* (1962).

So what happens when the surface of the screen *itself* is worked to encode meaning without the immediate seduction of the window and the escapism of the story? What can we learn from a cinema where the meaning-laden gestures live closer to us than the far side of the screen, and where the world beyond the screen has the same oblique relationship to the point of the film as the purely pictorial qualities of the image do in the story-cinema of transparent illusion. One of the first things we realize is that one often has to learn *and relearn* how to read – how to see, a non-seductive cinema – a cinema that is not transparently depictive.

7. What the surface of the screen can tell us about language:

Music and abstract painting move us in ways and touch us in places that stories can't reach. Their powers are unique and rooted in the nature of their respective media. We might, however, envision a purely pictorial cinema, a cinema with only passing reference, if any, to verbal structure, that by virtue of it's *a-literal* nature, might ultimately develop an emotional power and reach equivalent to that of music; and the subtlety of emotional discrimination characteristic of abstract painting. I've always found this aspect of cinema's potential enticing. However, a primarily pictorial cinema can also be a tool for linguistic analysis. It can, through the mechanisms of comparison and contrast, give us some insight into the workings of 'natural language' – allowing us, through the stream of *images qua images*, to examine the lens of that language through which we normally see the world, and to do it with less than the Kantian gyrations required when using language itself.

Also, thinking first about the *surface* of the screen allows us to un-dramatize cinema, to lose the obligatory flow of a story and use the screen to explore larger questions of epistemology and ontology and not just the foibles of humanity that the cinema of transparent illusion illuminates so well.

Although these two perspectives on the movie screen, as either a *surface* or a *window*, are soul mates and occupy two lobes of a very powerful and moving dialectic, in my own motivation for making films, I was most struck by the differences. As a voracious reader and lover of the way words tell stories, I saw the cinema of seduction and illusion as usurping the imagination of the reader. But more important, I was excited by the potential of an *articulable surface* to stand as a *tabula rasa* of expressive possibility, a plane of articulation that had been well prepared by the evolution of music, painting, poetry and conceptual art. Unlike the cinema of the window – which was already constrained by the imbedded narrative grammars of speech, theater

and photographic exposition, the cinema of the surface, as well as being nearly drama free, is nearly grammar-free. This almost untouched surface, this barely explored machine seemed a really spectacular lab for scoping out what a new way of parsing the world can reveal.

Perhaps above all, it's an approach that invites rather than ignores a serious consideration of phenomenology and the psychology of perception as they impact the creation of meaning.

Since I am interested in cinema as an instrument for parsing reality in a way that could never have been done before, I will make a very risky diversion in an attempt to reveal the path down which I tumbled as I came to terms with this particular slice of the great unparsed.

8. Language integrates our perceptions as surely as the nervous system integrates our sense data: – Hallucination or Metadata?

Grammar is the analysis of a habit – our habitual way of putting things together and sharing them in words. Our embedded grammar is *so* habitual we normally can't remotely come close to any experience that's unfiltered by it. What would we learn, however, if we could look at the world like the 'enfants suavage', who supposedly have not heard human speech? Or, better yet, what would we learn if we could experience the unmediated and as-yet-un-organized sensory stimuli from the external world – before they are fed by the senses to the brain? This has been a driving question for philosophy, science, religion and art as well as direct chemical tinkering.

It's easy enough to make a superficial reckoning of what's required for sensory experience – i.e. the sensory precursors of consciousness: light reflects off objects, enters the eyes, goes to various places in the brain to be organized, along with other sensory cues as a representation of a space that contains objects. Sound emanates in air pressure differentials that drum in the ear and then various places in the brain; similarly with taste, smell and touch, along with who knows what others. The unmediated stimuli, the light waves, sound waves, etc., as they interface with the relevant body parts, are turned into nerve impulses, a raw something called 'sense data', on the way to being processed and integrated with stimuli from the other senses and with our accumulated sensory database – so that, organized around what we regard as "the moment", we simply have *the world*, as a whole, in a glance. It's not perceived as a world fabricated from synchronous sensory processing, it's just the world as

we know it, with a sensory coherence that's usually only challenged by tricks, trauma, hallucinogens or pathology.[5]

And here's the root of my obsession with the idea of parsing the universe: Except under these extraordinary conditions we don't get to parse experience *experientially*. We can scrutinize the process at some remove with analytical and technological tools. We can even isolate our separate sense impressions to a degree, but we normally have no access to the raw "sense data". All it takes to change one's perspective on existence is to get some raw sense data in the face – for consciousness to somehow extend toward our sensory surfaces.

The so-called 'consciousness expanding' aspect of LSD refers to its potential to make accessible to consciousness many things that our nervous system usually handles completely behind the scenes. Depending on dosage, the experience of a unified external world can dissolve in a confusion of progressive synesthesia. Sight and sound become confused first, smell and touch, seemingly more primally wired, became confused later. As the disintegrative effects of synesthesia continue, one moves into a realm where stimuli of all kinds are not quite raw, but the ability to decode which stimulus comes through which portal seems to be at the level of deduction or guesswork, not knowledge. Finally, if the dose is high enough, some people have reported experiencing a universe without the screen of self at all, lending credence to Aldous Huxley's famous and seemingly ridiculous assertion that the brain's first function is as a filter that protects us and allows us to function selectively in the outrageous noise of the universe.

At any rate, experiencing progressive synesthesia throws into relief the various and particular mechanisms required to construct experience from an unmediated universe, and provides a painfully sharp glimpse into at least some of the nervous system's mechanisms of mediation.

But something else gets thrown into relief as well: *the mediating force of language*. Not only can one see how the brain might be thought of as a filter, it becomes much clearer, amid the unparsed swarm of sense data, just how pervasive a filter *language* is: *sense data have no names.* In the analysis that follows, cinema stands as one possible way to get beyond the filter of language as regards existence, while keeping the filter of the brain more or less intact.

[5] Oliver Sacks writes in *To See and Not To See* (1995) how the purely sequential sensory world of the blind makes the simultaneous perception of objects in space foreign to the point of incomprehensibility.

9. Letting the mind surround an idea: an introduction to Wittgenstein:

When I first became interested in these questions I was lucky enough to find a teacher who introduced me to Ludwig Wittgenstein's (1889-1951) great posthumous work, *The Philosophic Investigations* (1953). Among the many things that appealed to me about it was the plasticity implied by the fact that Wittgenstein himself never felt it complete enough to publish and so it was compiled from his notes after his death by his students, Elizabeth Anscombe and Peter Geach.

But more important, my encounter with the *P.I.* was my first encounter with a thinker who understood that an inquiry into any philosophical subject has to begin with an understanding of the medium in which that inquiry is launched and in which that subject is framed. He not only understood many implications of this understanding and abided by them in his analyses, but he mined that understanding to produce an incredibly powerful perspective on language.

Another thing that appealed to me was that he repudiated his early work, *The Tractatus Logico Philosophicus* (1921), a work based in the assumption that the foundations of language could be found in, and reduced to, logic. This assumption had seemed to me at the time I read *The Tractatus* to be not only misleading, but also not nearly self-reflexive enough to handle the tricky fluidity with which language actually *works*. It seemed to me that *The Philosophic Investigations*, and how they came to be, demonstrated Wittgenstein struggling to do, by brute intellectual power, something very similar to what Buddhists try to do through meditation – to pierce the veil of language. And like many Buddhists, he never really seemed to feel that he had actually arrived at anything more than a method. So he never published the epigrammatic questions and observations that appear in *The P.I.* and that his students collected and organized from the note cards on which his thoughts were recorded.

In *The Philosophical Investigations*, these thoughts appeared simultaneously in German (W's first language), and on the facing page in an English translation.

Using a lens to look at itself is a useful metaphor for how tricky it is to examine the language in which the really big questions are posed. Presenting the same questions in the two languages in which Wittgenstein thought, is an example of how we can gain the information embedded in a shift of perspective, like the depth information gained in the parallax of binocular vision, or the conceptual depth we gain from the comparative terms of a metaphor or dialectic. Wittgenstein's work is full of question-laden

comparisons, as is cinema's root potential – *comparison, the study of similarity in difference.*

Since we learn a language as the precursor to almost everything else we learn, sentience is pretty completely en-webbed by language. The way we put ideas together with words, the very fact that there are such things as phrases and sentences, reflects the conditions under which we can know anything. But it's the big and unquantifiable questions, the subject matters of philosophy, that struggle hardest to escape from the meta-organization of our 'mothers' grammar. Since I became fascinated by the possibility of examining the world through a medium whose 'rules of grammar' were still to be discovered. That is, a universe not already broken down into things, actions and qualities, a universe that could be parsed afresh, seemed to me to offer a magnificent opportunity to play freely on a grammatical *tabula rasa*. I thought perhaps that, with a cinema alert to the power of the individual frame and especially conscious of the *surface* of the screen, even my rawest exploratory forays might cast a beam. So I began a course of experiments within the film medium whose lessons I have attempted to translate here into words.

But first, a word of caution – the concerns of the various distinct disciplines: art, religion, philosophy, science and mathematics, often seem to us to dwell in separate homes in the mind, requiring unique approaches and apparently different kinds of understanding. Stumbling around in one field, then using techniques of analysis from another, is perilous. But there is something very important to be gained: access to the world in between, the overlapping areas in the Venn diagram of consciousness. When the terminology of our disciplines become walls that isolate these interstitial thought zones, feeling zones, and belief-tinged zones from one another, they become invisible. Still palpable, but invisible. Undisciplined. It's in these zones that pictures speak.

So, when I began to think of cinema as a natural investigative tool of post-Wittgenstinian language analysis I knew I was blurring edges, a practice that guaranteed all sorts of trouble. Not only was what I wanted to investigate beyond the realm of what *even I* considered philosophy's normal focus, (after all, I admired the logical positivists for kicking metaphysics out of philosophy and I took Quine seriously when he constrained our examination of language to its expression in behavior) but what I was interested in involved invisible behaviors as well: recognitions based in some mediated form of those communications that aren't necessarily shared, but which *may have been, or may ultimately be* sharable. And although my goal was to gain some kind of "prior knowledge" with picture-thinking, my quest

had no component of religious faith. It was however, in the way Nathaniel Dorsky describes it, *devotional*,[6] i.e., my exploratory stance, my creative method was one of maximum openness: *I am the vessel, the ideas pass through me.*

However, the idea of learning to think entirely in pictures engenders a deep sense of disconnect that comes from being (in some sense) mute. However, consciously eschewing verbal perspectives, whilst entertaining questions posed in words, can create a very productive parallax of its own. More about this later.

After Wittgenstein realized that he was mistaken in his belief that logic is the foundation of meaning in language and as well in the belief that if you are precise and exhaustive enough, language can nail down life itself, he came to understand that, outside of the highly constrained and artificial world of philosophical discourse, language depends on loose hinges to work well: He saw that ambiguity though rife, is not a problem, but a resource. He saw that meaning in ordinary language is continually forged from ambiguities on the anvil of context; and also that meaning in everyday discourse is *ad hoc*: We are constantly shifting our style of reference depending on to whom we are speaking, or even what part of a narration we're engaged in.

The 'picture theory' of meaning embedded *The Tractatus* is a distant example of a 'correspondence theory' of meaning – a group of theories that, in general, claim that words are like labels for items on a shelf somewhere.[7] With this theory Wittgenstein attempted to shift the blame for meaning to mental images. That is, he claimed that the word chair conjures a mental image of a chair. But, as we'll explore, there are fundamental differences in the way images and words mean. While the crisp geometric clarity of *The Tractatus* may have an aesthetic appeal, I feel it works better as art than philosophy, i.e. it is the magnificent drama, elegance and scope of his attempt which transfixes; a drama about a beautiful mind at a crossroads in the history of philosophy.

Wittgenstein's later work, undertaken after a period of intense and reclusive reevaluation, enters the much more plastic world of provisional meanings, the edges of meaning, and the ambiguity of questions and as well as of perceptions.

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[6] Nathaniel Dorsky, "Devotional Cinema" Tuumba Press (2005).

[7] Plato's concept of how words mean, his theory of universals, is an example of a correspondence theory. He held that there was a universal chair that actually exists in a realm beyond our ken, and that allows us to fit all the specialized individual cases of chair into it, so we can recognize and call it out, whether it was big, small, fancy, plain, stone or wood.

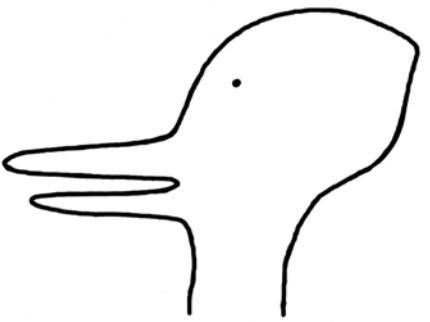

Figure 1

His fascination with the gestalt-like 'duck-rabbit' (figure 1) shift in perception, wherein the very same line drawing can be seen as a rabbit's profile facing right, or a duck's facing left demonstrates the function of naming in the process of fixing a perception.

His insistence on probing slight differences in the way a simple negation may reveal the underlying character of the relationship between words or states of affairs reveals his interest in the multiple roles of context in meaning, e.g. "*What is the difference between the two processes: wishing that something should happen – and wishing that the same thing should not happen?"* (1968:548).[8] or "*Two pictures of a rose in the dark: one is painted in full detail and surrounded by black, the other is all black- for the rose is invisible."* (1968:515). And his use of delicate and probing questions reveals his respect for a very different kind of relationship between language and the world, one almost the opposite from the world of logic or mathematics where one expects certainty in outcomes and in which propositions are listed with the rigid dependency of theorems.

He understood that, if we want to use prose to directly question the nature of existence and the character of knowledge, ignoring ambiguity ignores the most fundamental aspect of how words work. Perhaps for this reason, it is the aesthetics of Wittgenstein's philosophy that have been as powerfully appealing, and have contributed perhaps even more to his legend than his philosophical insights have informed subsequent philosophy.

The same goal he set out in *The Tractatus,* i.e. to "describe everything that is the case", powered his later work as well, but the

[8] There is in my mind an uncanny echo of this question when we compare the English to the German: Was ist der unterschied zwischen den beiden Vorgängen: Wünschen das etwas geshehe, und wünchen das dasselbe nicht geshehe?

radical change in the direction he took gives us a yardstick by which to gauge cinema's potential for carrying out an analogous line of questioning. The shift from *The Tractatus* to the later work was a shift from the mindset of an engineer to that of a performance artist, and his attitude toward parsing *everything that is the case* widens dramatically. In fact, the idea of *the case* and what it can actually hold, changes for him completely. Instead of seeing the relationship between language and the world as a series of well defined contingencies, he came to see it as an infinitely fluid medium. He also realized that the case isn't something you can just lay out and be done with. His new philosophy had to be performed: the performance of endless reexamination. What is the case, in the case of language, just keeps on changing.

Art also requires the performance of endless reexamination. Cinema, for me, came to be about finding a way to describe the next new set of cases, the cases that are beyond the groping descriptions of either ordinary, philosophical or poetic language.

10. Ascertaining understanding: What one language must evoke, another may stipulate (and vice versa).

Where a dictionary definition is the paradigm case for *stipulated* primary, secondary etc. word meanings, meaning can be *evoked* in many different ways. The distinction between stipulated meaning and evoked or implied meaning is an important analytical tool in probing where we can go with motion pictures that we can't go with words, or for that matter, any other medium. As well, the *poetic* vs. the *expository* use of pictures as well as words, often reflects two very different kinds of reference, a difference we can mine in our quest to understand the nature of pictures and other non-verbal media.

In general, meanings are more often stipulated in expository language, and are somewhat more likely to be evoked or implied in the poetic use of language. In terms of the way the *mind moves* (just a metaphor, remember) when meanings are stipulated (as, for instance by a dictionary definition), that interval between the occurrence of the stimulus and the moment we can continue or move on in our processing of the thought or sentence, is so brief and the vector so direct, it's unnoticeable (if we have our normal, immediate access to the stipulated or dictionary defined meaning.) More simply put – we don't even notice that we understand the words we understand. Evocations and implications, on the other hand, have multiple, ambiguous or indirect meanings, and so they often generate a kind of mental processing which we overtly notice, as we turn the various possibilities over in our minds.

Meaning's not an issue as long as things are clicking along just fine and we're processing information pretty automatically, but when there are problems, like not knowing the definition of a word or the meaning of a reference we are obliged to figure out what went wrong. Here's where the process gets interesting and the problems can become instructive.

Communication problems pop up and get resolved all the time. How they get resolved has something to do with whether we're in control of the process, like when we're reading the printed word, or looking at a picture on a page; or whether we're just tagging along after the stream of incoming data, like when we're watching and listening to the events of the world – including the free flow of recorded media. Conversation is an intermediate case, because we can control its flow to some degree by interrupting a speaker and asking for clarification. *(It's been said that German is a bad language for conversation, since it's hard to interrupt when the verb's at the end of the sentence!)*

When we don't know the stipulated meaning of a word in a text, and if we have no dictionary, we may make guesses from nearer and further contextual clues, and then move on, more or less insecure in our sense of the meaning. If we have a dictionary, the flow of thought gets diverted while we look the word up and sort among the principal, secondary, tertiary etc. meanings listed. Then it rejoins the original track as we fit the most applicable meaning into the flow – and then move on. For the most part, the circumstance where meaning is clarified by a speaker or a dictionary is the model for resolving these questions.

Even if we leave aside the more slippery aspects of making sense of implied or ambiguous references and we just focus on our processing of words whose meanings are precisely stipulated, how do we come up with a general description of failed reference; or successful reference, for that matter? Correspondence theories of meaning, which view the process as a matter of connecting labels with the objects, actions and qualities for which they stand, will, in the case of a failed reference, posit a disconnect of some sort, and then look either to the sending or receiving end for the problem – either the expressive term and its situation or context, or our ability to process it.

When Wittgenstein abandoned the outlook summarized by *The Tractatus* and its picture theory of meaning, and adopted the analytic process culminating in his various posthumously published works, he made an enormous shift in his way of looking at questions of reference. Instead of looking for WHERE relationships get made, which entails positing mental 'objects' and a system of relationships

to real objects, he moved his focus onto another dimension – and began to examine WHEN and HOW references get made. Instead of looking at the syntax and semantics of communications, he began to look at how we make sense of the rest of the world and the rest of behavior. After all we don't learn our mother tongue the way we learn foreign languages. We learn it in the same way we learn to understand the rest of our environment.

He introduced two ideas that especially illustrate the shift: 'family resemblance' and 'language games'. Both ideas reflect a continuum between language and the rest of behavior, an emphasis on life circumstance as well as verbal context and a preference for the temporal and flexible in language. Both ideas point to the fact that the way we make sense out of something is really a global kind of process, and that communication acts are not just embedded in propositions and other linguistic circumstances, they're a part of life; and life circumstances determine meaning every bit as much as sentence circumstance. He began to look at the borders of meaning with equal intensity as the center.

The idea that we learn to use words in the same way we spot family resemblances, eliminates the need for a theory of universals, or any other correspondence theory for that matter. Think of when we learn that this a pine and this a spruce or a hemlock, an oak or an elm, a birch or an aspen. We learn to make the distinctions at the same time we learn to use the word and vice versa. We can say that there are classes and subclasses of objects, and define the objects in that taxonomical kind of a way – but often this doesn't describe how we learn them and doesn't necessarily describe how we use them. Learning to use words exercises a perceptual mechanism (perceiving similarities in differences and vice versa) that we apparently are inherently predisposed toward developing.

Wittgenstein suggests that the way we learn to use the word 'game' is an example of family resemblance at work. Is there a universal 'game' whose various and particular local manifestations we all come to recognize, or did we simply learn to recognize that certain kinds of behavior resemble each other in a peculiar collection of ways? When we use the word in relationship to a collection of behaviors, we are saying, for one thing, that it *is* a collection of behavioral circumstances, and that it is separated from the rest of life by a set of stated or implied rules, specific to that game.

The idea of a 'language game' means to suggest a kind of semi-permeable meaning boundary, where some referential rules from the general case apply and some don't: most games imply winners and losers, but not all; or prizes, but not all, etc. Language games come

into and go out of existence. We may play several in a day, or even several at once. Language games let us hop from context to context with only the slightest referential clues. They reflect an economy of communications focused around a defined set of circumstances. There is the language game of the football player, and a related language game of the Monday morning quarterback. There are language games related to different types of music, and for different occasions for meeting, or *not* meeting, as in the case of the language game pilots play with air traffic controllers. Almost every job has its language game, marked by the lingo and jargon that flags the particular game. The very idea of a language game highlights the shifting and dynamic character of meaning in ordinary use, and emphasizes the role of context in shaping meaning, from interpreting homonyms to reading irony.

If we understand that references are constrained by a situational boundary, we are poised to look at the temporal character of meaning.

11. Dynamic and static theories of meaning:

Forming a temporal conceit rather than, or in addition to a spatial conceit for the locus of meaning helps a lot with a couple of big questions:

1) What are some of the differences between stipulated (dictionary defined) meanings and evoked meanings, or novel meanings suggested by a shift in context, such as often occur in poetry?

2) What are some of the differences between the way we derive meaning from expository prose, and the way we expect to derive it from painting, music and film, or for that matter from the world at large?

Going back to our simple criterion for meaningfulness or successful reference in ordinary language: "Do I know where to go with this?", a perspective on meaning that's based on a temporal metaphor describes what goes on *while* I am processing input, the time before I know how to move on. It allows us to see language as one of many input/output responses in the array we have for handling life. It helps us answer the question: How do we describe what's going on during the time I'm processing experiences, including language, and creating responses? It helps us include the variables of life context and expectation in forming understandings and not just the context provided by syntax.

If you simply describe meaning as *what goes on in the time it takes to know where to go* with something, then the differences among how we come to understand the meanings of words, pictures, music,

or for that matter, what happens when we experience the whole previous array, bundled into a movie, can be compared on an even field – an even field that allows us to tease out useful similarities and distinctions about the referential character of each. On this even field we can set up temporary little dialectics, little heuristics to cast a bit of light on those moments. By exaggerating the distinction between poetry and prose, between a cinema of the surface and the cinema of the window, by presenting the spectrum as if it were a splayed dialectic, we can localize, illuminate and portray a zone of interaction among various referential styles, whether stipulated or evoked, whether representational or abstract, read or spoken, familiar or exotic.

When we read an easy narrative, a well written news account for instance, or when we look at a picture whose contents are clearly recognizable, we process the stimuli with the same flow with which we process the world. It happens unawares. Likewise, a look through the window of the movie screen gives our minds little or no resistance, so that we move easily through sequences or scenes, either as passive observers, or as active speculators. We are *instantly* at home moving through the implications of a world presented by images of recognizable objects. We only stop and question the image if we don't recognize the objects, or if there has been something ambiguous or incoherent in the editorial (syntactical) style, or if a mystery has been intentionally laid upon us. In any of these cases we might still possibly visualize, and if need be, describe or diagram these vectors of meaning. And when we describe unambiguous, automatic, unconscious understanding as having short direct and relatively simple vectors of reference, we don't even have to address the question of *correctness* of meaning, since we're just describing speed and direction, not accuracy – or even success.

12. Color, types of reference and the inveterate narrative:

Blurring for a moment the distinction between still and moving pictures...

Before color became commonplace in movies, we read black & white movies with an equivalent fullness of illusion as we read color films today. We moved effortlessly through the black and white image to the relevant detail of the story – the image as a framework for the projection of our imaginations and our understanding of the action – in some ways not that different from the way we build a world for ourselves out of the descriptions, and dialogue in a novel.

So how does color change the meaning of an image? There are at least two perspectives. One – from the maker's point of view is that

there is another variable to modulate, to generate information, and therefore, possibly, meaning. Another – more apparent from the viewer's point of view – is that we lose important variables around which we would otherwise project our own meaning. The color in films fills those variables in for us. Black & White Movie Buffs, who find a unique satisfaction in watching black and white movies may feel that the experience of filling in that dimension of color *with their own* projections is ultimately a more pleasurable experience: The color gives and it takes away.

Our propensity to project meaning into our environment, to naturally and unconsciously connect the dots that both allows us to see past the absence of color in a black & white movie, and to fall for perceptual illusions in films – and, for that matter, to function in life, is at the heart of the inveterate narrative character of motion pictures.

We learn to follow stories on the screen quite easily – breezing through ellipses and fabrications where one character may be represented by several actors – one for the face and medium drama shots, one for close-ups of hands another for feet, another for the dangerous stuff that's not really seen clearly. We read images that were photographed months apart and on opposite sides of the planet as having happened in proximal times at the same location.

When a film is in black and white we see the requisite gestalt, wherein the absence of color is quickly read as insignificant. After all, we are adept at using representations of all sorts.[9] The expectation that color films will resemble life brings two qualities up for question: color balance and color palette.

Since the direction toward which overall color balance appears to deviate from what feels *normal* to us depends on a baseline – the mixture of colors we subjectively read as white – which in turn depends on the color of the ambient light, our perception of overall color balance is relative, and to a degree, dependent on expectation. Color film, and for that matter, color electronic imaging systems (without automatic white-balancing algorithms in action), have no such relativity. The color that we usually describe as white, both under the relatively orange light of an incandescent bulb at a usual

[9] Gregory Currie, in his book *Image and Mind* (1995) analyzes these issues very differently, and in an extremely detailed and thoughtful way. While he makes interesting distinctions between believing and imagining, between cognitive and perceptual illusions and types of representation, his very style of analysis seems to me to fall prey to a dangerous hypostatization of the language used to describe our fundamental relationship not only to film, but to experience as well. More problematic, however is his technical naiveté regarding the *what and how* of the medium.

color temperature of 3200^{O}K., and under the much bluer average 5600^{O}K. of sunlight, is seen by imaging systems like film and video as quite different; and the fact that we are continually normalizing how we see color says something about color's potential for reference in general.

One day I got a glimpse of how both color balance and palette qualify the referential character of the movie image, in a way that made me think of Quine's thoughts on how different languages constrain our ontological reach in different ways ala the *gavangai/rabbithood indeterminacy*.[10]

I was visiting a friend who worked as a projectionist at a multiplex theater where the projection booth was in the center of a huge sliced pie of auditoriums. I could walk around the core of this circle and see nine films being projected simultaneously. As I strolled casually around, looking at the images, not hearing the sound and not participating in the stories, I was struck most forcefully by the fact that all nine films appeared to be printed on the same print stock, and therefore shared the same color palette.[11] Moreover, the slight differences in the color temperature of the arcs in the projectors gave each image an overall cast that was far more powerful in attracting me or repulsing me from the different movies than was the (unavailable) subject matter.

I realized several things then: 1) how severely this restricted color palette constrained one dimension of cinema's possible expression. 2) The fact that it's not a dimension very relevant to the kind of evoked meaning central to any of the stories, and therefore barely constrains the kinds of stories the screen can tell, is a testament to the power of narrative as it wells off the screen. 3) The shift in color temperature, so obvious when seen in close comparison, quickly becomes moot when that comparison fades. I believe that this is a testament to how hungrily we stick our hands into the narratives'

[10]And from a very different perspective, Benjamin Lee Whorf's principal of linguistic relativity, which asserts that the structure of a language influences the practitioners' manner of understanding reality (1996).

[11] Filmmakers and photographers have a wide range of choices of materials to work with and so are quite used making comparisons among them as to the way they variously render color. Color timers, the people in film labs and digital studios who manage the color of reproductions – be they release prints on film or digital masters for other media, have a very refined and complex language for discussing the scores of variables in which they trade.

glove by automatically normalizing color toward an expected standard of white or 'white balance'.[12]

So, the overall color balance of a projected image has an interesting relationship to what the image conveys. It is one of those qualities that's supposed to be invisible, and usually, if we do notice it, the effect it has on us dissipates after a moment or two. We learn to ignore it unless it's extreme.

An extreme shift in tonality – like an overall sepia wash that tells us to regard the image as an artifact of some sort, acts like a word or clause modifying the main thought in a sentence, and the sepia shift in this case is a temporal modifier, indicating that there is a vector in the image toward the past tense.

An image with a distinct sepia cast gives us the opportunity to see how the kinds of references amongst which we had distinguished in language (stipulated, evoked, etc.) can be thought of in pictures. The association we have with old photographs is that they turn yellow with age. Therefore taking a black and white image and adding a yellow or sepia cast to it suggests that it is old. We could have called this a suggestive reference the first time we saw it, and we might have recognized only the slightest hitch in our being able to go with its meaning upon presentation. However, this adding of sepia to the tone is such an obviously imitative gesture that there is a fairly universal agreement about what it means: 'What we are being shown here is old.' Probably also for this reason, this gesture seemed to become a convention quite quickly, and now I think we could quite easily say that we read it automatically: it has become stipulated by a now-recognizable grammatical element in the medium. To generalize, you might call this element 'inflection by hue shifting'.

Sometimes images are shifted blue to indicate a dream with a peculiar emotional quality – in which case you could think of this as a suggestive or evocative reference; or on the other hand, in the early days of low speed film stocks it was used to tell us we're supposed to read the action as going on at night,[13] in which case we can actually say that for a period of time in early cinema history this reference worked by convention and therefore could be said to be stipulated.

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[12] In the old, old days - before the short reels of movie prints were spliced together, films were projected on two projectors side by side, and at the reel change, one could often detect the shift in color balance between the arcs of the two projectors. This is the most distinct example that non-professionals would ever experience in the shift in color balance – a shift that once again becomes moot after a minute or two, unless the difference is egregious.

[13] Technically known as *day for night*.

Which of these cases is applicable is always determined by the editorial context (the music and the audio/visual architecture) in which the gestures are placed. We might even say that since a narrative gains the motive power of a gestalt as it gets filled in with story detail, we read these gestures according to the context that the gestalt provides. The momentum of an adopted gestalt allows filmmakers to stretch vectors of reference in complex ways in narratives without causing too many eddies in the stream of meaning. We plunge the hand of understanding into the glove of the narrated gestalt in a way that credits the color *palette*, but not so much the color *balance*, unless the off-balance shift is egregious.

What we might gain by not sticking our hand quite so obliviously into this glove, is a more discriminating sense of color appreciation, giving us wider scope for the mind to move. Just as an increase in our vocabulary opens possibilities for understanding and expression, so does a more refined or a more complex palette. But, on the contrary, and perhaps just as important, we also realize how the limited palette of one film stock can successfully reference a wider experience of color than is actually present – again, without our being aware of it. That is, we naturally expect that this limited palette will cover our actual experience of the world, as did the even more limited palette of black and white. The consideration of color palette is the job of the art director and/or the director of photography of a movie. In animated films, the color palette is usually still more carefully considered and adds a powerful but subtle vector of meaning, in its own way.

13. The polyvalence of the picture:

So far, we've made some limited comparisons between a couple of the referential styles of language and some possibilities of the *moving* picture image to reference the world. The *still* image has its own set of somewhat different referential characteristics. Whereas with prose there is a direction to the flow that is structured by the habits of the language we are speaking and is codified by the rules of its syntax to move us along in an orderly fashion; and with the narrative motion picture image there is the much more cross-cultural, universal flow of expectation created by our experience of life rendered by cinematic convention, in a still image there are few rules about just how the picture will move the eye, and thereby move the mind. Not to mention the fact that the motion picture image is almost

always presented in a context,[14] whereas the context for a still image is often much less determined.

Pictures come in all kinds. Some are composed with great thought and intention, some with none; some by people, some by machines. Some are clear, others, for various reasons are not. These are some of the many reasons we usually aren't all that comfortable with the general question of what a particular picture *means*, and why we're tempted to answer that question by trying to *tell the story* of the picture. How clear the story in a picture happens to be, and how many different people and different *kinds* of people find that a given picture tells the same story, are two criteria by which we can judge one aspect of the referential character of the picture. But when we do tell a story that we feel is contained within a picture, we can ask the same referential questions that we would of a sentence or a simple movie scene: what's stipulated, what's specified, what's evoked, what's suggested?[15]

Often, however, we just look at pictures without considering questions of reference beyond the obvious, the representational – "*What is it a picture of?"* and without projecting any dimension of time, or temporal flow into them. In fact, we usually accept that one of the basic, unique properties of a still picture is that it can allow objects and actions to escape from time, so we may regard them without thought of what happened before, or what might happen next. In fact, there might, in special cases, even cease to be *happening* going on within the frame, only that singular existential and self-referential dimension of the image: The image references itself and thereby becomes an object of reflection or contemplation. The *happening* happens in us.

We often regard pictures as objects unto themselves and since we are less used to thinking about what objects *mean* than what actions *mean*, we are more comfortable asking what a picture means when it does imply action or causality. Implied movement implies meaning. But when we're thinking about those pictures that don't imply action or causality, they truly can become like objects in our environment.[16]

Landmarks and icons have *mutually* accepted meanings. A stop sign has unequivocal universal meaning, as much because of shape

[14] Part III of this book is concerned with the various ways this is changing with the portable digital image.

[15] Please try to think of these four terms as descriptive and not prescriptive or categorical.

[16] Of course, even pictures that do imply action can, by virtue of familiarity, become more like objects in our environment than serving as depictions of a different space and time.

and color conventions – but a certain elm has particular meanings only for the people who have met beneath it unless all the folks in the town have come to public agreement, and maybe put a plaque on it. The *shared* meaning of the elm will usually refer to a common or mutual experience people have had in its presence and since objects are less portable than words, their meanings are harder to stipulate. We often call images of the objects that have come to have shared meaning, icons.

If we think about how long we look at pictures, or how simple or complex our reactions to pictures are and where they make our minds go, or how they move us emotionally, we soon realize how important and how widely variable are the contexts in which we experience them. We understand how many different ways there are for context to interact with the character of the image and influence its meaning for us.

We also realize that if we look at a picture more than once, quite likely we will look at it somewhat differently in subsequent views – different aspects becoming significant and giving us the chance to actively compare the relationship among the things, people or actions pictured, or to just revel in the tonalities and the textures.

I'll refer to a picture's character of creating multiple simultaneous references to all the things it contains, and all the ways we might normally characterize it, in its various conceivable contexts, as its *polyvalence*. Polyvalence, the possibility to make multiple simultaneous references, whether in pictures, figures of speech or figures of music, is a way of characterizing a kind of reference that is central to meaning in the arts. Polyvalence also alludes to another aspect of pictures, especially pictures that are evocative – their ability to evoke very different things from different people.

14. Meaning and mutual experience – kinds of reference re-defined:

The evocative power of words, objects and images emphasizes the fact that successful reference is a test for the mutuality or commonality of experience; that is, that those involved in the communication have had a significantly similar experience of a object, a term or an expression. When a stipulated meaning gets across we know that all parties have learned, one way or another, how to use a particular word. The success of this kind of reference is usually (correctly or not) assumed. The same goes for a specified meaning, although these are more likely to be checked, since successful reference and accurate reference aren't necessarily the same thing. In this case, the reference is truly successful only if all

parties know the same set of measures, and have referenced them appropriately. When and if a suggested meaning gets across, (by evocation, invocation, implication, analogy or shift in tone of voice, for instance) it tests the degree to which we have the experience of making the same kinds of associations and judgments about the relevance of something. Although it's almost as easy to asses the success of suggested references, it is usually much more difficult to corroborate their accuracy. But we'll see that they also test for the commonality of experience.

So how do we normally corroborate successful reference? Appropriate verbal or other behavioral response is all we've got. Then how to answer the question: "Does this mean the same thing to you as it does to me?" is either obvious – or the question is unanswerable. It's obvious if you're willing to accept a verbal or behavioral reaction/response as an adequate assurance, and unanswerable otherwise. How little the obvious answer is worth usually escapes us, since it's almost always worth enough. But given that the only criterion we're stipulating for meaning so far, is that it allows us to move on, as long as the conversation continues, we *believe* we have adequate checks for success. As far as accuracy goes – criteria for accurate reference are almost always situationally determined, often by closer attention to behavioral response, by contract or some other sort of serious adjudication.

When meanings are evoked they usually have a more tentative relationship to the continuity of communication (behavior) than do references or meanings that are stipulated. We simply cannot corroborate as easily that an evoked meaning is shared, so in normal discourse we usually use evocative references for nonessential *qualifiers* rather than for more essential *actions* or *objects*, and normally we only use evocative references to actions or objects in poems or those intimate conversations that are based on strongly reassured mutual experience.

Evocations, analogies and metaphors are like jokes: if you don't get them, their point usually gets lost in the explanation, so there's always some risk in this special kind of reference. (At least with jokes, you have a strong criterion for the success of the reference.) Simply presupposing that there's been enough mutual experience for the success of an evocative reference creates an implicit distinction: The kinds of reference evocative language aims for assumes a shared experience that has, by definition, not been stipulated (i.e. explicitly learned, like the primary uses of words) but instead, absorbed along with other broader, more general, and often interior lessons in life, those lessons that move us toward the ineffable, yet still parsable. We

use the word *affinity* to describe how easily we feel we can corroborate successful evocations with other people. Affinity is usually cumulative, and understanding affinities is a strong component in the maturation of a human's ability to communicate.

15. What has art got to do with it?

There is yet another kind of reference that's in a whole league of it's own and which assumes a very different level of mutual experience. It's found in specialized, occasionally esoteric language games, and presumes familiarity not just with places, things, qualities, sensations, emotions and dictionary definitions, but with a particular style of thought. (Mathematics, logic, art, many academic disciplines and most religions are like this.)

Whereas some theories of meaning have proceeded from the idea that ordinary language is a degenerate case of more rigorous systems of relation-making, like logic, I will enter the other door and assume, just for the sake of this thought experiment, that the referential structure in our daily talk is actually a more highly stipulated version of the way we communicate in art, with both of these referential streams – the ultra-specified and the barely-specified-at-all, evolving as parallel and interconnected streams – one addressing the outer world, the other the inner and extra worlds.

Meaning in art sorts people for mutuality of experience in terms of being able to connect with particular works and for individual taste. We can have mutuality of exposure to art without mutuality of experience. As well, when referencing that quality of inner experience that is the province of art, gauging the success of a reference enters a world where the idea of affinity becomes a much more important component in the language game. In this case, body language may become inseparable from verbal language. As if the analysis of reference, hence meaning weren't difficult enough in this realm, the world of art has undergone incredible shifts over the course of the last century. As Paul Valery wrote (1964:225): [17]

> Our fine arts were developed, their types and uses were established, in times very different from the present, by men whose power of action upon things was insignificant in comparison with ours. But the amazing growth of our techniques, the adaptability and precision they have attained, the ideas and habits they are creating, make it a certainty that profound changes are impending in the ancient craft of the Beautiful. In all the arts

[17] Paul Valery, (1964) PIECES SUR L 'ART, "La Conquete de l'ubiquite," Paris. Quoted from Paul Valery, *Aesthetics*, "The Conquest of Ubiquity."

> there is a physical component which can no longer be considered or treated as it used to be, which cannot remain unaffected by our modern knowledge and power. For the last twenty years neither matter nor space nor time has been what it was from time immemorial. We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art.

We can think of the art of this last century as one of those language games with a referential style of its own, one in which a major rule is that the rules must change. The impact of the births of new media has driven paradigm shifts that are so reflexive that they embody the very idea of the paradigm shift in the structure and exposition of the work. Not only do we expect the particular meaning of the work to be new and unique, but we have to expect that the entire conceptual frame that gives a work meaning will be something we've never encountered before. One consequence of this is that the artist, the perceiver, the medium, and for that matter meaning itself, all become possible and shifting subjects of the work of art. Some works are tightly contained, some claim no containment at all. A movie theater, with its enforced darkness and rigid direction of focus is, in this wide-open arena, a special cauldron for brewing new meaning. For here, an audience can be placed in the circumstance of *forced* attention to something that may mean nothing at all. The idea of reference can be thrown wide open when the focus of attention is so tight.

16. A whole new way of reading – the surface of the screen and the modulation of self-consciousness:

When the film screen is used successfully as a window, we know we're sharing, at minimum, 1) a similar experience of the same audio visual spectra; 2) experience with a particular language and culture; and 3) some experience with the 'grammar of cinema'. This much is easy.

Beyond this, when we enter the realm of taste, the way that people talk about their personal experience of a film (if they do) is the only clue we get about what we do or don't share of the more "human" or "poetic" or "abstract" dimensions; and what, if anything, from our previous life experiences, the sensations evoked by the film address. Successful evocative references in film stimulate feelings which seem very precise and particular to us, even though they are often provoked by the vaguest and most ephemeral stimuli. They are based in expectations that grow out of the same complex of things that have

happened to a subset (target market) of us as we lead our lives. Messages that come through the window of the screen are, for the most part, the messages of everyday life, amplified.

However, when the *surface* of the screen is being articulated to generate meaning, where the signifiers, so to speak, are not so much objects and actions, as qualities inherent in the character of the light and the way it is moving, when the surface of the screen takes on the persona of an abstract expressionist painting (whether the images themselves are representational or not), or the rhythm of the movement of light becomes equivalent to the rhythm of a musical expression, then the entire nature of the referential act changes. Within the caldron of the movie theater we're thrown back to the condition of learning to read all over again; or, to put it another way, we are simply thrown into a ritual state of openness; openness to the broth from which new meaning grows. The avant-garde filmmaker and teacher Ken Jacobs used to quote his teacher, the abstract expressionist painter Hans Hofmann, and tell his students: "Get lost. That's when your senses are wide open." Advice that works best, I think, in the safety of a movie theater or art gallery; or in the bravura of the art world.

Given how strong the pull of the world on the other side of the screen can be, achieving this openness to the simple radiance of the screen often requires some indoctrination, so the initial transformation of perspective, where suddenly we can see the screen as *a surface* with profoundly meaningful and particular implications, often has the quality of an epiphany, one usually provoked by reflection on a particular work or experience that was originally puzzling or even off-putting, as was my experience of Brakhage's *Fire of Waters*, the film I described in the preface. Often this epiphany needs to be facilitated by the guidance of a teacher. It is a transition to which there usually is resistance, a transition not everyone is willing or capable of making. Some people have compared learning to read the surface of the screen to learning a new language. I think it's much more like acquiring a mindset. Once you've got it, you have another set of eyes through which to look at things.

Gaining this mindset amounts to no more than acknowledging and crediting the *reality* before passing on through to the *illusion*. But what can we learn from so humble and mundane a reality, that's worth so perverting our natural proclivities?

If we look at the difference between a lens flare and a camera flare we can begin to see how the surface of the screen marks out a very rich shift in the ontology of reference, and suggests ways of accessing and mining that shift.

Lens flares are caused by light entering the camera lens directly and hitting the film without first reflecting off the subjects being photographed. Lens flares often appear as a starburst pattern around the image of the sun or a floodlight, with streaks of radiance darting on a diagonal through the frame, often with the shape of the physical aperture echoed by the glass elements of the lens itself. Originally accidental, their inclusion in a scene began to take on both decorative and suggestive functions through usage. When a lens flare is used as an intentional intrusion into the pictorial space, we still read it as being within the same referential framework, the same spatio-temporal framework and on nearly the same ontological level as the photographed objects. It speaks of the nature and quality of the source of illumination for the scene.

Camera flares, on the other hand, which occur when light strikes the film *without first passing through the lens*, are almost never seen in films (and have no analog in digital media – no pun), and when we do see them, they almost always mean something *cinema-referential*: e.g. the film in the hero's camera ran out at this point in the recording, or the camera got smashed. Mostly though, camera flares, which normally only occur as a result of production-related events or accidents, are the first artifacts to be edited out – since they burst the proscenium so totally, reminding us of the fragility of the illusion upon which the narrative depends and how thin is the film that removes us from the here and now; how cheaply and easily we are spirited into a seamlessly structured world of make pretend. We cherish the illusion and the fantasy. We can, however, also cherish the reality.

Camera flares usually occur at the beginning or end of a roll of film, or between takes and are usually a result of ambient light intruding into the process of loading the camera magazine. Usually they begin with the entire screen white, but only for a frame or two – where the stray light has completely blasted the emulsion from the transparent film stock.

If one is primarily attentive to the *surface* of the screen however, a unique pictorial space opens up in the interaction between these flares and the competing photographed image. It is a pictorial space that forces our attention onto the substrate, allows our eye to play with the locus of *pictorialization*, the *happening* plane, and allows our mind to question the nature of pictorialization. The irregular edges of camera flares enhance the dynamism of these interrogative pleasures.

Sometimes an editor gets a roll of film in which a mishap on the set, or on location causes accidental light to penetrate into the spiral-wound camera roll in odd and unpredictable ways, making the image

flash with a color and a rhythm of its own, a rhythm that then ultimately surrenders to the integrity of the photographed image. Here one can watch, as Levi Strauss might say, the *raw* duke it out with the *cooked*, the accident with the plan, presentation with representation. A partially light struck image is either an image seen through an obscured *window*, or a *surface* where the colors and shapes of the flare are as significant and expressive as the forms that the lens has organized. It's a little like Wittgenstein's duck/rabbit – a gestalt where the mundane and predictable projection of the photographed world gives way to other (aleatoric) possibilities of organization.

Camera flares usually end abruptly, only lasting a frame or two for that active transitional phase where there is both stray and lensed light reaching the surface of the film. Sometimes when there are long and convoluted flares and the photographed image fights back and forth for dominance over the stray light from the flare – light passing through the sprocket holes of the layer above on the spiral wind of a roll, leaves a small ladder of shadowed rectangles walking[18] up the side of the picture. Often, because of the way light refracts through, or re-reflects off the plastic film base, the flare itself runs the gamut of possible colors, while also permuting the colors in the photographed image.

The camera flare references the photo-chemical act of film making. When this becomes a thing of the past one whole aspect of that reference will disappear. But what it is that goes on when we watch something like a camera flare, that modulation of our processing an illusion, is a shift of attention, and a shift of the frame of reference from the photographed world to the auditorium in which we see the film (almost already an anachronism, itself).

As a practical matter every roll of film begins and ends with an extended camera flare, and every take with a shorter one. As an editor of documentaries and TV dramas I could look at flares in any number of ways. The obvious way, the way the job demanded, was simply to look for those frames where the flare begins and ends completely and is no longer at all apparent in the scene, and chop the entire flare out. But editing breeds a certain, peculiar cynicism, born of looking at the same bits of film over and over again. So when I'd find a long flare where the vitality, music and original, random (and therefore cosmic) beauty of the raw dancing light proved far more interesting than that

[18] This motion is especially remarkable to me in the way it is actually a motion *across* ontological planes. When one see these sprocket hole shadows moving on the screen, they speak only of the very precise unwinding of the spool of film in the camera and so we see the substrate directly and reflexively modulating the suddenly less 'real' image.

which it obscured, I would cut it out and save it on a private reel of things I found intrinsically beautiful.

If we are open enough, this beauty has some insight for us and some power over us. It references. What it references, our recognition of that beauty, can actually be corroborated easily: just ask: "Is that beautiful, or what?" The answer to a query of "What's so beautiful about it?" is often, "I don't know. It just moves me.": *the ultimate criterion for successful reference – for meaning*. This is a common enough experience for most of us, yet not so open to corroboration.[19]

17. The anteroom of meaning and our conception of space:

One can say that reference dwells in two domains, the public and the private. We reference our own experience on many levels and in many forms – for presentation to others but to ourselves as well. There may be no private languages, but there certainly are private meanings. In the anteroom of consciousness, where thoughts reside before they're uttered, where realizations dwell and emotions are felt before they're named or acted on, we have the inner experience that ultimately becomes our expressions, actions, reactions, and our art.

Of course there is no anteroom of meaning or of consciousness. That's just a metaphor, a spatial metaphor for those, oh so brief moments when we are putting things together, before we move on, before we step onto the stage, before we arrive at an expression we call meaningful, the *pre*-ah-ha.

Part of the pleasure we get from any serious film has at least something to do with how the world of the film allows us to reflect on ourselves, our own condition in life. But when we become aware of the *surface* of the screen, it can become not simply a metaphor, but a *stand-in* for consciousness itself. When we are not immediately seduced into illusion, we have the opportunity to meet the film experience on the same ontological and epistemological level as the rest of our existence. I'll give you an example.

Michael Snow's notorious films *Wavelength, Back and Forth* and *La Region Centrale* are about the modulation of perception. The first two are about an hour long each and the third is three hours plus. Each film treats the surface of the screen as the visual fulcrum for an exploration of our perception of space, and each plays in its own unique way with the swap among the various illusion-producing perceptual mechanisms with which we seem to be hardwired.

[19] I have to credit the music and the writing of John Cage for opening me to the world of aleatoric reference and comparison. I wonder if I could have found the beauty of camera flares, were it not for his priming my mind.

The three films all involve particular kinds of camera movement: *Wavelength* (1967), a continuous-seeming very slow zoom into a photograph on the far side of a studio, overlaid with alternative presentations of the same space. *Back and Forth* (1969) is just what it sounds like, a camera continuously panning back and forth at different speeds across the interior of a classroom. In *La Région Centrale* (1971), the camera movement sweeps out the inside of a sphere in all 4 axes (pitch, roll, yaw and extension or zoom.) Whereas the first two films contain the photographic representation of interior spaces and the third an exterior (in movie parlance), all of them are really looking at a *very interior* kind of 'space', the space where (i.e., the time when) we put together our conception of space. The formal tension in all three works derives from the way we are teased between reading the world as photographed by the camera, and simply reading the screen as it actually is, a surface washed in reflected light – the world in front of us at the moment. Here's how that works:

When the camera movements in these films are relatively slow, we find that the focus of our attention at first moves naturally *through* the surface, to the other side of the fulcrum of illusion into *the world as photographed*. When the camera motion becomes faster, especially in the latter two films, it is less possible, and less germane, to see a world beyond the screen – there is just too much blur, and the world of light *on* the screen dominates. We move from a depicted place in the world to the place we are in at the moment, and then on to a contemplation of the comparison between the two. It's a tension that Snow manipulates masterfully in all three films, and if you are capable of letting go of the pleasures of the illusion for the pleasures of the reality, that journey, which begins in illusion and moves to the surface of the screen, continues inward to a most stimulating inspection of self-consciousness: the pleasure of examining perception itself.

There is, in these films, a tango-like progression in this locus of inspection from extrospection to introspection, and if you can get with it, the films are hypnotic. As Snow became more familiar, and more comfortable with this model for exploring how we perceive space, his figurative gestures – the way he modulates this interstitial zone between presentation and representation – evolved tremendously. He continued having new and unique insights about how we create a world from the evidence of our senses, and new ways of sharing those insights with us. By the time he made *La Region Centrale*, he had learned enough to present what felt to me like the phenomenological version of the Book of Creation – an incredibly moving reflection on the birth of consciousness.

Michael Snow was doubtless influenced by the work of Paul Valery, another artist obsessed with the value of introspection. In fact, it was Snow who introduced me to Valery's *Monsieur Teste* (1947). In Jackson Matthews' notes on Valery prefacing my edition *of M. Teste*, he presents Valery's observation about self, that consciousness and meaning "like the wind, can only be seen in other things."[20] A camera flare can seem a meaningless intrusion, or can function like a phrase meant to stipulate a story point (the film broke); or, on the other hand it can mime the way thought emerges from disorder in our minds, an allusion to the way mental images come in and out of indistinctness. Or it can simply be taken for its intrinsic beauty, an example of *epistemology brought home*, a reminder of how we get knowledge of the world and make meaning of it.

18. Meaning and mental habits:

The simple conception of meaning as mental movement can give us a slightly different look at how *usage* (the way we happen to, or learn to use words) and *meaning* (the impact they have) relate to one another. The way we learned to form the flow of speech and thought as infants, by moving our lungs and tongues, our lips and larynxes, obviously developed alongside the way we learned to move the rest of our bodies in space. The pace and the rhythm of that flow and the way we load it with content have become for us, as practiced adults, spontaneous elaborations on deeply habitual patterns. What happens when those habitual communication patterns are challenged?

Similes, metaphors, and other still more unusual methods of comparison in language may perturb the flow of a communication act, a little or a lot. Their analogs in cinema may force us to make a palpable leap either between the interactive terms of the comparison or in reaction to some surprising feature of the picture or the sound.

If in a poem, for instance, a conceit seems too obscure or ambiguous, and we cannot make the leap, we hesitate or we stop. No forward movement in the flow of thought: no meaning. A state characterized in comics books by the words "waaah?" When we don't understand the metaphor, the joke, the concept, the painting, the film, or if we *kind of* get it, or if we *maybe* get it, thought eddies, and spins, pulling for associations, generating bridges between possible contextual associations being made by the author and the imaginative abilities of the reader, listener or viewer. In those moments, if we make it across the associative chasm, a zone that's new to us gets

[20] See Introduction, Valery, P., Monsieur Teste, (1947:x).

sketched out, a zone we haven't seen before, an insight forced by the diversion of thought. A gift from someone else's beyond.

We revisit great poetry, painting and music endlessly because we never really get it all, as in Valery's epigram *"A poem is never finished, it is merely abandoned."*[21] Multiple meanings interact to create still newer meanings. The generation of meaning neither flows automatically nor stops. Each successive time you encounter the same comparison of terms, that comparison should reference a new level of understanding.

Poems also refocus our attention on the medium, either the spoken sound of a line or how it sits on the page, in a way that's similar to our regard of the movie screen as an item unto itself. The encoding embedded in a fully realized poem always extends to the way the ink sits on the paper and the phonometrics fall to the ear. The words also always carry some awareness of the history, the musicality and the resonance of possible meanings that lie around each word. The medium for poetry is not just language, but self-conscious language. Multiple meanings abound in poetry so the movement of the mind through a poem is rarely linear, it is often perturbed, sometimes oscillating beautifully, sometimes downright turbulent, a quality of movement orchestrated by the poet, and conducted and played by our selves. Also there is the expectation that it will be idiosyncratic. That is, the mind will never have moved like this before. Meaning in a poem is earned more than assumed.

19. Assumed and earned meaning:

Meaning in a representational artwork or photograph is usually a combination of the assumed and the earned, where the assumed dominates, at least initially. Our immediate seduction into the world of the picture – the world beyond the surface, the world that is being represented is what's assumed. A representational artwork or a meaning-laden photograph, if it has the power to hold us long enough, will give up, or we can wrest from it, further meanings, earned meanings.

At least some of Rembrandt's etchings have Wittgenstein's duck-rabbit thing going on in spades; that is the longer you look at them, the more you can see distinct, autonomous and coherent configurations of represented space and subject co-existing as alternative ways of reading the depiction, as in *The Nativity* where, after a while, we can see the outline of a skull filling the center of the image (with the dark shadow from the lamp seeming like the eye

[21] Also ascribed to C.S. Lewis and Joseph Conrad among others

socket.) The reference can be directed and the different configurations anchored by giving names to the depictions, e.g. *The Nativity* or alternatively, *The Skull*. (Figure 2)

Figure 2

Rembrandt's *Nativity*. (1654) Courtesy of the Rijksmuseum.

In a non representational artwork, however there isn't the same immediate seduction into a world on the other side of the canvas. The seduction is formal, and it is *to* rather than *through* the surface of the image. Here, the power to seduce lies in the pure beauty or expressivity of the medium itself: how a simple line can speak with such eloquence and how the simple juxtaposition of form and color and texture can echo the considerations and emotions that stimulated their having been laid down. When we do get to the other side of the surface, if we have the patience, and the desire, or the mindset – instead of an external world, we are given some of the being of the artist through the agency of his or her decisions, a subject that is often at least as beautiful, or at least as interesting as any rose in any vase. So what is *referred to*, in the case of abstract painting, is something

directly of the mind, or the spirit, or the being of the artist – a being worth being with – a palpable way of regarding the expressed considerations of color, form, visual thought or impulse, etc.[22]

But what do you call the style of that reference? Being alive to? Being tuned to? This kind of reference is often expressed in body movement. You could ask someone looking at a deKooning or a Pollock, "Have you got the beat?" as easily as you could ask, "Do you know what it means?"

20. The spectrum of shared reference:

With purely representational pictures, like documentary photographs, it's often not primarily meaning that we're sharing, but information or data. Where we'll *go* with that information is up to us, since the reference in most documentary photographs is, as we've said, primarily and directly to places, people, things, and actions. We don't expect clear, neutral pictures of people, actions and objects to *mean* something specific; what's specific is what they *depict*.[23]

However, we often expect some kinds of pictures to have particular, and precise *meanings*, referencing more defined sensations in us, in which case we may ask "What does this picture mean *to you*?". In those situations, we might expect that others will describe seeing and feeling something different than we will. But perhaps, in its own way, the impression, though maybe entirely of a different order, will feel about as precise to them as it did to us. How we talk about different kinds of pictures gives us a clue about where they sit in the continuum of shared-ness of reference; and, as well, how much of a continuum of shared reference there is across all the different kinds of pictures, from a picture of an ambiguous smile, to the frontal image of a victim of war.

So this is an interesting feature of references: the degree to which we expect a particular reference to be on the one hand common, or on the other, idiosyncratic in its success; that is, whether we expect everyone to get the 'same' feeling, or whether we expect everyone to get their own peculiar understanding of a picture or a poem or a melody. Recognizing that pictures have this quality differently than words is a very useful way to think about grading the specificity of references in general; especially across media and circumstances.

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[22] This distinction between abstract and representational, is not only a soft one and getting softer, but can easily be misleading to the eye.

[23] Though you might think of depiction as a special subset of meaning, under our wonderfully spare description of meaning as mental movement, the mental vectors of a reference by depiction would seem to suit any bare-bones correspondence theory of meaning.

For instance, if we look at the graduation of specificity of reference in verbal communications from the meanings of *words*, whose references are usually tight, to *sentences* which may be looser, to *metaphors* or *figures of speech* which court ambiguity, it's obvious that the degree to which we expect others to share and how precisely we expect others to share our view of things, dictates our style of speech. So there's at least two things we can think about when we share references. Are we moved; and are we moved in the same way, or to the same place? The question of whether or not we are *moved the same* seems progressively more problematic as we shift from math, logic and ordinary language to the arts – wherein, if we continue to move along with the flow of an idea, we must assume meaning has been accomplished and the reference is still successful, even though we all assume that the referents are likely to be different and personal. Having said this much:

21. The story sequence and the montage – prologue:

There is a sea of meaning into which words can't dip an oar, but which three pictures, considered together, and maybe in such and such an order, might get you into the flow of a very different style of thought. So, this leads to the idea that still pictures in a sequence are yet different from both words and individual still pictures in the way they create a path of related movements (meanings).

If the three pictures are arranged so as to be considered as a sequence and each picture in the sequence implies an action continuing across them in a story, we can expect a certain kind of flow in the way our eyes and minds will follow a reasonably predictable path. If instead, the pictures show three people in contrasting states of emotion, or circumstances of life, the flow may be less linear and more idiosyncratic as the eye moves back and forth among them to make active comparisons. If the sequence simply shows three abstract forms, then the flow of thought, if any, is likely to be quite unpredictable (and difficult to corroborate as well.)

When a picture appears to move and is accompanied by relevant sound, there is a momentum that gives the flow of meaning a much more predictable (but sometimes a more elaborate) set of vectors. The effect of this synergy of pictorial, kinetic and sonic as it occurs in the movies, is usually much more direct in specifying reference than a sequence of (silent) still images. And, to go one step further, you might say that a motion-picture montage is yet another form of representation, having vectors with the rhythmical characteristics of both the sequence of still pictures and the singular moving image. The moving image has as a component, a unique, linear momentum.

22. When the editor learns about meaning:

The film editor's job is to take a bunch of moving pictures and synthetic sounds and string them together in a way that creates the best relationship to their meaning-potential. It's a wonderful and complex job, and at its best it's full of very rich choices and many opportunities to examine and discuss with the other collaborators in the creative process what a sequence of motion pictures can mean.

The picture sequencing in most films is driven by the verbal content. There's a script in the case of theatrical films, and/or a set of interview transcripts in the case of documentaries. Beyond these written guides, there's a set of established practices that suggest how a sequence of images needs to flow in order to keep a viewer oriented in time, space, and context – in order to follow along with the story; and these practices are oriented toward linear, verbal exposition.

Then there is yet another verbal (as distinct from pictorial) dimension: the conversation among the other 'creatives', the writer, producer, and director, et al, as continuity, nuance, ambiguity and innovation are wrangled from the assembled picture and sound resources. If you eavesdrop on the conversations between a director and an editor working at the forge of *mis en scene*, you'll get a schematic of the process of *meaning-fabrication*. An editor knows what will 'cut' and what won't 'cut', i.e. what will move the mind along without a ripple, and how to make a ripple when it's called for. A director knows what materials have to be created and brought into the edit to produce an image flow that *will* cut and produce the effect that's wanted. The talk that goes on between a director and an editor reveals a lot about the demands of balancing shared meaning (wide appeal), or clarity of purpose on the one hand, and the role of ellipsis or ambiguity to give nuance, mystery or resonance to the movie, on the other.

But mostly you realize that in their discussions and considerations, movement and meaning are almost synonymous. They are concerned with how the eye moves, how the action moves, how the camera moves, but more than anything, how the story gets moved along and how emotions are moved. And all of the inflections under their control – shades of pictorial representation, kinetic inflection, inflected speech, music, natural and fabricated sound, abstract light and color, are discussed among them in the same breath. They are trying to describe the differential impact of this shot or that shot in terms of a spectrum that ranges from the rational to the emotional, from the heart to the brain, or the left brain to the right, or on any of the other poles of experience and knowledge worth sharing with the unknown individuals in their target audience. It is in this context,

when talk about pictures is concerned with the *goals* of signification, that meaning viewed as contextual movement comes closest to being a simple and homogenous equation.

23. Montage and metaphor:

Montage is a term that's become so useful that it's leaked out of the editing room to become emblematic of a quality in our lives – like when we've had a day in which the natural continuity of events has been fractured. When the word *montage* is used *in* the editing room, it almost always indicates a shift in responsibility from the director to the editor, a shift in the style of the conversation, as well as a shift in the style of meaning going on in the film. The responsibility for organizing the flow of images usually shifts because in a montage it's harder and more time consuming for the director to talk about those particular qualities they both know are only expressed, or best expressed by the *lyrical* juxtaposition of kinetic tableaux; a style dominated by the abstract and evocative powers of rhythm, texture, tone and implication – the motion picture editor's vernacular. These are far more difficult qualities to script or specify verbally ahead of time and are easier to *talk* about in progress or when realized.

At the point where the goals of signification are better served by a montage than a narrative flow, you might hear a director say, "Okay, so we go to the montage, which comes out of the shot where the pail of milk hits the wall and ends when we see her look of shock and astonishment." This is accompanied by elaborate gestures, and concludes with: "So, you know what to do, right? Make it really haunting with that[24] almost subliminal feel!" Then it's up to the editor to begin making specific (and temporarily autonomous) decisions. When they are talking about the sequences preceding and succeeding the montage they'll mostly reference the scene and take numbers in the shooting script, often by shaping the air with their hands, leaning on the various common understandings they've developed over the weeks or months of working together, discussing the script's ineffable potentials, considering where and how those qualities are manifest in the shots. But when they get down to discussing the montage, a new kind of phraseology, one that pops up only intermittently in the

[24] The facile use of the indefinite reference *that* is a mark of a compatibility between the editor and director that speaks of the power of the local language game, shared experience and mysterious affinities. Misidentified antecedents in the editing room are a very common source of either annoyance or humor.

discussion of traditionally cut narrative sequences, begins to dominate.[25]

The stuff that's really significant in any conversation about a montage is far more likely to be contained in the tempo, emphasis and the tone of the dialogue than the words themselves. When a montage is discussed in detail however, and the accuracy of a reference is critical, shots, gestures, actions, sounds, bits of music etc. are given names and/or numbers. And at that point meaning becomes precisely specified. The task of naming hundreds, or even thousands of pieces of movie source material for reference by many collaborators, or even just by the editor at a future time, often stretches the edges of family resemblance, especially when the names for those pieces of source material are turned into contractions or acronyms that are small and concise enough to fit on the label attached to it. This is one case where a correspondence theory of meaning, and either a good index, or good recall is all you need for a successful (and quickly corroborated) reference. ("Oh, yeah – this is the piece that goes here!")

Edit-room-speak is definitely it's own set of language games, where scenes, shots and characters, not to mention techniques, adjustments, styles, schemata, and dilemmas, etc. all acquire their own unique names. But the overall process of finding a shared meaning style in the editing room, with effective referential accuracy, and which is called 'chemistry' is, when successful, a great example of the organic and spontaneous growth of a referential process.

If we think about the difference between the way shots are arranged in a narrative sequence and the way they are arranged in a montage we can get a slightly deeper insight into how pictures in general can mean. Narrative sequences have a style of movement reminiscent of prose sentences: the shots in a sequence relate to one another in such a way that a principal or dominant idea is unquestionable, e.g. the hero moves through a coherent space in a clearly decipherable amount of time. We are looking through a clean window, the mind moves automatically, without hesitation, without reflection, even though the space and time we're seduced into has been totally, painstakingly fabricated. In this case the pictorial values, like how sharp or diffuse the light is or like the camera style of an elaborate crane move, are only nuances of gesture, only modifiers of a major and unquestioned flow of action.

[25] A highly context driven shorthand rapidly evolves in the practice of making reference to places in, or aspects of a movie, shaped first by industry wide usage, then genre specific usages, on down to usages common only to the immediate, active participants in the language game – the editorial crew of that movie.

However, even though there's is no real 'sentence' structure in a montage, there's just as strong a need for a dominant idea to move it along. That idea is usually expressed by the coherent articulation of musical and pictorial values e.g. melody, rhythm, color, motion, texture and composition. In a montage you could say that the modifiers become the main parts of speech, and what were the main motifs, whether they be the characters, the settings, or a car chase, become incidental to the principal force that keeps the mind moving through the cuts. Rhythm, sometimes musical and sometimes kinetic is what drives the montage. In fact most editors will cut a montage to music (usually what's called a 'scratch' or temporary track that has the final rhythms and a more or less appropriate 'feel') since they are almost all driven by music in the final product.

There are some things about the way the mind usually moves in a montage that makes them very hard to sustain for more than a minute or two. Since there isn't an agreed grammar involved, and there are very few rules in montage cutting, their idiosyncrasy and unpredictable meaning style, along with the absence of the linear pull of the narrative, limits them to being used as omnibus introductions to the themes, settings or characters of the story; or as interludes – a kind of *amuse bouche* served between courses to cleanse the palate; or in the depiction of a peculiar circumstance, condition or state of mind.

Dream sequences stand somewhere between the meaning-style of a narrative sequence and that of a full blown montage sequence. The standard narrative sequence imitates the shared aspects of the way we perceive life. The dream sequence imitates the shared aspects of the way we experience dreams. The montage imitates neither. This alone makes it harder to assimilate. It is a new, unique style of representation and we don't thoroughly know what to do with it yet.

We can say that a standard narrative style means to imitate life or represent life, or a dream sequence means to imitate or represent the dream state because we believe we share conceptions of what these states are like. The montage, which does not presuppose any singular corollary state, often *portrays*. This difference, between imitation or representation on the one hand and portrayal, on the other, connotes a slight, but significant shift in the balance between author and audience.[26]

We mostly assume that 'normal' people, all share basic aspects of sentience. The mere fact that the conventions of narrative cinema and

[26] We note that in otherwise straight narrative scenes of great emotion or great complexity, or subjectivity, the editorial style will become more montage-like and shift to an emphasis on pictorial and musical qualities.

dream sequences are successful is some confirmation of this. But since a montage is more like a portrayal than a depiction or an imitation, the heavy lifting in the process of referral is shifted to the author. Authorial idiosyncrasy rather than commonly shared experience bears more weight in the process of signification when we are shifting to the attempt to evoke a new kind of experience from a very personal point of view - from the attempt to depict what is assumed to be a shared public experience.

A montage does not share the flow of the *movie time* of the film, it has a flow of its own. A montage often demands that the audience step into the author's shoes in order to feel the flow or the importance of the sequencing of images; and for this reason a successful montage is a testament to the communication, on very many levels, between a director and an editor; and as well between the collaborative team and the audience.

From the perspective of linear story telling, the cutting in a montage uses ellipsis in a way reminiscent of the terms in a metaphor or simile: what happens between the shots may signify as much as any shot itself.

24. The imitation of perception:

In his beautiful monograph *Devotional Cinema* (2003:28) Nick Dorsky illuminates something of the relationship between our perception of the world and our imitation of perception in cinema when he calls attention to the fact that pans and tilts in films, when used to suggest the act of 'looking around', are almost always awkward[27]. He points out that rather than panning, our eyes actually move in a jerky sweep and our vision proceeds in discreet shifts. We parse the visual space around us by the glance, and rather than perceiving a continuum, we assemble our sense of a continuum from the glances. Therefore a series of shots and cuts provides a more realistic representation of looking around than a pan, or tilt. Our shifts of attention, as we experience the world, are often not contiguous – as we jump from the here and now to a recollection, for instance, or a distant allusion, and are almost always also elliptical to some degree.

Since the cuts in a movie imitate the shift of our attention from one discreet configuration to another, ellipses and discontinuities included, when we see *any* sequence of shots and cuts in a movie, we

[27] A very interesting exception to this is when there is a meta-frame within an image, such as a mask suggesting a telescope or binoculars, or a rectangle suggesting a camera frame. The effect of this contextual device is to put 'quotation marks' around the image.

are predisposed to accept that they represent a coherent idea of *something*. Our tendency to go with the flow in a movie, further powers ellipsis and discontinuity as dynamic tools for filmmakers who need to articulate the unfolding of simultaneous events, or the comparison of states of mind using parallel cutting; or the even more elliptical cutting we call montage.

The evolution of *Eisenstein's montage* into montage as we now know it has been driven by filmmakers who are as moved by the evocations of pictures and sounds for their intrinsic beauty, as by story; who are moved by the inherent poetry of a picture or a melody; who are rarely relying on the expressive subtlety of actors, and who understand the many, many ways meaning gets generated at the cut.

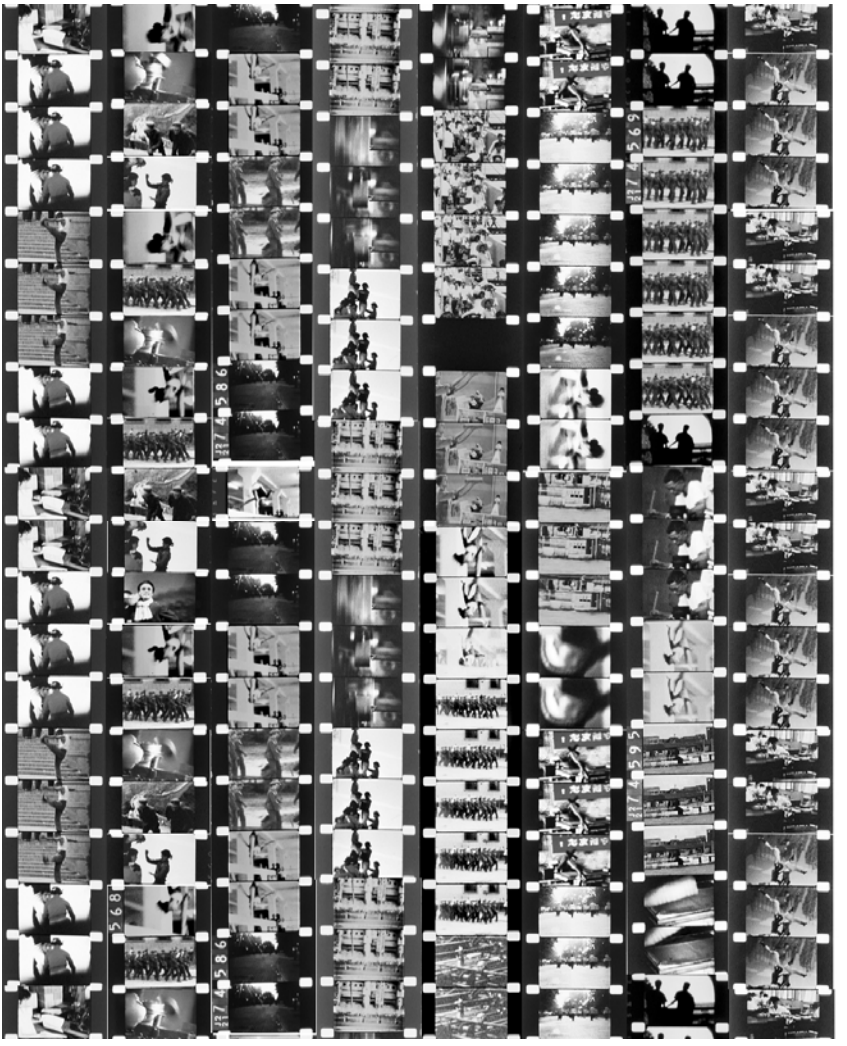

Figure 3

Various rhythm schemes excerpted from *The Chinese Typewriter* (1983) (by the author.) The schemes were arranged interspersed with longer continuous run passages to form musical crescendo/decrescendo shapes. Rhythmical patterns like these are created on the optical printer.

Part II

Dynamic And Syntactic Universals

25. Non-Verbal Universals:

So far we've looked at meaning beginning with narrative language, making comparisons, first with general image making, specifically painting and photography, then expanding consideration to more metaphorical and elliptical expressions – poetry and abstract images. But we've hardly touched on music. As our analysis of cinema continues we will progressively leave behind the linear conceits used to structure meaning in narrative language and move toward what I consider to be the other, more formal end of the spectrum – the musical – and try to imagine what a cinema whose temporal element is driven primarily by *musical* conceits would look like and would be capable of expressing.

Once again, using the simple heuristic of *meaning as mental movement* we'll compare the way a sequence of images vs. a sequence of tones vs. a sequence of phonemes or morphemes can move the mind along to produce that sensation of fulfillment we get when an expression is received as well-crafted, on target, peculiarly enlightening, powerfully moving etc. (either within our own editorial minds or those of our audience.) All this with an eye to the potential of future expressions – new ways that cinema, with all its modalities may be capable of creating that sense of fulfillment.

There is a teleology embedded in this analysis to which I ought confess at the outset, and it drives toward a simple motto that lifts off the observation that verbal communication between humans develops from tonal and rhythmical shifts – *babbling* – before articulation proceeds to the production of words. This is the observation that drives virtually all of the other analysis in this book. It is the absolute foundation of the idea that there is a strong, and largely unanalyzed dimension of meaning in verbal language, which both surrounds and conditions the *syntactic* and *semantic*, and which is *rhythmical* and *tonal*. My motto is: *Music is the Mother of all Meaning.*[28] This is the flag beneath which ordinary language and the arts unite. And since it is the *structural* paradigm of music that we'll be talking about, let's

[28] Tests of speech rhythm discrimination in cotton-top tamarinds have demonstrated just how fundamental an idea this is. (Tincoff, Hauser et al 2005)

begin by analyzing cinema according to a structural paradigm that would also work for music – in terms of the relationship among units.

The smallest unit in analog cinema is the frame, so when we're talking about getting the mind from "here" to "there" any analysis needs to begin, not only with the ultimate value of the individual frame, but even more, with the value of the difference between any two frames. In this process we will uncover two sets of universals – one dynamic and one semantic, which will allow us the opportunity – in fact will give us the power – to transcend the limits of parochial human languages, allowing us to create detailed and nuanced meaning across cultures. Remember the motto, as we stroll along.

To begin with we have to recognize that although compelling, the arrangement of frames into shots, where a shot is considered the minimal unit of meaning in cinema, is an arbitrary convention, and which is based on a narrative rather than a musical paradigm for structuring meaning in film. We normally consider a 'cut', the transition between scenes across which significantly different pictorial content is encountered.

HOWEVER:

When three or more adjacent frames have significantly different content, a very new kind of potential opens up. We are driving the rate of change, the rate of image substitution to a speed that significantly warps all the rules of the signification game. The cut is no longer between scenes, the cut is between frames. We have had three images thrown at us in 1/8 of a second. Imagine four images seen in one second. *Now, imagine that you see them each for only one frame at a time, but sequenced A, B, C, D x 6. Now imagine that there is the implication of motion within each of the four images!* Of course what you will imagine depends greatly on how much the content of each of the images differs. (Figure 3)

As our expectation of the way light ought to be modulated in cinema expands, the potential for meaning increases; our experience grows and our understanding is challenged by that transition. In order for this to happen – if we are going to be able to move along with the flow – we are forced to come to a new way of recognizing and processing visual information. How fast these challenges come at us, whether the "cuts" come every single frame, every other frame, every third or fourth frame, etc., not only introduces a rhythmical component independent of perceived motion within a scene, but even more important, dictates how we assimilate the flow. Which of the possible 'spaces' does the stream of imagery inhabit? Are they happening through the window of the screen, on the screen, in front of the screen (think 3d glasses); or perhaps even on the inner screen

where other kinds of representation are processed – that 'screen' where we play the novels that we read. On a more trivial and perhaps less fantastic level, the speed with which new content hits us influences whether we read and absorb it with deep reflection, savoring it across many dimensions and many levels of our beings; or, because of high speed and rapid flux, do we absorb a flux of imagery as referencing more shallow and "literal", or graphic, kinetic, and rhythmical, aspects of meaning. We don't have to come to any profound conclusions, as we encounter this avalanche of cuts, we just have to move with it, to go with the flow.

The business of making films with images and sounds sequenced with speed, ellipsis and discontinuity in ways that test the limits of apprehension, is like creeping out onto the thin ice of the unparsed. Really fast cutting, wherein the articulation of pictures occurs at the same rate as the normal articulation of words, phonemes or even musical notes,[29] becomes the tentative ground of a new language, a language with as yet few rules and only the barest hint of what a 'grammar' might be like, and provides so many challenges to both the maker and the viewer that it seems an extremely unlikely direction for cinema's evolution.

The only reason we have to think otherwise, to think that a significant volume of the overall motion picture flow might move toward a music-like structure similar to a hyper-quick montage, has to do with the potential wealth of the transition qua transition, as well as the fact that the medium's ultimate potential lies as much in its kinetic/pictorial character as in its word-ghosting dimension. There will almost certainly always be a verbal/dramatic cinema, but as the inherently pictorial and kinetic – the *motion picture* aspect – of the medium comes to the fore, we have to expect that paradigms more native to the essence of the medium will dominate. And we'll have to wonder what they'll look like.

Oh, and there's one other reason. In terms of data in and data out we seem to be evolving into ever quicker creatures in terms of response time, with shorter unitary attention spans.[30] More on this in Part III.

As we look toward this future, the slow decline of traditional literacy may be something to lament but the evolution of pictorial literacy is something to celebrate. The tension between our fear of the

[29] Steven Pinker (1994:161) suggests that casual speech is perceived at a rate of 10-15 phonemes per second, and artificially sped up speech can be decoded at up to 40-50 phonemes per second.

[30] The *character* of attention span in many, if not most, cultures appears to be shifting. To say it's getting shorter may be a mis-representation.

new and our excitement with it is the edge upon which the evolution of this form of expression turns. As strong as is our tendency to look thru the surface of the screen, and our desire for a temporal flow that mirrors the literary aspect of our shared lives, there is another door to the anteroom of meaning – the gathering place of the ineffable in life, a door out as well as a door in; a realm of experience, and now that the tools of cinema are falling into everyone's hands, a realm of expression as well – and it has the capacity to evoke with the same efficiency as what is now stipulated in speech, and to stipulate a whole new, as yet un-glimpsed level of communication. It means something very radical however for our verbally off-hand practice of cognitive communications. It means something that, really, only visual and musical artists are currently comfortable with. *It means learning how to think without words.* In some nearly mystical sense, it means doing without knowing. It may even mean embracing *nescience* as a motivational and functional modality. Brave New World.

26. The polyvalence of the picture and the omnivalence of the movie:

As we've seen, a typical picture can speak with a great deal of simultaneity. After all, the visual field itself is processed with some degree of simultaneity. It may contain many people, objects, relationships and implied actions, each of which carries some significance, hence the potential for lots of referential relationships. A picture that contains people in a landscape for instance, may always reference the people first, but can also reference the whole, or any of its parts or qualities as we consider them, separately and together.

Pictorial composition, the placement and emphasis of people and other elements within the frame, is a major factor directing the movement of the mind's-eye, assigning referential dominance as well as generating our sense of story, if any. Pictorial composition *itself* can also be the dominant subject of an image, wherein the peculiar rhythms of our shifts in attention and the way the eye revisits elements, making *subsequent* comparisons, represents a dialogue between our persons and the composition of the picture. It's as if the surface of the image becomes a semi-silvered mirror as our mind dialogues with itself, contemplating the relationships and the dominance of various objects or implied actions, manifesting how any particular arrangement feels or speaks to us. In some cases it is the set of relationships, the composition itself that speaks to us as loudly as the people or objects or implied actions. Composition creates its own meaning, and whether or not you can describe that dialogue to

anyone, or even verbalize it to yourself, the form of the dialogue reflects something of how the picture has moved you. The particular quality of the movement of the mind's-eye through our experience of a picture often evokes a cascade of responses at many levels. Pictures often mean in many different kinds of ways.

All the nearly simultaneous representational, narrative and evocative possibilities of a picture, its polyvalence as we're calling it, is sometimes subtly and sometimes grossly bound by and shaped by the circumstances under which we consider them. The degree or depth to which a picture engages us, either in its subject or in its formal nature, the degree to which we are allowed to revel in the pleasurable repetition of line or motif, or even in how these formal considerations themselves may resemble or echo the pleasures of metaphor, or music, is conditioned by the situation in which we encounter the picture, and how open we can be at any moment to its various levels. Is there music playing as we look at it? Is there noise? Is there conversation? Are we sharing? Are we in a frantic or in a contemplative frame of mind? Did we encounter it purposively or accidentally?

Both reactions that are overt and well defined, as well as those subliminal responses of which we cannot speak, power the echoes of polyvalence. Resemblance itself, as it makes words, sentences, melodies and metaphors possible, also underlies the polyvalence of pictures: how our eyes search to relate the expressions of the man and woman, the posture of their bodies, the dusty tone of the colors, the ambiguous shapes in the foreground, the background. All this potential and this ambiguity is contained in just one possible picture bounded by its own frame. What about the relationships between pictures, and among pictures?

Outside of their immediate narrative implications, part of the complexity involved in reading, in deriving coherent meaning from either an *array* of still pictures or a *sequence* of still pictures, has to do with the fact that there is a potentially exponential increase in possible referential relationships when we are *expected* to relate several pictures that have no apparent narrative connection to one another. If a narrative is apparent in the way pictures are sequenced, polyvalent references are usually subordinated according to their relevance to an essentially linear narrative. If there is no reference to a dominant set of dramatic actions unfolding in time, either represented or implied, then some other aspect of the set of pictures – locale, mood, style, general subject etc. will dominate our experience of them, at which point another referential condition becomes possible – one which has tremendous structural implications for the aesthetic possibilities of cinema (and other motion picture and picto-interactive media.) I'm

talking about the uniquely cinematic quality characteristic of the perfectly balanced and *self-contained* montage, in which we may find a nearly perfectly balanced sphere of potential cross-references, polyvalence cubed: a quality I'm calling, after Valery, *omnivalence:*

27. The description of omnivalence as a floating target:

When all of the referential relationships in a set of images have the potential to cross reference one another, that collection of images aspires to the uniquely poetic condition of omnivalence, wherein every term relates to every other term with some equivalence, a condition defined by an ultimate economy of reference, where no meaning potential is wasted. The near-symmetry[31] of mutually equivalent reference is what creates the great artistic works of endless internal resonance, where, to various degrees, everything resembles and/or refers to everything else, where the relationships team to harmonize the wavelengths of thought; where, in subsequent experience, dominant references can come to seem secondary and vice versa. These works are the *Taj Mahals* of time-based media. If there is anything that they are 'about' it is themselves. They are artifices that aspire to the ultimate coherence of nature.

It is in collections of still pictures that don't have an implied narrative relationship where the potential for omnivalent reference is greatest. Conversely, it is the magnetically linear, inveterately narrative character of motion pictures that makes omnivalent resonance more remote. A careful narrative, a poetic narrative, can participate in the economy and resonant power of polyvalent reference in pictures or in prose, but all symmetries will be warped according to their relevance to the story. A montage, like a poem, freed from the chores of narrative coherence has a better shot at a near-symmetrical cross reference.

A montage within a narrative may well have skeins of internal coherence, but its ultimate and overall coherence will reference the themes and needs of the narrative – it will ultimately *be about* the movie and not about itself. Likewise, with any montage that *accompanies* and *serves* music: In a music video the relationships among shots need only be tactical, since the strategic relationships are dictated by the musical form. But the resonance in a tactical set of

[31] Since I'm talking somewhat dreamily about an aesthetic ideal here, a hypothetical, it's extra important that I be precise. Absolute symmetry, in my conception renders movement, hence meaning impossible. Conceptually it seems like a fun and worthy experiment to try to create a work with absolutely symmetrical omnivalence and see if it indeed does become a black hole of meaning.

relationships is easily exhausted, and our interest in the montage and our ability to move along with it becomes exhausted as well; therefore we begin to look forward to the direct referential style of the narrative. But when a film is a montage from beginning to end, it has the opportunity for, and also the necessity of, overall or strategic formal coherence. And it also has access to the possibility not only of internal, but also the external resonances and economies characteristic of omnivalence. Whereas total, overall, formal coherence has long been the meat of poets, painters and the composers of formal music – all practitioners who have had thousands of years to evolve formal conventions – for filmmakers, 'formal' or 'structural' filmmaking is still a world of splendidly thin ice.

The reward however, is that a film whose overall structure participates in the same symmetries as do its internal relations, and therefore does become a cinematic *Taj Mahal*, so to speak, such a film can come to be as much a fixture in our lives, as other great works of formal art. Those early films of Michael Snow, as well as the best work of Stan Brakhage, Ken Jacobs, Kurt Kren, Saul Levine, Jonas Mekas and numerous other great poets of non-narrative cinema are examples of films where much of the meaning of the work is carried in the highly specific relationships among elements of both internal and over-all form. Their use of the structure of the work itself as a dimension for articulation is one of those things, that when you recognize that it is being done, how it is being done, and the impact it is having, creates new possibilities for seeing and thinking. As those new dimensions are opened, they become the expressive ground of a medium that it was impossible to conceive of, let alone express, before cinema.

As omnivalence becomes a practiced expectation of a formally and structurally aware cinema, the gestures, expressions, schema, tropes and forms that had once been unique and revelatory will become acknowledged and then commonplace. As particular expressive tools subsequently become codified and conventionalized, the native language of cinema can really begin to evolve. In this evolution, purely formal styles of reference, which are no longer confined to the world of the montage as title background, or song background, or *amuse-bouche*, can enter the historically developmental flow of other formal media like lyrical poetry, abstract painting and music. The mind will have learned to move with them easily and precisely, their hinges will have grown tighter; they will have a history of their own and the possibility of historical allusion that is so important to the other formal arts. But because these tropes may then be used in more of a "one size fits all" fashion, as happens

with words in a vernacular, the precision of which they were once capable will have been reduced. If formal gestures are robust they will become like words in a language, if not they will only have the longevity of clichés. But by then there will be ample new ground for fresh, and newly precise tropes.

Things come to mean what they do. The constant morphing of language is well served by the idea of a language game, a way of talking that has always got a semi-permeable boundary. Omnivalence will always remain a moving target.

28. Dynamic universals: beginning, middle and end – a prologue:

Once I was given some 45 hours of video interviews and accompanying b-roll[32] to edit that was shot in Russia in 1991 just after the collapse of communism. It arrived in my office with camera logs containing some rough translations but without any time code references that would help me correlate the rough descriptions of what people were saying with the footage at the sentence or word level.

I deduced from these camera logs that the interviews were mostly about how lifelong communists of various stripes felt about Communism after the Party was outlawed. When I listened, even in a language I couldn't understand, it was still immediately clear where people's thoughts began and ended. It was also clear when something central to a thought was being articulated; or, on the other hand, if a thought was parenthetical. And I had no doubt about the degree of conviction or hesitation that ideas and sentiments carried. After a while I even picked up on characteristics of the way people looked and sounded when they were using place and object names, as distinct from action words, or qualifiers. Most of all, I was able to read from these interview subjects shades of emotion and inner contradiction that I might have missed had I understood Russian. I didn't understand what it was that someone might have an attitude toward, but I felt like I could easily and finely characterize the attitude itself. I was looking *at*, not *through* the quality of their speech.

The more I watched the footage, the more I became interested primarily in these gesturally encoded, finely shaded, emotional tonalities. So I decided, as a kind of experiment, to edit the interviews and juxtapose them (sometimes inter- cutting at the phrase level)

[32] B-roll, in documentary edit speak, is the collective term for background visuals. The primary verbal material driving almost all documentaries is the talking-head interview, which is considered a-roll. A typical documentary can be broken down into picture: a-roll, b-roll and graphics; and sound: synch, voice-over, music and effects.

without a tight translation, or a translator in the room, just to see what this exercise would yield.

Honed by years of editing interviews in English, I just followed my gut reaction to the more abstract and formal qualities of the speech and the facial and body language – the acoustical shape of the words and the visual shape of the gestures. Even though I did not know what was being spoken about more than the hints I got from the camera logs, it still felt like I could follow along with the music.

After I had completed a rough-cut, following that formal, musical and emotional scheme, I finally brought a native Russian speaker into the edit to find out where I had gotten it right and where I hadn't, ready to do a total re-edit wherever she indicated I was making no sense on any significant level.

We were both astonished, after our screening of the cut, by the degree to which my editing was logically and grammatically coherent at the level of phrases, sentences and larger thoughts as well. Much to my delight, she also felt that I had composed a coherent, if idiosyncratic exposition of what happens to people's outlooks when their overarching belief system is overturned, something which we both agreed was the real story in the footage. The fact that I had gotten it almost completely right without understanding any specific referents, was a confirmation of how many of the significant values in language are independent of both semantics and syntax.[33]

This experience showed me once again, something of the breadth and depth of what's carried in the rhythm and pitch of spoken language. It's the rhythmic and tonal range of our mother tongues we first get with. This, the aspect of language we learn to decode and interact with first, is also the most universal aspect of language. [34]

Although the unique rhythms and tonal patterns characteristic of any particular language make each sound so distinct, these patterns are so universally inflected according to excitement, passion, hopefulness, despair, curiosity, mischief, ambition, warning, appraisal, etc. that, to a very large degree, we have no trouble getting these more general meanings. We may not know what the people are excited about, but we know the character and even the flavor of that excitement. In fact this is the level of communication that carries the

[33] This material for this film, which I call *An Anagram*, was given to me by director/cinematographer Gary Henoch, and the on-location interviewer and translator, Slavic Studies scholar, Dr. Harlow Robinson authenticated the film's coherence. Irina Valioulina was my post-edit authenticator, translator and culture guide.

[34] Christine Kinneally in her book *The First Word* (2007) discusses this idea throughout, and in many contexts.

most certainty. When someone grimaces in pain, or laughs unselfconsciously we get as close as we can ever, to know in the first person, what they are saying.[35] Empathy is a most direct example of meaning. It has an obvious physical component. This is the level of language inflection that comes from our bodies in every sense, the level that grows directly from the physical states they communicate, where language is closest to it's biological foundations, and meanings are most universal.

29. Language and the momentum of the body:

We can also see meaning bleed across the boundaries of speech, music and gesture when musicians talk to each other during a collaborative process. A conductor might say, '...then at #43, just after la, lala, dum we hit it like this – brrrrm." and this entire remark is modified by distinct and emphatic hand and body language that carries as crucial an aspect of the referential act as his speaking and humming. Thinking of meaning in terms of vectors, one singular characteristic: *rate of acceleration* inflects meaning on many levels and at many scales. The modulation of acceleration tells us when thoughts begin, transition and end, how emotion runs through the course of an idea, and how structures evolve.

When pictures and sounds are recorded, and then played back in the course of editing a film, one notices that thought-size articulations, along with their accompanying gestures, tend to speed up in the beginning and slow down at the end, with characteristically shaped vector-sets. Even parentheticals and interrogatives have got characteristic musical relationships to corresponding main ideas and declaratives. Simple enough.

The abruptness or the melodiousness of that acceleration and deceleration will always be at play when these pieces, especially pieces of recorded speech, are arranged and rearranged. A film editor becomes very intimate with these modulations of acceleration. They are what announce the 'cut points', both in verbal and in visual material, those places at which the recorded stream of information can be separated into a *piece* or a *part*, a sound-byte, meaningful unto itself, or useful as a component in a collection of sub-meaningful pieces. They orient its parsing.

When I first look at footage that's bound to become a documentary, I absorb the material at many levels at once. On the verbal level I'm looking for the crisp delivery of ideas; and since that

[35] The qualifications to this observation are to be found in the Section 60 where I discuss Ray Birdwhistell's book, *Kinesics and Context.*

so rarely happens in raw documentary footage, in which interviewees ramble, repeat themselves, correct themselves, cough, stumble and sneeze, I mostly look for ways to eliminate gestures, words and sentences that get in the way of the clear flow of ideas.

As I do this, I reconstitute the edited material in my head to see if the required antecedents, transitional and concluding thoughts are available to recreate a smooth, coherent flow. I need to know after that initial screening that the meaning is likely to be salvageable from the about-to-be diced up material, so I can determine if the expression of any given idea will ultimately be usable. Since these signature accelerations and decelerations mark where a phrase originally came from, it's a bit of a trick to take a snip from the middle of a sentence and put it at the end of a sentence or vice versa, even if the syntax is perfect. Beginnings inflect like beginnings, elaborations have many different kinds of recognizable inflections, and endings are quite distinct in the way ideas get squeezed shut...either for the moment…or with some real finality.[36]

But, when I'm first looking at footage, more than anything else, I am looking for the opening and the closing frame of a thought; or the first and last shot of a scene, or a theme, or a whole program. I am always looking for the "*in*" point and the "*out*" point. Where it will begin and where it will end. This happens at every level of editorial judgment, from the instantaneous shaping of a single transition to the shaping of the complete work – and across all modalities – judging camera or subject movement, speech, music, etc. – the active process of sorting material into different levels of beginning middle and end-ness, also known as editing a film, especially a documentary, starts in the first screening.

The boundary at the meeting ground of semantics and syntax on the one hand, and the more musical aspects of language on the other becomes a natural and intuitive workspace for the editor. Free play across this boundary is what ultimately maintains the rhythm and flow of ideas. The degree to which beginnings and endings are easy to spot, emphatic and resounding, or soft and subtle, defines the dynamic range of a purely formal drama, and provides one context within which to evaluate the developmental material. The dynamic range of the formal drama in any footage, the sweep of energies it contains in

[36] It's worth taking the time here to note that in a talking-head interview the sound can be rearranged within the above noted constraints, but the coherence of picture flow means that one cannot cut picture with the freedom that one can cut sound. The implications of this are both profound and germane to this essay, and also logistic. 'Cut-aways' are shots the editor uses to bridge 'jump-cut' pieces of talk, that have been rearranged for greater economy or coherence.

terms of these accelerations and decelerations of tone and amplitude, determines the overall texture of the work. In the case of those poetic, structural or painterly films, films loosed even from the narrative constraints of the documentary, this dynamic range can determine the overall meaning of the work. These signal accelerations and decelerations often mark units of omnivalent reference as well. All media have characteristic accelerations and decelerations, even if they are only indexical or tonal, as in static media.

30. Syntactic universals: interval, context and repetition:

"A rose is a rose, is a rose."

When we look at meaning from a temporal and dynamic perspective, three features seem to be at play always and in all media: interval, context and repetition. Interval can describe how we segment time – the frequency of events. Context can describe the way we focus our attention and isolate events. And we often use repetition as a performative indicator of unity – what it is we are considering to be the same event. If we add our ability to recognize family resemblances, we can describe all reference. Once again, I believe it's most helpful if we regard these terms as heuristics – as temporary ways of looking at the information stream, rather than as absolute conditions.

a) interval:

The naked human sensory window onto interval is limited on the *micro* end, both by that little slice of the surrounding energy spectra we are able to perceive (e.g. electromagnetic: ultraviolet to infrared), as well as the tempo limitations of our nervous systems; and on the *macro*, by the scope of 'historical events', both specifically learned and encoded subliminally in culture. The intervals that are most important to us, from small to large within this range are represented by the spectra of the colors we can see, the sounds in our audible range, our rates of neural processing and sensory feedback, our various biorhythms, the rates at which we articulate thoughts, feelings and ideas, the body cycles of wake and sleep and of course, the developmental intervals of a human life – that arc of a single generation in history. Our attention spans constitute another important interval range, and our associative memory another.

In speech and music, interval could describe both pitch and rhythm (though musicians only use it in regards to pitch), and by extension therefore, melody and harmony as well.

With motion pictures, a basic and very fundamental interval is determined by the frame rate of the projection mechanism on the one hand and the speed with which we can process audio/visual information on the other. We can use interval as a cover-all description of the timing between our perceptual selves and the world, both on the level of neural processing and on the level of attention shift. According to these definitions we can regard interval as the measure of process, hence, when thinking of meaning in terms of vectors, as one measure of meaning.

b) context:

The word "context" lets us talk about what emerges to become significant as our attention shifts through patterns and configurations of sense data, arrangements of objects, events or occurrences etc. while parsing our experience. The *context* is how we describe that which surrounds, *as distinguished from* that which is being surrounded. As our attention shifts (and it constantly does), the surround-er becomes the surround-ed and the previously significant subject may become the context for the next significant piece of conversational business. Any object of our attention has internal relationships of similarity that allow us to call or consider it a *something*. What we were attending to before and after this something gives it a place in our experience of it. This shift of attention through familiar patterns is what we call making sense of the world,[37] and the word *context* allows us to isolate the location or moment of

[37] Oliver Sacks' "To See and Not See" (1995:124) gives us a great example of assumptions about what it takes to make sense of the world in describing patients who have their vision restored after being blind their whole lives, or for a long time: "One such patient (described by Eduard Raehlmann, in 1891), though she had had a little vision preoperatively and had frequently handled dogs, "had [when her sight was restored] no idea of how the head, legs, and ears were connected to the animal." Of such difficulties, which may seem almost incomprehensible, or absurd, to the rest of us, Valvo remarks, "The real difficulty here is that simultaneous perception of objects is an unaccustomed way to those used to sequential perception through touch." We, with a full complement of senses, live in space and time; the blind live in a world of time alone. For the blind build their worlds from sequences of impressions (tactile, auditory, olfactory), and are not capable, as sighted people are, of a simultaneous visual perception, the making of an instantaneous visual scene. Indeed, if one can no longer see in space then the idea of space becomes incomprehensible – and this even for highly intelligent people blinded relatively late in life.

significance – to define it by exclusion. Let me try to make the function of context in the creation of meaning more graphic:

If we imagine a white billboard with nothing on it but the word "BOY", even though we know what the word "boy" means, we still don't know what the billboard means. Maybe, we think this is a new advertising twist on the old Burma Shave ads by the side of the road, where the message is spelled out one word per sign, so instead of scanning a sentence with our eyes, we scan it with a car. Perhaps, swapping space for time, when we pass the BOY-billboard next week, a new word will be on it. We may in the mean time, speculate on what the billboard means, but it engenders speculation and not meaning (the vector is a loop.) So we realize that singular isolated nouns rarely mean anything (nor, interestingly enough, do isolated musical notes).

If, out of the blue, someone *says* the word "boy", we have to consider that the context of the utterance may be found anywhere in the local circumstance, very likely in the tone of voice, where all sorts of different inflections will give all sorts of different meanings. Even if the inflection is mysteriously flat, we'll make automatic assumptions or inferences from the circumstance about what the context, hence the meaning might be – if we can. The difference between the two cases, the billboard and the vocalization, tells us a little about the role of context in the success of reference. It also tells us about the special role of the frame in specifying context – and we'll get into that in a moment. Still more important, because there is no explicit frame around the vocalization, our tendency to hunt for and assign a context, hints at how vigorously we seek context, hence meaning.

Like interval, context operates at many scales. Context is crucial in understanding the instant, and also history. The first steps in making sense of the world, where our rubber meets the road, where we handle raw sensory input, is to sort the ceaselessly ongoing modulation of stimuli for similarity and difference in value, all of which can be thought of as interval data rendered significant by its context. Then we process those values by way of whatever prior experience we have of them, re-contextualizing upward. Our early creature development makes this nesting of impressions automatic. However, what in one encounter seems to be all the same stuff, might in another contain lots of significant distinctions, as the context: our needs, motivations and the communications circumstances change.

At the most fundamental level of perception, where we encounter physical and chemical stimuli, or it encounters us, where the neural pathways to the brain get stimulated by the light, sound, pressures, tastes and odors of the world, receptors that are adjacent to one

another, in general, are sensitive to opposing values, thereby automatically enhancing the distinctness of individual stimuli and our perception of contrasts, so in a sense you could say that context is hardwired into perception.[38]

A significant or meaningful relationship among similarities and differences is a pattern. If we think of our perceptual field as consisting entirely of comparison and contrast, i.e. lights that are light because there are darks, high notes, that are high because there are low notes, loud in relation to soft, etc., we get some measure of the flux in our sensory dynamic. Because of the shift of contexts caused by the passing of the moment, in some sense all experience is new experience. But in an another sense, because of our automatic mechanisms for adjusting to changes in brightness, color temperature, ambient sound levels, etc., not to mention our long-satisfied expectation of sensory coherence and continuity – to us, it's all just the same old seamless experience. Any place you pinch it off to call it *something* is a function of habit (recognition) or an act of will.

Recognition is just what it says: cognizing something again. All the way up the ladder of organization, from recognition of patterns, to patterns of patterns or configurations, and on up to objects, people, actions, sounds,[39] styles and ideas, etc. This is how we get around to saying that *our ability to sense similarity in difference holds our world together*; that the recognition or the discerning of *configurations* of sense data is at the bottom of making sense of the world. *Naming* the configurations is, from the time we learn to speak, an integral part of that process. This all goes on as we focus within a field. Shifting the focus swaps subject for context. A shift of focus is a mark of meaning; and names, the paradigm of parsing, become the main arbiter of what is a *something*.

One function of communication is to focus someone else's attention initially by setting a context, and then shifting it sequentially with shared referents. A frame is an artificial device we use to control the shift of attention and specify contextual relationships. Defined this way, chapter breaks, paragraph breaks, periods, semicolons, and commas are all frames of different scale and permeability. They control the consideration of context, therefore they control the vectors involved in the construction of reference.

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[38] Ragnar Granit's (1955) classic, *Receptors and Sensory Perception* is a wonderfully detailed and readable source.

[39] The world of sound in life and even more, in cinema, is a very special case of recognition that we'll talk about in detail later.

But our most common association with frames is pictures, not words. The question of context comes into play in a somewhat more defined fashion when we think of the shift of attention that occurs at the frame of a picture; thus the problem with asking what a picture means.

c) repetition:

Repetition is the word we use to describe the re-occurrence of events that are either functionally identical or sufficiently similar to one another that differences are indistinguishable or insignificant. We use the word to call attention to similarities and patch over differences. We use it pejoratively to describe a lack of progression. However – repetition is in many circumstances at the very bottom of all our time based media. In fact, it is the essential role of repetition in cinema which first led me to look at this heuristic trialectic of *interval, context, and repetition*. In some throbbing undercurrent kind of way, my consideration of the fundamental role of repetition in cinema provided the meditation zone wherein a temporal/dynamic perspective on meaning could grow.

Repetition allows both music and language to use a limited number of elements in an endless variety of combinations to create an apparently infinite sea of meaning. Even though the human vocal tract can make a very large range of sounds, each language uses only a few of these repeated again and again. As well, each musical system constructs its meanings from a restricted palette of tones. These elements – the played notes or tones in music and the letters or phonemes in words, combine to make larger elements, melodies, morphemes, words, phrases, sentences, tunes, rhythms, refrains and rhymes, etc. which are themselves repeated to some degree on progressively larger scales. The same is true for the written versions.

Repetition plays less of a role as the structures get larger in normal, prose discourse. However in art, repetitions in progressively larger structures carry a strong, diffuse, but fundamental burden of meaning. In fact repetition is one key to omnivalent structure in art, not to mention how absolutely and fundamentally it is operationally essential to all of cinema – but especially to traditional narrative cinema.

This is easiest to see physically with the old analog/mechanical cinema. If you hold a strip of movie film in your hands, it becomes immediately obvious how much cinema depends on repetition for its very existence: the repeated images so nearly identical, side by side, so much more the same than different; bearing, in the incremental changes of those few data points that do not repeat identically, the

latent illusion of a motion that is actualized in its passage through a machine. What's so striking when you hold a strip of film in your hands and see it in its utterly static physical nature is the precision of that repetition. (Figure 4) And the success of the illusion absolutely depends on that precision.[40]

The frame, the black area around the images, the area on the surface of the film not exposed to light in the camera and not illuminated by the light of the projector, is a kind of crossroads that is the index of that precision. Anything in the picture that changes its distance from the frame line from one picture to the next will appear to move when the strip is run through the machine. The part of the the machine of cinema – the camera, projector and the film strip that connects them – is almost always slaved to the continuum of life, where sequential pictures represent sequential moments in sequential actions.

The frame line that lies between the pictures,[41] represents that moment in time when the shutter was or will be closed, the interstice between moments. The frame line is where space turns into time and differences sift out of identities to mimic movement. The frame line is the invisible vector, the anteroom of meaning.

But it doesn't have to be that way. What if we break this linear causality and harness cinema's potential for musical circularity? What if we go against the inveterate narrative character of the image and against the structural model of the stage play? What if we again think of frames simply as cinema's smallest temporal unit of meaning, using them like tones and phonemes? What if repetition played a similar role in the articulation of meaning in cinema as it does in vocal sounds, musical tones, and alphabets?

This kind of question looms, since cinema is in it's infancy and could go anywhere. We have little idea how long either spoken language or music have taken to evolve and any fascination with these

[40] If we look at the filmstrip a little more closely, we see that this is not strictly true. The physical substrate of analog cinema consists of granules deposited in an emulsion laid on a transparent base. The color and density of those granules make up the image. Under some circumstances, this "graininess" becomes apparent as the substrate of the image, and its apparent motion has some of the quality of the motion we see in boiling water. However, since this is really the only place we ever see such fast, random movement outside of technical realms, we really don't have good descriptive language for it, and as well since it is 'noise', we filter it out unconsciously if we can.

[41] …That is, perpendicular to the edge of the filmstrip. The other part of the box that surrounds each image runs parallel to the edge.

questions makes this moment in the new-born articulation of motion pictures seem so powerful.

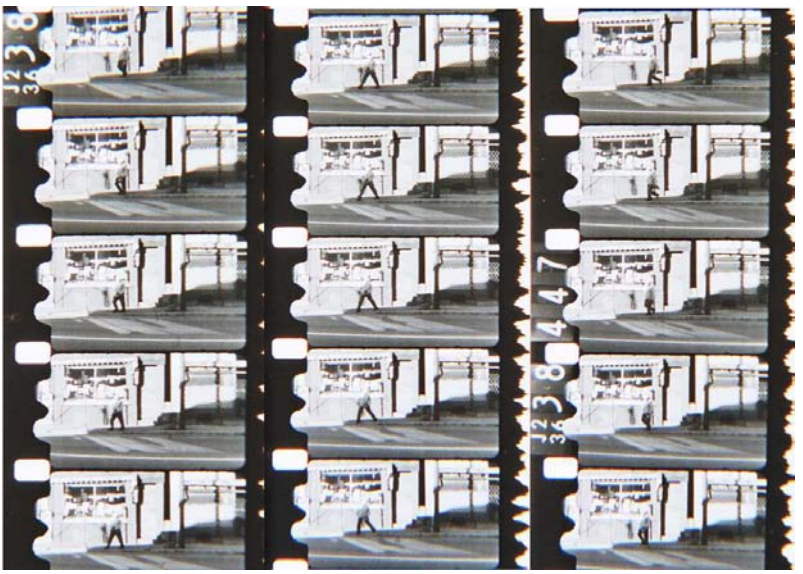

Figure 4

The wavy shape to the right of the frame is the optical soundtrack, the scalloped shape to the left is an artifact of the camera gate, and is not seen.

31. The synergy of symmetry:

We already know that the various modalities of cinema – the moving pictures, the spoken language, the ambient sound and music etc. all have an emotional synergy within traditional narrative cinema, a synergy focused on the story since narrative movies are, as we've said, driven by words. Inevitably therefore, the ineffable is organized around the effable. So then, let's pursue a bit further what we've so far only been hinting at.

What if, in our hypothetical projection of what a future cinema might be like, instead of the stage play or news story, i.e. the verbal lobe of the synergy, we follow the dominant structural models of music or painting in the way we organize information? (As in figure 3, above.) What if we explicitly appropriate the organizational values of music or abstract painting, or even poetry in the way we thought about composing work in cinema? After all, music and painting and poetry all have, for those susceptible to them, affective powers that

are very different from prose. But then again, what do we gain by rejecting the inveterate narrative of the moving picture? How much would we miss those narrations about the familiar lives of others as a line on which to hang the flow? How much would we miss the story, even if, as a result, all the abstract subtlety of painting, delicacy of poetry and the intellectual/spiritual power of music to move us were *fully* available to cinema?

Besides a novel approach, what we gain, on the level of pure poetic aspiration, is access to the near-perfect symmetry of omnivalent potential. And I would claim that omnivalence, in a multi-modal medium, can power a synergy whose resonant power increases exponentially with complexity. This is obviously however, an incredibly challenging level of synergy for any artist to attain. When, with our human yen for resemblance, we reflect on the development of structural complexity in music, painting and poetry and we project from this correspondingly early moment in the history of cinema what new levels of connectivity are still to be glimpsed, (as evolving complexities and tropes go in and out of common usage and new depths of cross-cultural resonance become the norm) we can glimpse the new levels of meaning in store for us in cinema's future.[42]

In a world of digital multi-party, multi-mode connectivity, words may continue to carry the story burden, with the picture/music flow carrying the burden of subtler affect, but we can be sure that the context will determine which will take organizational dominance.

32. Sidebar – another parallel model and another speculative future:

Cinema itself, like all produced media, is somewhere between written and spoken language, since it is fabricated on a timeline that embraces fits, starts, discontinuities and editorial overwriting like a written language, but is played back in a continuous, largely uninterrupted flow, like speech. A pictogram, for the sake of comparison is caught somewhere between a picture and a written word. Pictograms are a very different way of thinking about written language, since like pictures, they can refer directly to objects,

[42] Whether or not the term *omnivalence* gains long-term residency in the *memosphere*, the omnivalence meme itself, from Homer and Giotto to Stevens and Johns, from the music of the ancients to Phillip Glass, is one of the most enduring features and supreme goals of formal composition. See Part III for a discussion of the role of memes in speculating media futures.

qualities or actions, however, like words, they have both stipulated and suggested meanings.[43]

Written languages and cinema both create meaning by articulating complex graphic relationships. Pictograms can refer to objects, qualities, actions and ideas, both explicit and general, abstract and concrete, because all participants have learned how to read the arrangement of strokes and move directly to the things and ideas they stand for. Also context functions as effectively (or more)[44] in pictographic as in alphabetic languages. The fact that moving pictures don't have stipulated meanings in the same way that pictograms do, limits the analogy for the time being, but just because pictures don't have anything like stipulated meanings doesn't mean they can't. Remember, although stipulation is a characteristic reference function in language, what serves a similar function in cinema may look very different. For instance there are *aspects* of moving pictures that have such a universal ring to them that their meanings might as well be stipulated, e.g. in some contexts a dissolve will indicate elapsed time; a hazy image, a dreamy mood; a jittery hand-held camera, anxiety, etc.

Looking toward a far-future cinema it makes sense to ask: 1) how did stipulated meanings in language evolve anyway; and 2) what would an equivalently pervasive set of relationships look like in a motion picture meaning-scheme? Certainly, when *talking* first got going there were no academic colloquia, or Imperial Courts in which agreement on the referents for various sounds was hammered out. Although nowadays, new words and gestures pop up fast and furious, along with their pop-culture stipulated meanings, and though we have lots of ways to get meanings stipulated – remember, the only way we know if the same meaning *actually* has been stipulated, short of asking someone what they think a word means, is the continuation of seemingly successful reference. So, in the beginning of the history of

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[43] *The Chinese Written Character as a Medium for Poetry* by Ernest Fenollosa (1936) is a fascinating, but possibly confused discussion of the relationship between Chinese ideograms and nature. In 1958 George A Kennedy, crisply debunked aspects of Fenollosa's perspective in his essay *Fenollosa, Pound and the Chinese Character*. Though Kennedy feels more persuasive, and Fenollosa more eloquent, I am drawing from both of their perspectives in this section in order to abstract some generalities from ideographic language that might help us imagine the potential of motion picture writing. My goal in crossing this conceptual barrier is to be able to imagine a cinema of *motion-word* writing – only using pictures.

[44] A fascinating example: It's claimed that text messaging in China has spawned a literary form in which romance novels are being written using a 'vocabulary' of as few as seventy characters.

any particular verbal reference, it is the interaction around the *use* of the sound which contains the act of stipulation: i.e., the talk goes on or it doesn't. When and if the use of a word comes into doubt, we can ask for corroboration with a question or frown. Stipulation, like all learning, is an interactive process. When dealing with written texts, the same question is handled with a dictionary. That's what a dictionary is for.

The answer to the second question, as we will see, is yet more complex.

The simple facts that a) not everyone authors motion pictures (yet), so, except for the world of games it is hardly a real-time interactive medium, and therefore the social conditions for live-action, *in vivo* stipulations don't quite exist; b) that there is no, or not much of, a dictionary of motion pictures (how would it be organized?); plus the fact, c) that pictures really *are* so much what they are *of*, means that the process of stipulating meaning, the process of conventionalizing *precise, universal, abstract referents for pictures in their manifold aspect*, referents that are significantly distinct from what they are a picture of, seems a somewhat unlikely venture. As the medium evolves however, what has been conventionalized, as we've suggested, are editorial and directorial gestures, styles, inflections and transitions etc. – piggy-backing to an arguable degree on the universal inflections that pervade music, speech and body-gesture. However, as we'll see in Part III the conventions of video and internet gaming and the explosion of new types of, and contexts for, graphic information displays are bringing a stipulative character to the *motions* (and locations) of pictures.[45]

All this conventionalizing of information as the medium matures happens in a number of ways through the incredibly vital, trans-medial migration of ideas, a.k.a. the memosphere or cultural soup – i.e. the cumulative, reflexive impact of motion pictures on social trends, and vice versa. This effect is heightened by the speed with which current cultural idioms evolve so that in effect it is a medium having a conversation with itself and with the media around it. The checks for appropriate response, coherence and impact that allow the meanings of words to be stipulated through ongoing conversation, is happening with motion pictures in relatively slow motion as gestural idioms percolate and evolve through the public media arena.[46] The idioms of the day – those styles, looks, qualities of motion and pacing

[45] Once again, it seems to me, the Chinese are taking the lead here. One could consider the entire city of Shanghai as a motion picture venue.

[46] Witness the evolution of ritualized hand gestures in hip-hop culture.

that make up our visual *soup de jour*, all project fairly subtle and very widely accepted evocations. The longevity of any "term" in this stylistic lexicon relates, probably as it does in speech, to the relevance it has to a current cultural condition.

33. Formal references in music and cinema:

Using the stipulating power of language as a background, what can we learn from the way music makes the mind move that would apply to a hypothetical cinema that was both precise and universal in referencing what words cannot? And with music, obviously, it's not just the mind that is moved.

Repetition, as we all know, has a big place in musical form, exemplified by the theme and variation, which is the most common developmental form in all music; it's also a pretty common way for poems to move along, and you'll find that variations on internally established themes provides coherence in many powerful paintings and photographs, if you know where to look. In contrast, the main use of the theme and variation as an external structure in narrative is usually found only in episodic formats, serials, series, sitcoms etc., although occasionally narrative films like Kurosawa's *Rashomon* embody a kind of internal theme and variation structure.

"Familiarity", the paleobiologist Richard Fortey is said to have said, "breeds familiarity." The referential model for themes and their variations is self-reference: a piece of music moves along by stating a theme in the beginning and then stretching our familiarity with it by referring to it in progressively more complex and/or elliptical ways. So, we could call it a kind of stipulation after all, where the theme is the stipulated referent for the variation: i.e., the motif is the referent of the phrase, the motif or the phrase is the referent of the first variation, and on up the structural hierarchy. You might think we're stretching the definition of reference here, but remember we're characterizing meaning as a kind of movement: we're talking about how the mind gets guided through an abstract piece of work, one without the inveterate (for all that's hidden in this word) character of narrative; though you might say that we are borrowing the word *reference* to describe, in formally structured media, a kind of relationship familiar from narratives. So, in order to avoid confusion, we have to be clear about some differences and some similarities in how we use the word 'reference' in formal matters.

Whereas language is easily grounded in its references to a shared external world – one that the participants can point to, music is mostly its own world, and one that is highly subjective, often idiosyncratic in its evocative and suggestive emotional power, and very hard to point

to. But since music mostly conveys meaning through a structure in which developments refer to previously stated themes internal to the work, and is therefore largely self-referential, music and other similarly formal work is less likely to 'be about something'.

The question "What's it about?" is usually best answered: "It's about itself."[47]

Frames imply self-reference – and music, amorphous as its referents might seem, is also structured with frames that are announced by those same dynamic universals of acceleration, deceleration and pause; beginning, middle and end.

Whereas music creates themes and variations with repetitions of interval in time (beats) and interval in pitch (notes), the picture side of cinema, given the largely simultaneous read-out of the visual field, doesn't really have a pitch component. Instead of pitch it has lots of other characteristics to modulate within the inherent harmonic and contrapuntal powers of a multi stream medium. So it seems to me that cinema, fundamentally based as it is in repetition, has very rich expressive potential in the twin realms of theme and variation, and counterpoint and harmony. In music we have the quintessential expression of omnivalence in the concept of the signature key, wherein every tone depends equivalently for its valence on a signature tone. I would maintain that a purely formal cinema uses tonality or 'affective flavor' in the place of a signature key.[48]

34. The developmental leap – keeping the referent a mystery:

One of the hallmarks of the art of the past hundred years or so, has been the claim staked to the experimental method as a medium of pleasure and illumination for its own sake, where *comprehension* itself is a variable parameter. So in a formally organized film of the late twentieth century, meaning (actually, the ability to follow along with the film) might be constantly in question, the way the clearly impending resolution of a musical theme can remain in question. Self-reference allows artists to stipulate whatever they want in a musical architecture, so long as they have no qualms about letting the audience figure things out for themselves. Within its own peculiar framework, *A New Piece of Work* is expected to teach you its own language, one

[47] Formal music obviously references other music historically and culturally, but again, in a way that you would be able to characterize as a variation on a theme. Formal music that references the external world is often characterized disparagingly as 'program music'.

[48] This is tightly linked to the idea that 'meaning vectors' can be characterized by their affective flavor or capacity for emotional resonance, as well as direction, duration and velocity.

with its own syntax, semantics and inflectional style, a language you usually have to learn as you go along in the process of getting acquainted with its unique way of shifting meaning. It's a little like assembling a ladder as you climb it – heuristic thinking squared. Many people find this an uncomfortable process, are hostile to it and shun it. Some just accept it resolutely as the way the experience is meant to unfold and look for the lessons it holds. Some people actually find it a thrilling way to watch the birth of formally expressive structures, recognizing that the meaningfulness of a work may only coalesce well after the actual experience of it has ended – as was the case in my encounter with Brakhage's *Fire of Waters.* By the time one successfully follows a piece of *new* music or cinema to the end, you will only then have begun to learn to appreciate what that end means, and what that end implies. You can expect, however, to have learned a whole new mode of apprehension, en-route. And whatever else it is that you can *say* about what it is that you've learned, you're likely to be hard put to say. The satisfactions we can derive from tight, large scale, formal structures, especially brand new ones, are among the most ineffable we know. And we must become comfortable with complex, elaborate and ephemeral meanings that have no direct verbal correlates.

In order for cinema to transmit or share experiences of this degree of abstract satisfaction and develop self-referential structures like those that are natural in music, it has to leverage its graphic, pictorial power – while subordinating the stubborn, extra-referential thrust of the picture along with its implied narrative tendencies. If that were possible then the structure of a film, like the structure of a piece of music, could also progress fully and build meaning completely by developing purely formal rather than story-related motifs – each variation built on the rhythmic, melodic, conceptual and structural relationships of the *pictures* as they have been splayed across the screen; each variation testing our ability to see similarity in difference on many planes, in many dimensions – creating so many exquisite vectors of tension and subtle shifts of meaning.

With such a range of modalities (picture, sound, music and word) to modulate, self-referential structures in cinema can become extraordinarily elaborate and precise in their resonance and in their ability to reference and, indeed, to invoke the transcendent sensations and experiences of a life unglued from the quotidian. But whether musical models *dominate* this hypothetical cinema, one that aspires to the quintessence of omnivalent universality, or whether musical structures merely *contribute* to this possibility – at the very least, the

parallax in perspective, the *multipoint* parallax in perspective we gain from this trans-medial, comparative thinking expands cinema's art.

So we can congratulate ourselves on that. But what about this problem of the "inveterate narrative character of the motion picture" and the supposed propensity for its parade of make-pretend human dramas to pollute the pristine self-reference of music? What do we do to tame narrative tendencies so they become inflections of the meaning, rather than the main bearers of meaning itself, so that the elaboration of an abstract and ineffable theme is what's always the principal referent, the *what* that the piece is *about*?

35. Resemblance and resonance:

How do we do it?

We transform the manner in which *interval, context and repetition* interact in our articulation of pictures. We change the proportions, the emphasis and the expectations. But since this inveterate narrative character, this tendency to refer outside the work is so strong, we might need somewhat violent methods to disabuse that expectation. This level of intellectual, and sometimes perceptual violence is part of why experimental film (experimental art, in general) is sometimes so hard to take, so hard to get with. You have to be curious beyond words to put up with it. The rewards, besides a novel bliss, can be entirely new portals to meaning. Some we can project from the constraints and possibilities we're already aware of; but most, I'm sure, are still, from our current perspective, here at the beginning of cinematic history, well beyond our ken.

The impact of interval on perception at any level, hinges on the dual description of how fast it's coming in and how fast we handle it. As noted, some things come in so fast (ultraviolet light) or so slow (infrared light) that they are beyond our normal sensory envelope and we don't handle them at all or, only handle them subliminally, automatically or unthinkingly – that is, according to deeply established mental protocols or on an unconscious level. Some pulse a bit ahead of our recognition, some lag a bit behind.[49] We assimilate most things at different levels depending in part on how quickly they go by, and how quickly the things around them go by. Those special cultural experiences that we expect to encounter again and again, like

[49] See Dennett (1991:115-126) on the complexity of the temporal relationship between stimulus and response that's uncovered in the analysis of the color phi phenomenon by Kohlers and Grunau (1976). This will be discussed in greater detail later.

our favorite songs or stories, paintings, poems or movies, get assimilated on different levels as our familiarity with them grows.

When we are attending to those media with a normally uninterrupted flow, like film, we have a familiar, standard meaning-model: the passage of new events creates showers of more or less short, direct vectors of meaning, *along with some resonance*. When we encounter something that sits on a page to be absorbed at leisure by the eye, these meaning-vectors can be as long, as varied and as complex as we care for them to be (or, as long as we are capable of making them with the in-filling of our imaginations.) *Re-experiencing* creates yet another kind of vector with the potential for a deeper resonance. Re-experiencing, after-all, involves a healthy dose of self-reference.

As we begin intensive cross-media comparisons of the workings of these three terms: *interval, context and repetition*, we discover how plastic they are; three heuristics with widely overlapping turf. So it's a good idea to keep reminding ourselves that they are just a way of talking about something that's alive and squirming, using terms that are limited and discreet.

However, if we want to compare formal structures in cinema to those in music, we immediately bump into one significant limitation of cinema's articulation of interval: if we think of one frame of film as the equivalent unit to the single note in music, we immediately see that increments in interval are limited by the 24 image per second fixed, standard projection speed.[50]

Nonetheless, if we think of each cut as a beat, we can easily relate the idea of rhythms for the ear to rhythms for the eye. However, when thinking of a note as equivalent to a single frame, patterns of organization comfortable in music may be very difficult to conceive in cinema, and even more, to experience. Learning to become comfortable with ultra fast cutting requires a kind of physiological openness (in fact, a kind of ocular relaxation) that's equivalent to the intellectual openness (signification relaxation) required to appreciate inchoate meaning forms.

Pitch, has, as we said, no direct correlate in cinema. But, just as the meaning, and in fact the very *way we perceive* any tone, is utterly dependent on the surrounding tones, the same goes for a frame in a movie. Proximal context is a central determinant in both media for perception as well as meaning. And since the referential possibilities of pictures are wider and more varied than those of tones, in cinema

[50] Or, a 16/18 frame per second standard – if a projector with a silent speed setting is available; or 30 fps. for video.

the impact on potential meaning of any variable we consider in place of pitch is even more dependent on context. Context in cinema can consist of so many more things, and can operate on so many more referential levels than in music. With the articulation of pictures the articulation of space itself can be a musical motif, as in the three of Michael Snow's films we mentioned or *Serene Velocity* (1970) by Ernie Gehr, or Saul Levine's *Notes of An Early Fall* (1976), among others.[51]

Since a one-to-one frame-to-note correlation may be so difficult for many people to imagine or experience, before we discuss image articulation at a rate where one frame equals a 32d note (played moderato), for instance, and in which two identical frames would equal a 16th note etc. – a rate of articulation of individual images which is close to that of phonemes in moderately paced speech, we need to look into how interval impacts the processing side of the equation a little more carefully. As we pointed out earlier, things get processed on different levels at least partly depending on how long we are given to process them.

To review: high frequency variations in sound are heard as changes in pitch, variations at a much lower frequency are heard as changes in cadenced, beat, or rhythm. There is one very unusual and utterly unique realm of articulation in cinema that straddles the distinction between pitch and rhythm in the timing of pulses:

36. The subliminal pull of the flicker:

One could think of frames of different colors as analogous to notes of different pitch, and texture as analogous to timbre, but in the end these are pale and limiting analogies. Cinema however, can induce a far more potent (though at this point crude and limited) equivalence between the sensation of pitch and the sensation of color. It does this by throwing aspects of our neural processing that are otherwise unavailable to consciousness, right into our faces; and in cinema's capacity to do this, there lies incredible, nearly untapped meaning-potential:

Neural processing of images happens at a rate that's not all that ridiculously fast,[52] hence the twin illusions of continuity and motion in

[51] Including, for that matter, many of my own films. *The Ogre* (1970), *The Chinese Typewriter* (1983), *The Cubist in Mexico* (1984) and *Endless* (1990), are particularly notable in this regard.

[52] The basic cycle time of a neuron is approximately 10 milliseconds, against 42 milliseconds for a movie frame, and though it is difficult to measure, approximately 200 milliseconds is required for complex image recognition.

cinema, both of which depend on the speed of image articulation of the machine beating our eyes and brains to the punch. If one toys with this interval, tuning pulses of light and dark so as to create phase relationships with the pulse of our own neural processing, we can induce and modulate color/space hallucinations; as witnessed during the strobe-light eating world of the hallucination-hungry 1960's and 70's.

These hallucinations can be actively modulated. Tony Conrad, an extreme film experimentalist discovered with his film *The Flicker* (1966), that he could modulate both the color and apparent spatial location of these hallucinations by tuning both interval, and the change in interval (acceleration/deceleration) of very short (one to six or seven frame – or roughly 42 to 280 millisecond) pulses of clear frames isolated by variable numbers of black frames.

The idea though crude, is powerful; and is also a good point of departure for considering shorter than normal intervals for the articulation of pictures in cinema. The one, two, three or four frame alternations of clear and black that Conrad used, trigger simple neurological effects (including potential epileptic seizures – so that the film has a warning at the beginning stating that epileptics should leave the theater before it commences.) But what other levels of information can be encoded at this speed? Articulating pictures so fast that they become fundamental units of a speech-speed referential system steered by the repetitive pulse of a musical architecture, all the while modulating light intensity with a velocity that toys with the envelope, is crazy.

Or is it? After all, wouldn't this ultra fast cutting, along with the musically or phonemically repetitive use of images help to shake pictures loose from their primary reliance on external-narrative reference?

Beneath it all – and the importance of this fact will forever be underestimated – whether the *cutting* is fast or slow, the subliminal flicker built into the experience of analog cinema by the 72 pulse per second constant of the movie projector, grips our attention below the threshold of awareness, but grips it none the less.[53]

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http://www.nature.com/nature/journal/v381/n6582/abs/381520a0.html and http://newton.bme.columbia.edu/publications/GersonParraSajdaNI05.pdf

[53] My own informal experiments in the early 1970's with slide projectors masked by cinema-style variable speed shutters demonstrated this.

37. Aural and visual cadence:

However, before we get into the particulars of ultra-fast, phoneme-speed cutting, let's deal with a more familiar case: pictures articulated 3 or more times longer, at the rate of morphemes or words: Here we're in the familiar idiom of the very hot montage, or the quick-cut music video; forms in which interval, context and repetition at the structural level all play pretty equivalent roles in shaping the flow of thought, via parallel, distinct streams of information.

As we've mentioned, with four simultaneous streams of information (more, if you add graphics or printed words or even other pictures superimposed) the possibilities for the articulation of form and structure open up with the up-till-now musically-bound concepts of synchrony, harmony, counterpoint, cannon, fugue and all those other design aspects of multi streaming information that music has evolved over thousands of years. And, if a filmmaker is thinking on all the levels that the polyvalent expressions of picture and sound can provide, then the idea of a cadence becomes all the more important for bringing order to the many different sorts and flavors and modalities of information flying in from all over, each with the peculiar referential tendencies of its modality, gathering for their moment together on the screen. So, in a cinema where the motive power of the narrative is demoted, as it is in formal music, rhythm becomes the foremost organizing element.[54] In this kind of cinema, the idea of *vector-cadence* becomes a valuable expressive tool for the filmmaker or analytic tool for the critic. If cadence describes the timing of perceptual events, vector-cadence describes the interplay of intervals involved in making various kinds of reference. The importance of the concept of vector-cadence will become clear when we get around to discussing the formal interplay between omnivalence and repetition in detail.

Let's look at montage as the best current example of cinema's potential for developing a synergistic relationship with music. Whereas the pictures in a typical narrative film are arranged to serve prose, and the articulation of pictures in a music video is in the service of the music, the pictures in a montage, on the other hand, are organized with close attention to both their pictorial and their musical values, and with rarely a care for their verbal or narrative coherence.

Abstract painting gives us still another vantage point for understanding the integration of musical and pictorial values. In a

[54] The cadences in jazz and blues often self-consciously imitate the cadences of speech. What's interesting is that this imitation strips out the narrative, leaving only the affect.

representational painting or photograph, pictorial values (palette, intensity, line quality, etc.) are more like modifiers, they set a tone or mood, add relaxation or urgency; they become adjectival or adverbial. In an abstract painting however, the pictorial values – the *look* of the picture – are themselves the subject of the painting. When pictorial values are the subject of a painting, or when they vie strongly for dominance with representation, or even when they play levels of representational recognition against abstract form, (as with deKooning's nudes and landscapes), in these cases throwing motion into the mix has a totally different impact than with representational images.

If pictures have an inveterately narrative character, motion intensifies the narrative implication. Motion within an abstract field however, has a much more complex set of inputs. Since there really is no tradition of *motion qua motion* as an abstract signifier, the phenomenon of signifying via abstract[55] qualities of motion is rare in cinema.[56] But still, pictorial values are what cinema can modulate instead of musical pitch. And under the heuristic of our overarching metaphor: modulation is meaningful.

In an abstract painting the motion of the eye, the way we shift our attention, the way we parse the painting, is a function of the way the paint sits on the surface. It is not driven by a referent on the other side of the canvas. You might say that the way we move our eyes here and there around the painting, the ways our considerations of it shift, the conversation we have with it, and the rhythms that it sets up within us, are what the painting means.

Considering a pictorially abstract cinema, we should note that adding motion to this mix has the serious danger of trivializing the wonderfully deep and meditative conversations a great abstract painting has to offer, hence demanding that the quality of the motion be as considered as the quality of any other line.

But then again film is not painting. Whatever may be the tractor-like pull of the subliminal flicker on our attention, transitory light against a movie screen will never have the same sumptuous, contemplative and self-referential pleasures of paint upon a surface as seen in a light that feels natural and in a temporal relationship that's under the viewer's control. Cinema's focusing of our consciousness

[55] When the quality of a motion is gestural, or imitative of the body posture component of speech, I think of it as being essentially narrative. What constitutes narrative as distinct from abstract functions in gesture or body language is another topic (see section 58 of this essay).

[56] One might say that Stan Brakhage's entire life's work has been an exploration of this idea.

on brightly shadowed shapes in a dark room simultaneously trivializes and exaggerates the effect of the sinuous articulation of light across a surface. When handled with the greatest sensitivity however, motion can bring an equivalent or surpassing sensuousness, to as deeply meditative a conversation, as does its older sister, painting.

If we examine the difference between montages that are articulated quickly and those that are articulated slowly – in terms of, where, how and how deeply they transport us, we'll see again that thinking about meaning simply as referential movement is truly a clear solvent, one that lets us draw an equivalence among all sorts of input, input that hits us at all sorts of levels.

A good way to lay out some of the fundamental values and basic terms that describe how our minds move through a sequence of non-story related images is to look at a very slow montage, one that moves along in a leisurely fashion and in which one is encouraged to regard each shot and each *passage* with calm reflection. A montage that is so thoroughly considered that the most minute motions within every shot respond to the tonal values and evocations of light within that shot, and in which that same level of consideration carries *from* shot *to* shot – can set up a resonance that slowly carries, amplifies and deepens; a resonance of resemblances across modes. We'll describe resonance and its role more fully in a bit.

38. The frame of the experience:

There is an important preamble to this topic. Putting together a montage can be as easy as whipping up a picture salad, *or it can take a great, great deal of contemplation*. The more attentive one is to nuance in the juxtaposition of moving pictures, the richer and deeper and more resonant are the possibilities for communication. There are, in this regard, great differences between cinema and television. One is that in film the intermittence in the projection is blended and dissolved in the phosphors of the eye, so to speak, whereas in television that phase of the illusion happens on the phosphors of a screen. Tony Conrad's film wouldn't work the same way on TV. The regular, pulsing undercurrent of film's intermittence, which we actually see without seeing that we see it, gives cinema an underpinning in rhythm, as we've indicated, that is quite different from TV.

Also, and far more important, the thickness of the frame around the cinema experience, the degree to which we embed and invest ourselves before the experience begins, and the degree to which we expect no interruptions in a continuous contemplation, is critically important in creating and sustaining deep, rich and complex

statements – statements articulated through the effects of formal structure on purely pictorial, kinetic and poetic expression. Television is usually consumed as an interruptible medium, one in which montage is often more a style of life than a considered methodology. Cinema, especially an abstract cinema, has to be a more focused experience, both in its production and in its reception. After all, motion that refers to *itself* for meaning must be attended to with great focus and delicacy.

Nathaniel Dorsky's films are singular and predictable in their ability to guide the mind steadily upward and outward on a very precise path – by juxtaposing simple, silent, and quietly moving images of things he happens to see in the world around him. His montage style appears slow; that is, there usually are many, many frames between cuts. Nonetheless they command the level of attention of much more rapid transitions – their vector-cadence is richly synchronous. But still, this is truly a cinema structured simply and only out of shots and cuts. Its power has to do with the elevation of consciousness that he initiates with every cut and that is carefully modulated with every subsequent shot. Each of his images radiates a delicacy and attention to a quiet elegance in the world – either the world that was photographed, or the world on the screen; and often both. He gives us precisely considered spans of time to settle in with each image, and when there is a cut to another image, we find that we have been so absorbed in the *sense* of the preceding image, that we are transformed on some level that is both deep and sublime, in the light of the new image. The transition itself embodies an observation with a weight equivalent to the shot before it and appropriate for the shot after. To whatever degree his images have inherent narrative implications, they are considered on the same plane of abstraction and mental consideration as their style of movement and reflection of light: their revelation is of the nature of *story* through the nature of *image*. It's a consideration he constantly verifies for us by how long he gives us to consider each image in the light of the image before and in the implications of the cut. A great deal of the meaning in his films resides in the modulation and balance of power between the world as photographed and the world as projected, and whereas you couldn't characterize the vector-cadence as fast, it contains such a rich sense of potential that the desire for re-viewing accompanies each viewing.

BUT, and here is the catch: his degree of thoughtfulness is only available to us in the extremely restricted, protected and controlled circumstances of a theater or private screening zone; circumstances which seem more and more endangered. When one's attention is allowed the luxury of attending to the greatest of subtleties in the

values of light and rhythm, then the most minor of interruptions can destroy the multimodal movement of mind responsible for the pleasures of these films. The experience is as fragile as it is complex.

If, for example, in one of his films, we watch light moving on the surface of water for the time accorded by its complexity of rhythm and variation, followed by an image of a man lifting a spoon to his lips behind reflected waves of traffic on a cafe window, it is the elements of pictorial harmony and rhythmic counterpoint that flow across the cut and keep the mind moving in a precise and certain direction, a direction proofed and reinforced by each new shot and cut; each event elevating us enough to read what follows. We are rewarded in our perceptions by the mutual respect that grows between our receptive selves and the arranging mind of the filmmaker, each decision leading us toward the simple, profound, yet abstract recognitions of which the film is comprised.

A cinema of contemplation, or devotion as Dorsky calls it, requires a contemplative mindset, and a contemplative environment. Though cinema is rarely thought of as a contemplative art, if given the space and the accord, its potential is nearly untapped.

But on the other hand, these self-same formal/pictorial considerations that activate and guide us as we move through the precisely simmered intensity of Dorsky's expressions, are also at work in the much more rapidly articulated montages that function successfully out in the clickety-clack of the world, albeit usually at more trivial levels.

Why only usually? You'd think triviality would be endemic in the quick-cut montage.

A montage that's assembled relatively quickly by an editor through straightforward gut instinct and experience with the kinetic flow of moving pictures, is organized and constrained by the same abstract qualities of rhythm, motion, light, color, texture and depth that play across the screen and across the cuts in Dorsky's films. So there is a correlation between the nature of the considerations that went into each cut and the nature of the considerations they were designed to impart. If the considerations happen to be deeply contemplative where vectors of reference radiate softly in all directions and the vector-cadence is extremely finely measured, a thoroughly darkened and intrusion-free situation is necessary. Outside the safe harbor of a contemplative cinema, the vectors need to be shorter, faster, straighter, narrower, and need to resonate on a very different level.

For a montage that's at the beginning or end of a typical film drama or TV show, profundity of resonance is rarely as big an issue as

popcorn and sodas or exit strategies. And for anything on TV, it seems to me that the walls are way too thin for the resonance of formal values to reach very far.

In fact, clicker-driven TV demands its very own approach to editing sequences, scenes or montages. So, before we can begin to approach the question of what levels of meaning we can articulate in any medium, we have to take note of whether the frame around the entire experience is opaque and impervious, or practically transparent. Quick cutting would seem to have the inherent attention grabbing potential for lively TV viewing, and a concomitant lack of intellectual or spiritual depth as well.

Maybe so, maybe not.

What something can communicate is limited by the depth of attention we can accord it. This isn't as pessimistic at it might sound at first. In fact it's at the root of the idea of interactive cinema. Films of Dorsky's ilk are interactive on a spiritual and cerebral level, rather than on the level of the action/response we now more commonly associate with the term.

So, although we can see that rapid cutting has great appeal in a digital world where the frame around the screen is negligible, and the image is designed to interact with life on the loose, it's harder to see that ultra-fast cutting also has the possibility of reaching as deeply into a zone of contemplation as does the apparently relaxed pace of Dorsky's films.

But before we discuss the outrageous potential of articulating images of one to four frames in duration, we need to shift gears, from the analysis of the stimulus, to the analysis of the handling side of it; to shift from describing the role of the frame, note, sound, shot, word, motif, sentence, phrase, sequence etc. to describing the idea, and its role in talking about resonance.

An idea can be found in a word, a picture, a motive, a gesture, a sequence, a whole work or a whole life, or even *potentially* found in any of the above, and more.[57] That's because *idea* is one of the main words we use to point at that which goes on in the ante moment of meaning; what it is that goes on in that barely describable moment during which we transition from what we sense, to what we can express; what it is that lives where sentences hide before they roll out of our mouths. The ante-moment of meaning, sometimes so small that

[57] It's so wonderful to have a word like *idea*, because everybody uses it, in every field of human endeavor to parse large and small, more or less equivalently and at will. The word *idea* lets us either march or graze through an analysis of life. It has the plasticity to capture experience in a way that no other analytic term can approach.

we have to talk, write, draw, or hum out our ideas so that we can understand them ourselves; so vast it sometimes seems to contain our whole lives and beings.

39. Resonance among frames:

The metaphor of a temporal antechamber of meaning as the residence of *ideas*, beckons us back to *resonance*, a term especially useful in the consideration of synergy. Resonance, which describes the amplification of effect that occurs when energies get into phase, is the battery pack of synergy, if you will. Resonance can describe a property of either the stimulus or the response. A literally resonant stimulus might be a musical tone with many harmonics or a moiré pattern in a television image. Or resonance might occur somewhere between stimulus and response – *in the process*, as we see in Conrad's *The Flicker* or Ken Jacob's *The Nervous System*, which we'll discuss in a bit.

Or, in a more metaphorical use it can describe a very important property of ideas. *Resonance*, which in music describes what happens when the intervals of tones interact in a way that results in more than the sum of their parts; and which, in ideas, also describes the sensation of *something more*, the third thought, something that continues beyond the impulse, and either echoes briefly and fleetingly like the implications of a rich metaphor or the after effects of a good joke; or echoes long and deep like the implications of great truths, perspectives or paradigms. These last three reflect how long and wide the ante-moment can be. The longer an idea resonates throughout our lives, the more complex and magnificent the resonance may become. It provides a carrier wave on which other movements of the mind piggyback; it gives both depth and complexion to the *idea*. Resonance can have the quality of a verb, an adverb or even sometimes, a noun, or shift among them as motifs are thrown about in the arms of variation.

Resonance, besides being the battery pack for synergy, runs with ambiguity and ellipsis on the playground of art. In art, resonance and ambiguity together are sometimes synergistic, sometimes not. We can think about that and the role of ellipsis, after we've explored ultra-quick cutting for a bit, and that consideration will then lead us into another, and really more obvious way of keeping the story from pinning our feet to the earth.

If we literally equate the frame with the single note or letter, or phoneme, and we imagine radical shifts in content at rates of up to 24 times per second, then we wind up changing pictures too quickly to consciously grasp much beyond their most dominant graphic traits:

brightness, contrast and maybe a bit of color or shape, along with perhaps the most general impressions of content in one out of many images.[58]

So why articulate single frames? After all, apart from providing a lot of variation, it can be, as we have noted, very hard on the eyes.

For starters, thinking of cinema on the level where its minimal units are equivalent to the minimal units of our other major media, gives us new ways to think about both content and form, and to understand the ways that pictures are unique in how we absorb them. Pictures, after all, articulate *space* (on the screen) and the *representation of space*, (in our minds, so to speak) and their elements are absorbed in some ways simultaneously and in some ways linearly.

Let's go back to the absolutely simplest case of extended, ultra fast cutting: Tony Conrad's alternation of clear and black frames in *The Flicker*. The color hallucinations are a perfect example of phenomenal resonance – resonance at the absolute boundary of the physical and the subjective experience. This is a resonance of the nervous system, and one we can put into words: "Oh wow, it's blue now, and now it's green going to greenish yellow – and the color patch is floating toward me!"

But these hallucinated color fields are barely reminiscent of our normal experience of a blue or a green. They are, in fact, a far more pure experience; pure because it is new, unbidden, unlearned, and empty of content in some more fundamental way. The objectless-ness of these hallucinations is accentuated by the fact that they have no edges – they are the experience of pure color in an unreal and unstable space. Whether or not you find it enjoyable or even tolerable, pretty much everyone reports similar hallucinations during their experience of *The Flicker*. Whether they have the "same" experiences or have them synchronously or not is another set of questions.

In the way Conrad used the intervals of pure light and dark as a resonant chamber for something that is pre-spatiotemporal, Ken Jacobs has created another, even more telling exploration of this fringe zone of consciousness – also using cinema as a direct stimulus of phase relationships within the nervous system. In his long series of meta-cinematic works, called aptly enough, *The Nervous System* (1994 and on) he has devised a method that lets us experience the

[58] There are to many variables to be able to strictly quantify this.

distance between our eyes as a resonant chamber for the apprehension of depth.[59]

Jacobs has been mining the subtle and ephemeral effects of binocular vision in many ways, and for many years. *The Nervous System* takes off on his earlier work in 3D shadow play as well as the work of another New York artist of the time, Alfonse Schilling, who was also long fascinated with binocular vision. Schilling's brilliant, simple realization was that persistence of vision plus the phi phenomenon could give us the illusion of depth besides giving us the illusion of motion.

To do this he made a unique stereoscopic slide projector to project images he took with a standard stereo camera.[60] However, instead of coding the images by polarity, with polarizing filters over the lenses and over our eyes to separate out and recombine the depth information, he put a motor between the two lenses with a two blade shutter attached.

First the projector is turned on, focused, and aimed so that the images coincide as much as possible. The parallax between the two lenses from the stereo camera shows up as the doubling or blurring of foreground detail. When the motor is started, very slowly at first, we see the images flicking back and forth, looking for all the world as if we were jumping between two vantage points. When the shutter reaches a critical speed however, a credible illusion of depth slips into the ante-moment thru a side door and we rather abruptly see a 3D image, one with a comparable sense of depth to what our two eyes would see, were they the same distance apart as the camera lenses.

Jacobs added motion to the images by placing two step-frame movie projectors side by side, each containing a print of the same film. Either or both of the projectors can be advanced one, or many frames at a time. Between them he mounts the two bladed shutter with the variable speed motor that allows him to modulate a couple of extra-dimensional illusions at once. When frame x from the left projector and right projector are superimposed, we get a variable rate of flicker induced by speed changes of the shutter revolving between the projectors. When the left projector has frame x in the gate and the right projector has frame x+1, the articulation of the shutter between the projectors produces the illusion of oscillating motion. This transposition of stimuli lifts the viewer into quite a unique and

[59] See http://globetrotter.berkeley.edu/people/Jacobs/jacobs-con3.html for an interview with Jacobs. The aesthetic expressed in the interview is very typical of the tribe of people who use cinema mainly as a tool for phenomenological explorations.

[60] He also, I believe, used two cameras mounted side by side that were some (variable) distance apart and precisely aimed at the same subject.

extraordinary sense of space, one that carries with it an accommodatingly indeterminate sense of time. Both Shilling's and Jacob's works are designed for live projection, adding an interactive and improvisational element.

What these two examples indicate is that image articulation or inflection at specific rates toys with the boundaries among hallucination, illusion and perception, on a continuum from the not, through the *not quite* to the definite, the *quite*. What might bring this same high-speed articulation just a notch closer to the quite side of things, where, in the world of pictured people and objects, it is the *ineffable* radiance of depiction, rather than the narrative radiance of depiction that comes into play?

In the 1950's and 60's Gregory Markopoulos took a different, somewhat more tentative, but very seductive approach to adding narrative content to subliminal intervals. He would pack some cuts between normal length shots with single frames taken from earlier scenes, to create a slight, subliminal echo (a déjà vu-ishness, if you will) resonating with some aspect of our recognition. Sometimes he would pack the cuts with a frame or two from a much later scene, as a way of creating a subliminal sense of anticipation or reverse déjà *vu*. Often the cuts were packed with more than one frame, from more than one distant scene. He does it with a deft intentionality so that the rhythm derived from the graphic contrasts adds its musicality to the lyric.

The films themselves were way more lyrical than narrative, and long ago when I first saw them and was struck both by the technique and by its effect, I found myself reflecting as much on my experience of them as past events, as I experienced them in the moment.[61] There are, I believe, both conscious and unconscious modulations that go on between the immediate absorption and the retrospective appreciation of this, or any, work. The cumulative effect of these modulations is to prepare us for yet more extreme cognitive leaps.

In the late '60's & early 70's Saul Levine extensively explored yet other strategies using ultra-fast cutting to strip the narrative from an image, replacing it with yet another, new kind of spatial illusion. In his pirate masterpiece *The Big Stick/An Old Reel* (1967-73), he crafted a stunning, musical structure by inter cutting, at machine gun speed, loops from several 8 mm prints of Charlie Chaplin's "Easy Street" and " In The Park". (Figure 5)

[61] Markopoulos withdrew his films from circulation shortly after I saw them and for many years they were unavailable. The films I (dimly) remember seeing were: *Twice a Man* (1964), *Ming Green* (1966) and *The Illiac Passion* (1968)

There was no digital weave in the production of this work. He meticulously spliced the 8 mm prints by hand with an extremely primitive cement splicer that left the line of every splice (sometimes one for every frame or two) visible on the screen. Needless to say the incessantly recurring shadow of the splice itself, the overlapping pieces of image-bearing plastic melted together by the resinous cement, became as much of an actor as Chaplin. At that speed, cuts sometimes occurring every 1/8 of a second or less, the *surface* of the screen becomes the fulcrum of a visual illusion-cube, allowing Levine to create, with very crafty graphic and spatial juxtapositions, the apprehension of images rotating in an illusory 3rd dimension – longitudinally around the splice. But at *this* forge of *mis-en-scene*, at this not so metaphorical forge[62] he was working out a larger set of ideas with interval – ideas about perceived motion, about iconography, about formal structures; along with still other much darker and characteristically political thoughts.

The first major passage in "The Big Stick" is a slow, very persistent and 'repetitive', but also very ballet-like inter-cutting of many loops of the same two scenes in which Chaplin encounters first

Figure 5
Film strips from *The Big Stick/An Old Reel*

[62] I can recall, as a consistent witness to the making of this film, the

a cop with a billy-club and then a madman with a knife in a park. This is a primal case of the structural and formal use of repetition. Before this scene, in the true tradition of didactic exploration, i.e. teaching us how to read the work that follows, he inter-cuts glimpses of images filmed off a TV of police beating demonstrators at the famous 1968 Democratic Convention riots in Chicago, obscured by what looks like paint on the surface of the film. He is going to tell us a story about 'police beatings', but it will be told in his inimitable style, and on the *surface* of the screen. The first time we see these scenes where Chaplin stumbles into a cop, turns on his heels trying to get away, then runs immediately into the arms of the madman with the up-raised blade, we read a straightforward little bit of the story. When that short scene is repeated immediately, our minds no longer move with the already grokked story, but get derailed to other aspects of the shot: the rhythmic interplay of the gestures, the turgid, grainy gray of the image; and even more striking, as the repetitions go on, Levine subtly changes the length of the loop so that it cuts in and out at slightly different points in the gestures of the three characters, creating different captive motions and rhythms; a difference Levine plays on here with these near catatonic loops and also later in the film, as he begins to throw more and quicker images into the stew. The effect of this attention to the splice as a recurrent, sliding beat is to subsume the picture's inveterate narrative in a musical motif with variations.

So, one of the things he's done with these looped passages is to let us know that he's using a musical model of meaning and that at least some of the values he is articulating are musical values.[63] In *The Big Stick* he also toys with yet another narrative-busting aspect of repetition that he developed more fully later, and that we'll discuss shortly – the chant/hypnotic aspect.

As the pace of these loops increases and other images enter the musical blend, the edit cues that in the beginning picked up from the rhythms of Chaplin's' movements, evolve into progressively more complex rhythms wherein the splice, rather than the action, drives the movement, the form and the mind. As many more very rapidly cut scenes and characters from Chaplin films enter the mix– different cops, another madman, a drug addict, a preacher, some hatted ladies and others, cadence clearly takes over as the driving force. When the cutting gets really fast, with a handful of scenes repeating at a rate of

[63] At the time, Saul Levine was also a self-conscious dialectical materialist, as one might guess from his inclusion of the physical splice in the image-field, and it's probably fair to say that any purely formal analysis of his films that fails to recognize how persistent a perspective this is, is missing a huge dimension of his work.

only a few frames per scene, the illusion and the implications of *motion* are being juggled with the illusion and the implications *of an intricately synthesized space*: The cop swings his billy, and hits Chaplin over the head – which, in only a fragment of a second, drives him down through a manhole in the street, through a visible splice and into a chair in another room, where a bully punches him, propelling him through a splice/wall into yet another chair in another room, then through another splice into still a third room, each with its own set of characters, until a set of cyclical actions is set up and variations on this moment-long cycle begin; each one a variation on a theme whose complexity grows cycle by cycle with the introduction of new actions in new spaces.

In Levine's hands, film becomes a *plastic* medium on several levels at once and Chaplin is transposed from place to place and from one situation to another by the sheer cadence of the cut. In a weirdly Chaplinesque kind of way, we care naught about any story. After a while it's the resonance between the single, spliced frame and any of the spaces Chaplin ricochets among, that dominates the film. Chaplain is not caught in the simple mechanism of the clock in *Modern Times*, but in Levine's film, he's caught in the even more complex mayhem that may operate between the machine of cinema and the 'machine' of spatio-temporal perception.

40. Ancient history – the medium as the model:

The *Maltese cross movement* is the name of the mechanical device that was at the heart of the cinema machine in its infancy. (Figure 6) The shape of the Maltese cross, as it engaged and disengaged with the rectangular perforations on the edge of the film, translated the rotary motion of the camera or projector motor into the intermittent motion at the heart of the cinematic illusion and coordinated that intermittent motion with the continuously driven shutter. This is the mechanism that originally dissected the continuity of vision in the camera and also re-assembled it in the projector.

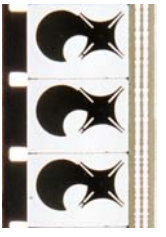

Figure 6
A Cut-out representation of the Maltese Cross on the right and the projector shutter o n the left.

The Maltese cross movement precisely controlled the life of each frame – that less than 1/24th of a second of fame it gets as it goes from its own anteroom, the space reserved for it, where it hangs, virgin and unexposed, before getting pulled into the camera gate for exposure to the light focused on it through the lens; or, after the film has been exposed and processed, where it hangs with an upside down image (the lens inverts the image), waiting stationary to be pulled into the projector's gate and illuminated by the lamp during that instant while the continuously whirling shutter is closed. The Maltese cross moves the image and then stops it precisely in place before the opening in the shutter comes around. Light from the lamp propels the static shadow of each frame out into the world and onto the screen; and then once again, the MCM whisks it away in less than the blink of an eye, to be replaced by the next image.

Seamless image swapping – this is the heart of the machine, the heart of the illusion and the companion to the frame line in pivoting perception into another dimension. If, when we think about the relatively simple illusions of cinema, we remember how many complex interactions have to take place within our nervous systems for the *world* to simply appear to us, we can see how cinema can give us a meta-perch from which to think about, evaluate, and even critique the more complex illusions of reality. Since the Maltese cross movement proved the efficacy, the power and the ease of quick motion to create illusions for us slow creatures, at least one filmmaker had to warn us explicitly to be careful about the existential credit we give the rest of experience.

In 1967 A .K. Dewdney, the Canadian artist (and later computer scientist, ecologist and regular contributor to Scientific American magazine) made a short film called *The Maltese Cross Movement* (1967). As well as being a witty exploration of the nature of this illusion, the film is also a didactic exploration that tells a story in its own very peculiar way. Where Levine traded the image's *narrative* potential for a *musical and extra-spatial* potential in *The Big Stick*, Dewdney flips the axis of reference of the pictures he uses from representation to stipulation, through the mechanism of the rebus. Let me explain:

In the opening of *The Maltese Cross Movement*, Dewdney, like Levine, presents a conceit through which the rest of the film is to be interpreted. But instead of setting up musicality as a paradigm for interpretation, Dewdney sets up *illustration* by showing a cut out figure of the Maltese cross movement itself, black against white, being jerkily animated to exaggerate the *simulated* character of its own movement on the screen. This is accompanied by music

reminiscent of an organ grinder. Then the image on the screen itself begins to be interrupted by an increasing frequency of black frames, until it strobes in front of our eyes, deconstructing its own continuity into intermittence. As the cut out of the mechanism disappears, we hear the sound of a man laughing, as if to say, "The joke's on you!", but the laugh itself is interrupted along with the image as the letters of the title M*A*L*T*E*S*E etc. disappear, letter by letter, like evaporating fairy dust. (Figure 7) Dewdney then proceeds to teach us a regime in which he equates phonemes with images, by way of the rebus. In the first scene after the title, a little girl facing the camera asks: "Are you ready?" The screen goes black, then a nose in profile appears just long enough for a voice to say: "No," clipping off the 'se' by not leaving enough frames of the image for the whole word to be said, thereby giving us a most basic example of his scheme – a primer in rebus reading. Following this, in a very short time, he shows us how to read ever more complex combinations of *pictures for sounds*, accompanied by a voice saying the word we are meant to stipulate for the image – using just the number of frames required to speak the necessary phonemes of the name of the object in the image, e.g. the word 'at' is illustrated by showing a very short burst of a graphic of an atom. In this scheme, some polysyllabic words require short bursts of five or six separate images to articulate; and so our training in the regime goes on.

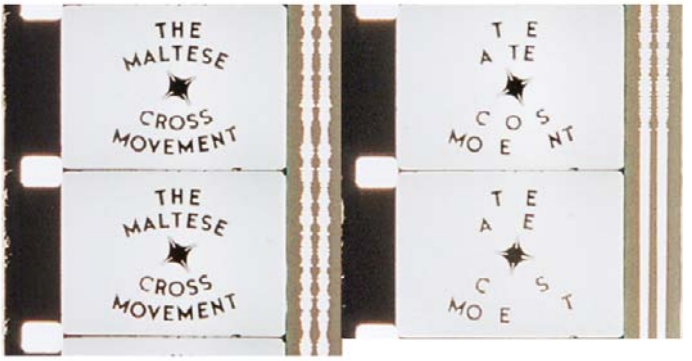

Figure 7

In these passages he continues to build not only the vocabulary of the rebus-cinema, picture by picture, but also teaches us a mode of translation so we can later interpret new images on our own.

He intersperses these didactic passages with a series of touching, mysterious and dreamlike scenes of a boy in the boughs of a tree with an open book in his lap approached by a slightly older girl in a simple white chemise and an inquiring expression on her face. Toward the end of the film, we're drawn into this surreal mélange both by the tightly stipulated picture/phonemes he teaches us to decode, and by the dreamlike undercurrent of the scenes of the young boy and girl, both emphasizing the elusive nature of a medium that floats learning on illusion.

It is a young, but very elegant film with gestures that catch fine shades of mystery and handles them with wry humor. Toward the end of the film a young girl's voice echoes a thought from the nursery rhyme "… gently floating down the stream. ... and life what is it, but a dream?"

The final sequence in the film is not a *montage* of quick-cut frames, but using exactly the same form as a montage it is a *story* told in the fast-cut articulation of the cine-rebus, the *pictured sound of a word*. This final time there is no voice to decode it for us, just the organ-grinder music that has run through the entire film. Toward the end of this final sequence, the pictures of the rebus-told tale are interrupted more and more frequently with the black and white cut out animation of the Maltese cross movement again - the sound of the organ grinder interrupted by what we take as the clicking sound of the mechanism itself used here as a comic analogue for the human vocal tract since the clicking sound that accompanies it stands-in where the rebus's vocalized translation would have been. Until once again at the end of the film, the cross is all we see before it too blinks away to nothingness.

In the passage which just precedes this final exam on our ability to read the rebus, Dewdney gives us one last opportunity to see pictures with a voice accompaniment telling us how to decode them. In this case the pictures illustrate the syllables of a young girl's voice saying: "The cross revolves at sunset," followed by images of various durations of a thumb, Maltese cross, revolver pistol, a drawing of an atom, the sun and a city. " The cross revolves at dawn" followed by the same string ending with a door and an envelope. The last line: "If I die before I wake, tomorrow I am gone." has a flash of thirteen equivalent images that ends with the picture of a rifle.

The outer ring of the concentric series of metaphors that make up *The Maltese Cross Movement* is its projection of cinema as an

autonomous language form functioning just backwards from Chinese (since the 'characters' stand for sounds and not things.) It is a form of language that, in its embodiment in a machine, demonstrates how it can as well be a stand-in for existence. This conflation of the rigid stipulation of meanings with a mechanically induced illusion of continuity creates an overarching and metaphorical description of language as a mere place holder in our apperception of reality. On a more personal level, the film jokes, in a good natured way, about those illusions and dreams that mimic our experience of life – along the way to hinting at the wicked existential truths bound up in those dreams. Overall, the film has the structure of a ballad with exposition and refrain, and you're drawn to seeing it again and again because you never quite get inside the whole thought.

But there's something else going on as well. Dewdney shows you a picture and with a vocal cue tells you which of the many polyvalent possibilities he's singling out for meaning. Learning to decode a rebus this way forces us to reverse the direction of our very deeply ingrained flow of meaning from word to image (as in a picture theory of meaning) and by doing so creates a disturbing turbulence with the counter flow, a turbulence redolent of resonance, a turbulence that echoes the mirror-movement of a dream.

Instead of moving from the sound of a spoken word or the sight of a written word to a referent (perhaps a 'mental image') in the process of building ideas, we learn to sound out pictures to get meaning, while denying what the pictures directly represent; thereby pressing these depictions into the service of an unrelated narrative. The first part of the spoken word *nose* equals both the idea of negation and the idea of cutting off the end of a nose!

Dewdney has done the opposite of Levine, in that Levine retained the reference of the original individual scene in terms of character and location, but lost the spatial relationship between those elements and the narrative they came from – thereby creating an overriding one of his own. Dewdney actually shook off the reference between the pictured object and what it is a depiction of and substituted a stipulated reference to the sound one makes when identifying that object, creating a new narrative, independent of the representations used to relate it. The inherent polyvalence of pictures shows up in the fact that initially we need the voice on the soundtrack to specify which of the possible ways of 'identifying' an image, the author means us to adopt as the stipulated sounding of the image.

Using this approach in training us how to read his version of a rebus, Dewdney is actually stipulating the meaning of pictures rather definitively and with verifiable precision. However, despite the

stipulative character of the gesture, Dewdney strives for the resonances of omnivalence through the poetic relationship among the little narratives he concocts.

In all these didactic explorations that I've been describing, the implied question: "Are you following me here?" is very strong. On the back of this question rides the interactive character of this form of filmmaking. Following Jacobs or Dewdney, or Levine, or Dorsky or Snow or many of the other 'experimentalists' in the language-game inventing cabals of the 1960's, 70's and 80's, following them on the multiple levels on which they are playing games of idiosyncratic reference, is very much like following a poem with elaborate cross references. The structure of each work is self referential because, if for no other reason, they've invented it – not out of whole cloth perhaps, but out of the bits and pieces of the visual languages that surround them in the avant-garde milieu. They've also found very interesting and compelling ways to redirect the referential nature of the image by stipulating, through their own didactic processes, a different direction for the mind to move with the picture.

While Levine's and Dewdney's work are examples of the amazing thought experiments exploring the future potentials of cinema, on a certain level these two filmmakers ignore just about all of the pictorial qualities around which Dorsky's films, for instance, are grounded. Stipulating one meaning for a picture, as Dewdney does, makes, as we've suggested, its polyvalence unavailable, and really most of its pictorial qualities inconsequential. And further, in Dewdney's film, the expressive potential of the cut is reduced to the job of parceling out the words of a poetic narrative. Levine is hardly unaware of pictorial values; he just chooses to simplify his palette toward other ends.

41. Illustration, induction and repetition:

"It's hard to believe!" he wrote. And so it would rhyme,
he wrote it again, "It's hard to believe!"
- Christopher Maclaine in *The Man Who Invented Gold*

I've been throwing around this metaphor of mental movement in a loose and almost indefensible way. I'd say it was utterly indefensible if it hadn't been so useful to us up till now in illustrating so many equivalences and distinctions. From a severely existential point of view the idea is, as Dennett pointed out,[64] highly problematic. But this doesn't make it a useless turn of phrase. We just have to be careful about how far we go with it. After all it is just an idea – I'm not actually suggesting that what goes on, when we count something as meaningful, corresponds to some *specific* squirt of neurotransmitters in the brain.

In the case of mental movement, the idea will be all the more useful if we can describe something of the 'space' within which this movement occurs. So, to begin with, since we need an umbrella term for the relations we want to describe, why not 'consciousness', since it's a familiar one that can do without much bending or stretching? Remember, we are not trying to describe actualities in our talk about consciousness, we're just trying to refine the way we can think about it as an arena for the metaphor of mental movement. Our corroboration for whether this kind of talk makes sense, is no more stringent than: "Does this description sound familiar, or more or less correct, to you? Do you know where to go with it – at least in the short term?" I think even Quine himself would allow this so long as we were very careful about how far we relied on this comfortable feeling.

So up till now, except for some talk about stipulation and suggestion, and vectors and resonance and the like, I've been vague about the different ways stimuli can 'move' us in my peculiar,

[64] See Dennett, Daniel C. (1988) "Quining Qualia.". The imputed sensation of mental movement could be considered a kind of quale or subjective impression. Dennett's very witty article maintains that certain mental qualities called qualia don't exist. In Dennett's wry vocabulary, "quining", named after a particular talent of Quine's, means to take something that obviously exists, and make it vanish – or at the very least, banish it from philosophical discourse. Dennett ultimately goes on to *quine* consciousness as well as qualia. I follow him in both cases. However, even words for things that don't EXIST can be used successfully in textual analysis and even in philosophical thought experiments, so long as nothing in the experiment is conditional on their being more than a useful, ad hoc way of talking about something – an heuristic perspective.

descriptive scheme of things. It's a huge and conflicted topic, (the interpolation of stimulus-response activity is) upon which thousands of years of discourse have been focused, and one in which, if we follow Wittgenstein or Quine or Dennett, we see that it can trip us up badly. But if we remain clear from the outset that our business is heuristic and descriptive and not at all prescriptive or definitive, we might gain some truly useful understandings. Remember, we are not saying consciousness exists in the same way a lamppost exists; we are merely using it as a term for directing our attention toward a gathering spot for other terminology.

Another way of putting it, a particularly Wittgenstinian way, is to say that in order to more finely and fully describe vectors of mental movement, we'll be playing several different 'consciousness' language games – as we talk about the use of film loops and other overtly repetitive gestures.

A loop, strictly speaking, is a piece of movie film spliced head to tail so that the same images go around and around through the projector gate presenting 'the same' information again, and again. And maybe again. Right here we have a question of phenomenology: What is *the same*? Isn't every repetition a *new* occurrence of the information? We're not just playing semantic games here – there is something important to untangle.

What happens to us when we are presented with the same thing over and over again? Many, many different things can happen, depending on lots of factors including circumstances and attitudes.

Repetition is boring. Let's just take that as axiomatic for now, and see what happens. The first counter-example is the 'beat'. A beat is not a beat without the repeat.

At what point is a beat, boring?

When it becomes repetitious.

This little circularity points up something simple, obvious, yet important. The form of the sentence "That beat is boring." leads us to believe that we've ascribed an attribute to the beat, when in fact we've described an attribute of ourselves.

The point of this exercise is to get us used to the idea that when we say something is repetitious, we are describing our own sensation not the something that caused us to say it – though the form of the sentence might lead us to believe otherwise.

Someone else might look at that same repetition, and find it informative because they are bringing a perspective to it that has a different scale; or captivating, because they have the opportunity for a close examination of something intrinsically beautiful or mysterious; or hypnotizing, because the repetition has a period that keys into some

deeper rhythm in their psyche. They *get into the groove*. They recognize the differences as well as the similarities. For them it is not the "same river twice" or however many times. They see a theme and its *variations* rather than its *repetitions*. Perhaps you could say they saw reoccurrence rather than repetition. It is a shift in a way of looking; and at the same time an acknowledgement of the beat in another form, a cadence at a different level.

Even though there are several distinct uses of loops and other kinds of repetitive gestures that I want to explore, there are a couple of things that are common to all. One is that each particular use of repetition has a particular meaning style that partakes of its own distinct mode of circularity.

Another is that the entrance into the experience may require a trust, a suspension of disbelief of its own peculiar kind; but one very different from the nearly physiological cinematic suspension of disbelief that allows us to fall effortlessly through the surface of the screen in the first place, and into that unique state you could call being *In the Grip of Illusion* or ITGI for short. This particular *loopy* trust, familiar to connoisseurs of avant-garde art, usually needs to be consciously given, especially at first.

The suspension of disbelief required for us to be able to fruitfully experience loops and other *overt repetitions* begins when we first recognize that the (representational) scene we had just effortlessly fallen through the screen into, is now recurring. After the second repetition we have to shift gears again, and perhaps yet again as a looped experience continues. This suspension of disbelief is not usually automatic since we have to trust that the filmmaker isn't willfully getting us bored and angry with this experience of redundancy, but is instead announcing that a different language game is now being played on the screen. The exact nature of that new language game has yet to be revealed, however. We can get bored and shut down. Or, we can begin to question what's going on: we are invited to enter into a hunting mode : the artist is implicitly asking us to question his or her intention. This is *intellectual interactivity.*

When we do this, we've shifted states. Let's call this one QTF, for 'Questioning the Feed'.

The central motivation in minimalism is its necessary but implied demand for interactivity. I described the opening of Levine's film *The Big Stick* in which we see the same scenes of Charlie Chaplin bumping first into a cop and then a madman in the park over and over again. It really is the same set of scenes, but in Levine's film each repetition is cut slightly differently.

So what?

Once we recognize that the image is being used to explore some feature of the experience beyond creating the illusion of characters in a park on 'the other side of the screen', and, if we have learned how to play this particular, minimalist, visual language game, we then know to be looking for different kinds of qualities that are being modulated. Through active and questioning viewing, the film is forcing us into a dialogue with it, one in which we question its methodology.

If we've discerned that some aspect of what at first appeared to be identical, is actually being modulated, and we then come to understand, or feel the scheme of that modulation, we get it's beat and feel its groove, then we pass onto another plane (or achieve another perspective) we can call IMM, 'In the Mind of the Maker' – the perspective from which the modulations of the repetition make sense and carry meaning for us – we understand the decisions and may appreciate their implications; we have devised a fabric, or a context that lets us move with it again; we move with its music.

This transition in *planes of consciousness* from ITGI thru QTF to IMM can be compared to Snow's *dialectical-spatial* play around the surface of the screen in *Back and Forth*. In this case, with the repetitions in both *The Big Stick* and *Back and Forth*, our consciousness, or at least the locus of our perceptions, moves from the other side of the screen where we had participated in a photographed reality, through a recognition of the screen itself as the locus for discerning new meanings, and on into the minds on our side of the screen (our hypothetical conversation with the author or with our own mechanisms of perception.)

One of the next films Levine made illustrates where his mind moved after the lessons he learned from having made *The Big Stick* – a silent film. It is the sound film that I mentioned briefly in the introduction to this book, called *Notes of An Early Fall* (1976), and it is not strictly speaking constructed of actual film loops.

In *Notes of An Early Fall* one of the first things we see as we fade in from darkness is a turntable spinning with a warped LP on it. As the tone arm hits the warp, it leaps into the air and lands somewhere else on the record. We can tell that, before some heat wrinkle caused the record to warp, we would be listening to the talking blues. Saul's titles are almost always elaborately echoic puns, and since one of the things this movie is about is *falling*, the talkin' blues puts us in the right mood. For a good 5 minutes of largely unbroken revolutions, we watch as the tone arm leaps and falls, entering the Cage-ian realm of aleatoric composition.

Some would say that there is a kind of minimalism in the hard blues, a minimalism that invites you into the mind of the maker – an

invitation that especially looms through intoxication or exhaustion. But there's much more going on here than sometimes being stuck in a blues groove when the needle lands more or less in the same spot over and over again, or being thrown into the freaky world of aleatoric minimalism, when it doesn't.

There is a direct descent into madness here as we sit behind Saul Levine's shaky hand-held camera staring at the phenomenon on the turntable. It's not the kind of secondary fright experience that a hyper-Eisensteinian montage or some tale of Gothic horror would induce, but instead it's our growing empathy with the directly expressed madness embedded in the fixation of the maker on an insistently leaping tone arm. Where the modulations of the repetitions in "The Big Stick" are under Levine's explicit control in a manner that strongly suggests he has an attitude and a point to make as he runs his finger up and down the length of the loop, so to speak, the modulations here are produced by random forces.

There's also something a touch vindictive in this, his persistent demand that *we* come to grips with the embodiment of *his* personal frustration (and on such an extremely intimate and visceral level) through the agency of this stuck bluesman who, in one extended riff, over the endlessly same piano tinkle says the phrase, "*isn't anybody*", over and over.

But along with manic-depressive persistence, there's also a cool detachment in Levine's awareness of the way the two media – film running in a linear fashion through the gate of the camera, and the warped vinyl disc describing its own circularity – speak to a duality in the nature of experience: our active hunt for meaning in our passage through unyielding sameness on the one hand, and our effortless recognition of patterns in any ongoing wash of experience, on the other.

The Film That Rises To The Surface of Clarified Butter (1968)[65] by George Landow, a.k.a. Owen Land is probably the first, and certainly remains one of the most provocative uses of loops in cinema. [66] Again, this is not *strictly* a loop film since, once again, the repetitions we see result from the linear recording of a repeated action, a quasi-cinematic repetition – as we look over the shoulder of an animator who is drawing what looks like a cartoon of a Tibetan deity.

[65] This particular film of Landow's has inexplicably gone missing from the catalogues.

[66] It's worth noting, when we're talking about film as a living language in which dialogues occur, that George Landow a.k.a. Owen and Saul Levine, a.k.a. Saul went to High School together.

The figure comes to life as the animator flips pages of perhaps half a dozen drawings back and forth and plays a single gesture over and over again in a way that reflects that he also is being trapped in the repetition of action, trapped in a loop. We can't really tell if the animator is repeating the action or if the film of his action is being repeated. The looped soundtrack emphasizes the closed nature of the cycle. The film has a decidedly hypnotic/contemplative effect and we can feel our consciousness moving into some kind of a condensed state. Perhaps, as the title would suggest, it is rising. The effect of trance-induction or state-shifting shows how film can have the *motive* power of the mantra, the incantation and the chant.

The characteristic ability of repetition to directly shift consciousness is demonstrated in another of Levine's films, *Raps And Chants I, With John Broderick* and represents an attempt to tap a state of consciousness that is either beyond or beside hypnosis: the state of psychomimesis. *Psychomimetic*, meaning imitative of psychosis, was a word that was attached to the LSD experience during its early days when the drug was being used by psychiatrists who were hoping to understand certain pathologies (often by experimenting with it on themselves.)

But, before I begin to attempt a description of the psychomimetic effect of *Raps and Chants-I*, again, a little cautionary tale about 'normal consciousness'.

If we want to talk about normal consciousness, and we will, we have to recognize that there's a peculiarly toxic quality to the term. Toxic to the kind of lucidity Dennett is selling, at any rate. We could follow Dennett – and *quine* 'normal consciousness', along with all the rest of the descriptions in our consciousness language game, and whereas that would apprise us of our circumstance, it would also leave us totally hamstrung and no longer able to carry on what have been, and what we can expect will be, many fruitful discussions, (even if those fruits wouldn't pass muster in the verificationists' store.)

But I think it'll serve our purpose better to admit upfront that the judgment: 'normal consciousness' is either a simple relational term (normal compared to x) or pure shorthand for our ignorance (we really haven't more than a clue about the nature of consciousness and whose is *normal*.) However, toxic though it may be, as a relational term it can still work when we're aware of the nature of the judgment; and as a tool of literature it's obviously crucial.

I will ultimately want to claim that the central meaning in *Raps and Chants I* consists in our actual movement from one plane of consciousness to another. This is the difference, in my mind, between depiction and induction. If we get onto this film's wavelength, we will

experience something of a condition rather than simply *recognizing* it. Horror films can do this to us, but the mental condition that Broderick is describing on camera allows experience of and insight into something both deeper and much more finely delineated than the various flavors of terror or raw fear.

Nonetheless, this *is* a horror film, no mistake about it. Especially, it is *lit* like a horror film, but upside down: Essentially, in a single talking head set-up Broderick tells us a story sitting under a skylight that blows out the top of his head, and puts deep shadows under his eyes, nose and chin (typically a face in a horror movie would be lit from the bottom, up). The story he tells, while occasionally toking on a joint is about an acid trip.

There is no question about how the question of normal consciousness is shaded here. Broderick is clearly stoned. But we also get the sense that what we experience of him, the portrait we get of his consciousness in these long, hand-held takes, has less to do with the joint he first tokes on a few seconds into the film, than with the still lingering after-effects of the extremely distressing acid trip he is telling us about that he took many years before.

On one level Broderick seems to become more incoherent as his story progresses, yet in fact he is quite eloquent in his presentation of a mental state, an eloquence whose stage is set by having the top of his head blown out by light pouring on him from above. He begins quite formally to describe the setting for what was a group acid trip, obviously self-conscious about directly addressing a camera, by telling us that what we are going to hear about happened fifteen years earlier and that of the ten people who took acid together, his was the only bad trip. All the others, he says, had a "perfectly safe experience."

He frames the tale stiffly – in the manner of a business presentation,

> I'd like to talk a little about this experience that I had. There were a whole bunch of things going on at once, going on simultaneously, twenty or thirty things going on at once, overlapping each other. But I'll just describe them one at a time.

He goes on to describe several events: his immediate and conscious experience of the electricity of his own nervous system as: "…an actual brainstorm, thousand of lightening flashes everywhere". Then he describes the sensation of total identity loss, of not being able to figure out who he was. Then he describes a voice that got stuck in his head, endlessly chanting the name of a friend that he repeats over and over: "Buckley, Buckley, my friend Buckley". He follows this by

describing the effect of a neural/audio-visual transition cue that he describes as being like a TV wipe, swishing him from one state of hallucination to another, but always the same hallucination.

As he goes on he gets more and more agitated, his voice quavering and his hands flailing. He doesn't appear to be acting, he appears to be relapsing. It's like we're watching him fall into the terrible grip of hallucination before our eyes, dragging us with him through some empathic power embedded in the repetition.

The camera roll ends. Three minutes have gone by. Broderick has barely begun his story, but he has gone from a state of formal, in-front-of-the-camera nervousness to a state of near panic, as the memory of the experience overwhelms him.

When the second camera roll begins and Broderick resumes his tale, he is much calmer, but this roll begins with half a dozen or so quick silent takes in which his image jumps around the frame, in between flash frames and audio pops from the camera starting and stopping, all having a first person kind of frenzy about it–this reloading the camera and trying to pick up the thread of this tenuous state of mind. When Broderick resumes, he is located off in one corner of the frame, at first continuing the description of the sensation of the transitional wipe, repeating the description faster and faster. Then he switches to describing another voice in his head that tells him he can escape the experience if he can only get a tranquilizer, and he begins to chant on camera, "I've got to get a tranquilizer. I've got to get a tranquilizer! I've got to get a tranquilizer!!" over and over. Then he talks about someone else at this party thrusting the *Tibetan Book of The Dead* at him and asking him to locate which Bardo he is on. Then the roll of film ends again, and when the third and final roll commences, he continues describing these various mental loops, this time interspersing them with one another, again growing progressively more frantic as the filming continues, hands flailing, looping his experience for us, each repetition intensifying the waves of his panic and becoming a chant that carries us into his state of mind.

The overall, formal, *three-camera-roll* structure of *Raps and Chants I* is announced by the artifacts of the camera-roll changes: a flare at the end of a scene, a splice to a fragment of Kodak-red-stripe leader, then another *start-of-roll* flare. The first time it happens, it is accentuated with a series of 'false starts' at the beginning of the 2^{d} roll. Encapsulated in this experience are two of the three fundamental, physical engagements with time that are possible in analog/mechanical cinema – 1) the film running out and 2) the camera

stopping and starting again. (The third, which does not occur in this film, is a simple cut.)[67]

Within these 3 repeated elements, clearly demarcated as separate rolls of film, both Broderick's repetition in telling about the individual elements of his experience (his verbally recreating their actual repetition) and his interleaving of these repetitions, create a formal echo. And when he tells us toward the end of the last roll about being asked by someone at the party to locate his Bardo (which has been described as having one's friends perform an experiment during the experience of one's death, in which one is continuously reminded to keep watching for hallmarks of the passage from life), at that moment he thereby invokes one more set of echoes with cosmic overtones – all this in a psychomimetic performance consisting mostly of cycles.

One of the things I find especially interesting in this nesting of formal cycles is the relationship it demonstrates between narrative form and omnivalent form. There is a clear narrative development, if occasionally halting, and a clear set of dramatic developments, as the teller gets more and more intense through each of the camera rolls, and this linearity is balanced by the formal resonance that is produced by the echoes of the nested cyclical structures. One could easily view the film as having the form of a three-movement sonata where the theme is stated by the initial quality of agitation displayed, and then elaborated on in each roll, since Broderick's agitation, resonating from the tremolo of the voice, inflects more strongly than the words. The signature key is located in a particular quality of emotional agitation.

Repetition in this film has several distinct roles. It creates an overall structure, it creates variations within that structure that have the potential for resonance, and it also has the mysterious organizing force that chanted repetitions have in conducting us to another plane of consciousness. It also reminds us, in a couple of distinct ways, how re-cognition is inherent in repetition, whether in psychotic or in more normal states of consciousness.

42. The material and the medium:

The structures and therefore the resonance and therefore the meaning of many of these films hinge on an overt acknowledgement of the materiality of the medium. However, as the experience of poetic films on celluloid becomes more and more rare, the lessons

[67] Though some might say a cut with a visible splice has a different ontological implication than a cut where the splice itself is invisible and only the change in content clues us to the transition.

embedded in them tend to seem quaintly historical. Unfortunately for us, analog and digital cinemas are practically indistinguishable from one another as story formats, so that the materially focused distinctions I'm elevating in these more poetic works may also seem ever more irrelevant.

But the very materiality of real film (we can hold it in our hands, look through it and see pictures, etc.) and its photo-mechanical interaction with our nervous systems not only provides a stable reference point for questions of ontology (how we ascribe reality to experiences) and of epistemology, (how we assemble a conception of the relations of space and the continuity of time) but also, as we'll see, requires an active and physical bonding between the maker and the product, by way of the material substrate itself, a bond with intense creative implications.

So, with these poetic films being self-conscious of their materiality, films which are becoming quickly more problematic to access in their original incarnations, films with visible splices, included leader, camera flares and marks made directly and mechanically on the surface (painting, scratching, etc.) – all of which signify an ontological baseline – with these works, it is the surface and the substrate itself that is what's primarily real – the surface of the film and the surface of the screen. All illusion starts here. Rather than being grounded, as are virtually all narrative films, in a cognitive or perceptual illusion these films are grounded in their material nature. They are self-conscious recognitions that the experience is derived from chemical dyes deposited on a layer of plastic that is then run through a machine that converts a spatial displacement into a temporal one.

Though irrelevant to telling stories, being 'upfront about where it's at' in this purely material sense, has some particular advantages, from both a philosophical and a poetic point of view:

If one's task is to investigate ontology, it's best to set out grounded first in a reality rather than an illusion.

The meaningful articulation of the substrate qua substrate gives some potential for increased breadth as well as economy of experience. Breadth, because if one's travels to the edges of the potential illusions of cinema begin from an awareness of ones *actual* material circumstance, one will ultimately have covered more ground. Economy, because if one is aware of the articulations of the substrate (emphasized often by a hand-held camera and visible splices) one can bring all of cinema's motive forces into the game of resonance.

The materiality of film is/was a fact of life for a filmmaker. Since films were once made by welding together separate pieces of material,

the fact that the sound-bearing substrate is distinct from and has utterly different material and operational characteristics than the picture, turns out to be a significant component, both in the way these films come into being and in their meaning.

Approaching film's material substrate brings the dimensions of yet another formal art into play – sculpture. I like to think of film as a truly *plastic art*, that wonderful term that describes painting, sculpture and even attitudes toward music, poetry and prose, a term that emphasizes how the apparent flexibility of movement within a substrate directly influences the movement of a mind.

I've tried to be explicit that the insights in this book, whether they are philosophical in intent or not, are the insights of a filmmaker, and not of a philosopher. A particular kind of very hands-on filmmaker to be exact. Here is another aspect of how this kind of filmmaking diverges radically from the big narrative screen. For a hands-on filmmaker every act of meaning requires an act of physical movement beyond merely speaking or writing. From aiming a camera and turning it on or off, to reaching for a strip of film and laying it on the forge with another, the body is active. The mind directs the body to precise places at precise times. The body enters a rhythm and flow with the decisions that articulate the pictures. For a hands-on, individual filmmaker, the materiality of the medium is inescapable. For the structural, poetic and minimal filmmakers of the 1960's until the late 80's, when film began to lose traction as the major moving-art-medium for exploration and poetry – the method of fabrication, of articulation was wedded to the materiality of the medium.

In *The Big Stick* the appearance of the physical splice in the image, creating a strongly shadowed horizontal margin across the top of every third, fourth or fifth frame, (sometimes with a little bit of overlapping film-cement drool) not only announces the physicality of the medium, but also provides an illusory space of its own within which the photographed images sometimes (depending on the speed of the cutting) appear to rotate around the splice. The economy implied in this announcement of the material defines a fundamental ground against which the other, more usual, representations of space in the film become defined. The projected splice's meta-spatial dimension, one which refers directly to the condition of depth in the substrate (since a splice on a substrate is in fact a three dimensional artifact, the edge of one piece of film being glued *on top of* the edge of another) greatly enlarges the referential possibilities of the film, allowing the medium to articulate new kinds of visual coherence – rising from our forced awareness of the continuity of the substrate and of the modulations that can be worked upon it. This, in turn reminds

us, as we reflect on the forced allusion between image and substrate, of the layers of neural-level fabrication necessary for our own sensation of a coherent visual field. This metaphysical to physical allusion provides a big economy, a powerful ontological recognition and a major addition to our epistemic repertoire. And it only works if you plant yourself in this particular ontologically grounded perspective. Otherwise the experience makes no sense. Forcing the viewer to recognize the primacy of materiality is one way that I claim film can actually *do* philosophy.

43. Sonics and seamlessness:

Each of our senses is more or less dynamic. We might even claim that consciousness itself is fundamentally dynamic. But, just focusing on vision and hearing: sound is by definition a variation in air pressure, vision is a product (among other dynamisms) of saccadic eye movements, those constant, dancing movements of the eyeballs without which the world would disappear. Neither sense functions in a static environment. Once mediated however, the picture can sit still, but the sound can't. Pictures are incremental – sound truly is continuous: If you drag a film strip through an edit reader, you see one still picture when you stop. If you do the same with a sound strip, the oscillations that create the sound get further and further apart (the pitch lowers) as the movement slows, until, when the substrate stops moving, the effect vanishes– no sound at all.

We'll get into other technicalities about the relationship between the picture bearing substrate and the sound bearing substrate later, but for now, a little side trip into the logistics of making sound films.

If you print one piece of picture on top of another, you'll see both pictures, coherent unto themselves, but interacting in semi-transparent layering. It's called a superimposition, and it's mostly encountered, for a second or two during dissolves. It is read as an abnormal condition if it persists. Superimposition of sound is entirely different though, since in the production of any documentary or dramatic film the finished soundtrack undergoes extensive superimpositions, many of which are not only not particularly significant, but un-noticeable and even un-detectable.

A film is built out of one (main) picture track, but many, many soundtracks layered on top of one another. Of these many tracks there are four main types:

1. a sync track that's recorded at the same time that the picture is shot, and is usually focused on recording voices, either dialogue or interviews;[68]

2. one or more music tracks;

3. one or more sound effects tracks

4. and a narration or voice/over track.

One of the last stages in the production of any film is the "mix", where all the many soundtracks are re-recorded onto one in a way that makes the transitions either seamless and un-noticeable, or maximally dramatic.

In fact, one of the strongest and simplest way that a film editor can guarantee that pictures shot at different times and different places can be spliced together to give the impression of sequential moments in one place, is to run a continuous sound ambiance underneath all the picture edits. This works on two levels – if it's convincing it provides us with an impression of reality; if it's less convincing, the technique will still work to create a coherent flow of meaning, because we read continuous ambient sound as giving all the subsumed pictures a grounding in one location, a singular sense of place.

Mixing a film, analog or digital, is one of the least acknowledged and most important arts in the collaborative filmmaking process. Films live or die in the mix. One simple dramatic scene alone might have dozens of sound effects tracks that have to be mixed – one for the ambient sound of the empty room, one for the refrigerator hum, one for the lawnmower in the backyard, one for traffic outside, one or more for background characters' movements, one or more for doors opening, footsteps etc., each track requiring equalization and blending in and out in order to produce the impression the director wants the space that's photographed to convey. A well sound-designed, scored and mixed film, especially with dialogue written and performed with grace and rhythm should have the sonic coherence, complexity and formal integrity of a symphony.[69]

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[68] In many feature films, the sync track is never used in the final mix and only serves as a guide track for dubbing or ADR (Audio Dialogue Replacement) where actors re-record their lines in a studio.

[69] Once I was editing a documentary that had the potential for this kind of integrity, but we had a problem. One of the most compelling interviews had a somewhat variable, hiss-like white noise in the background that was extremely difficult to filter out - purely an artifact of bad location recording technique. The audio-engineer addressed the problem - not with filters, but by adding two strategically placed seagull squawks, which told the audience to read the hiss as waves crashing on a beach. The added context made the annoying quality of the sound disappear. So much for the inherent *truth* of documentaries!

44. The private language machine and the evolution of a medium:

One of the things that Wittgenstein is most famous for is quining 'private language'. By saying that private languages can't exist Wittgenstein wanted us to recognize the inescapable function of the social fabric in language's work.[70] Even if one talks to oneself, Wittgenstein maintains, one is using a public language for a private act. Even if one invents words that no one else knows, to describe things no one else knows about, or yeah, even invents a hypothetical and original grammar, one is merely adding a new, and so far private dimension to one or more public languages.

I happen to buy into this idea on the one hand, but on the other, I'm trying to describe something that is so language-like, I'm at a loss for what else to call it, and that at the same time is so new that, in its most active stages of invention, it is necessarily going to challenge the private language prohibition. What I'll be focusing on is the *filmmaker's asset management scheme* – whilst working alone and for an audience that is expected to catch up with the work. I'll be talking about a process of language invention. This is one of those places where the idea of cinema as a language analog gets most crisply defined – in its newness.

Perhaps the most significant ramification of Wittgenstein's perspective that language is a working social institution is his demonstration of how philosophy gets into trouble when it tries to ignore how people actually use words. In this view, it is impossible to conceive of meaning without use – both in terms of there always needing to be a context for meaning and as well, a recipient. Private language is therefore an oxymoron.

This may become the crucial issue in determining whether or not one wants to call something, in particular the kind of cinema I have been describing, a language at all: Can one's unique working method, for instance be considered a private language?[71]

I don't much like textual analysis, as important as it may be. What I have to do next however is to present what is essentially a textual analysis of a physical process – and one that involves, of all things, questions of taxonomy. It is so central to the idea of using cinema-as-analog-to-language, for the purpose of better understanding the *nature*

[70] Of course, Wittgenstein's quining went on before Quine's own quining, and even though (as Dennett failed to point out) quining is itself just a matter of using Wittgenstein's broom.

[71] Rigid Wittgenstinians, though the term might seem oxymoronic, will simply say that just because there is meaning, doesn't mean there is language. In my view, this is completely wrong. I believe that meaning is both a necessary and a sufficient condition for the diagnosis of language.

of being (so to speak), that I just have to do it. I hope I can be as clear and painless as possible.

We're directly concerned here with the differences between pictures and words, and one difference that is outstanding is that one cannot put pictures in alphabetical order. The most powerful impact of this on a filmmaker whose work is not verbally driven, is that there are no universal protocols for organizing pictures for access. Each particular project can demand its own protocol; not to mention the fact that labeling can destroy aspects of variability that can neutralize the image's polyvalence.

The resource management protocols of fictional narratives and most documentaries are fairly standard, word-driven as they are: When a fictional narrative project gets transformed from a *working script* to a *shooting script*, a number is attached to each scene and that number is written on a slate that's photographed at the head of the take. Every time the camera rolls, the film is slated to the scene and take number on the shooting script. Miscellaneous material or fodder for montages, rather than being numbered, may be labeled in the editing room (on the computer desktop) with a caption or descriptive phrase.

But, if one is working in the medium such that it is primarily driven by the pictures themselves and not any words they may be illustrating, and if one is always playing off the polyvalence of the image in the structure of the work, how do you devise a method for reliably accessing the right image at the right time as you articulate the image-stream?

This idea of articulating an image stream is at the heart of the issue, and will peel us away from the relatively analytic language we've been indulging in up till now. Here's where some boundaries get blurred, but at least one gets sharpened. In this process we are definitely moving away from the methods of philosophy and into methods that are distinctly characteristic of expression in art – especially art of the past hundred years or so. At this point in history, (but something which I'm quite sure will change in time) whereas words can be articulated either rationally or irrationally, pictures that are not being used for explicitly narrative purposes, but rather affective/poetic uses, can only really be articulated in some meta-rational way.

My language will become yet more vague and more suggestive; less analytic, and more metaphysical – as I begin to describe a process I evolved for articulating pictures that transcend their narrative character and limitations. And even though I discriminated earlier between films that I wanted to call personal and films that I wanted to

call experimental – what I am about to describe is a clearly experimental method for building a language system whose goal it was to express inner conditions of being, states of consciousness and ways of feeling that are just as distinctly *personal* – in fact, I'd say they were just as personal as can be. When I am done with my description I will attempt to bring cooler and more defensibly analytic language to bear on the previous description.

First, where do I mean to go with this distinction between rational and meta-rational articulation? Not far. I only mean to say that some decisions are rationalized before hand – thought out in words, more or less, and some are just 'felt'. Felt action is the norm in art, not philosophy.

For a filmmaker, the experience of working with pictures as polyvalent entities, with the goal of fabricating omnivalent entities is extremely consuming. Seeing the world as a shifting configuration of expressive moments or images is entirely different from seeing it in terms of configurations of manipulables like the words that shaped our initial experience of life. Analyzing the world in terms of purely visual constructs and subsequently arranging visual images to chase that analysis requires an abstract apperception that, in a world consisting of talkers, must be rigorously attained and sustained, usually with a great, but peculiarly diffuse sort of energy. For this reason a talisman is very often useful in achieving continuous, formal visual thought.

For me and for many others in my generation of filmmakers, the Bolex movie camera was both tool and talisman.[72] When I was carrying it I learned to see only what it could see. And for years I carried it with me daily, almost everywhere – self-conscious of teaching myself a distinct, purely visual and temporal architecture, attempting to sanitize my thinking, as much as possible, of verbal constraint. The inhabitants of this architecture were to be *my own otherwise indefinable and indescribable inner conditions*, as they were captured in the visual configurations I could isolate in moving pictures – conditions expressed in qualities of light and movement. I structured these impressions either as formal exercises, edited in-camera and organized by the camera roll in visual diary form, or sifted according to some long lasting inner condition, wherein images that were emblematic of that condition would announce themselves in the visual environment and be collected with the idea that they would later be arranged in the editing room, perhaps as the notes in a tone poem, or perhaps according to some other, highly considered set of

[72] See the Appendix for more information on the Bolex.

aesthetic goals as in a sonata or an essay; depending on what it was I hoped to learn at the time.

With formal omnivalence as the ultimate goal, I focused the first part of the learning process on how to set up the inner condition, the state of mind in which I could see particular abstract configurations having just those distinct (but manifold) expressive potentials that not only exactly caught a thought or a feeling, but also had an ambiguity allowing it to be combined with other equivalent images – that is, learning the referential pull between images and states of being and learning the referential implications of image combination.

The next phase involved learning how to organize polyvalent expressive elements into omnivalent expressive wholes.

The third work involved devising taxonomies that would allow me to access my elements; then designing and creating the physical structures that would house the physical elements themselves according to the appropriate taxonomy.

One thing characteristic of learning a new language is that it takes years, and is a process that builds on itself. Learning how to multiply the eloquence of the articulated picture is, in this regard, like learning a language.

By the end of that particular phase of my work, my most evolved system looked something like this: Just as I had developed a way of identifying 'visual needs' as I wandered around with my camera, I found a way to re-locate this peculiar, highly developed and refined *analytic* image-gathering process to the *synthetic* process of the editing room. I literally rebuilt my editing room for each particular experiment I was working on.

The rebuilding was always organized from a single station point, the screen of the editing machine. Material was located, (depending on the length of the shot, either as hanging film strips or rolled onto plastic cores) by their *global* position on shelves, racks and 'trim bins' arranged like the interior of a sphere (leaving just enough room for me to enter and exit the arrangement without causing havoc).

From my place before the screen of the editing machine these image sequences were all within more or less easy reach, sometimes hundreds of them – in locations determined by some peculiar and over-riding aspect of their emotional weight, their 'valence'. I placed them where they best tickled my brain – as if the location around me of each one was the spatial component of the architecture and the order in which I reached for them was the temporal. This way, as I entered the editing session I could look at the configuration I had so far achieved on the viewer as my way of stepping back into the dance of image retrieval. Slowly, over the years, I gained a comfort that

allowed me the sensation of speaking fluently with a stream of unlabelled, articulated images. Cinema was seeming ever more like a language of a whole new kind, but definitely a language: *the meaningful articulation of elements within an overarching structure.*

However, this is a language that only I could speak. And also, since I wasn't the only filmmaker with a need for a system like this, I knew that the operating characteristics of the system were probably not utterly unique. In fact during the years I shared a studio with Saul Levine we also shared some organizational strategies. So, in reality, though my dialect was unique, my language of spatial organization was not necessarily private. In theory though, it could have been.

The main point here is that for an individual working in film as a soloist, physical gestures and moves can come to represent meanings through the material demands of the process. The work that results is the product of chains of individual invention, and as such the vectors of meaning will necessarily be idiosyncratic – so it becomes the job of the audience and not the artist to make sense of the work. In that way, until it has been figured out, until its process has been decoded and/or absorbed, each new work still represents a private language of sorts.

At some point in the future however, one such filmmaker might fruitfully describe another by saying, "She keeps her simpler and lighter shots up high"; or, her more trivial shots, or her connectives or her parentheticals, or her reprieve material, etc. in order to say something significant to those filmmakers who have learned a similar method of *purely pictorial* asset management en route to playing this particular language game of the articulated image stream. Of course now, although the film-clips are files and the space is virtual, the same problem of purely visual asset management persists.

45. Illusions and ontological linchpins:

After I had been making films for three or four years (and well before I had devised the above asset management system) I got a clear picture of a few fundamental issues that had been eluding me in my pursuit of film's potential to express what words cannot – for film to grow language, as it were. This happened during my only semester as an enrolled (graduate) student of filmmaking, so I was able to spend most of my time thinking about how to come to grips with purely abstract and structural issues. When these issues snapped into focus, I realized how to build a cinematic device that could clarify two of my most basic investigations: I realized how to make a *student film,* in my best sense of the phrase.

Cinema's unique potential for articulating ontological and epistemological questions intrigued me more than anything else at the

time, so I designed a heuristic that would allow me to learn where to look – within the mechanism – for answers to some questions – among them: How is my memory of something different from my moment-by-moment experience of it? Bundled into this question is a complex set of questions actually; questions that couldn't be answered with any single film, but at least could be answered in film; and I needed to get a start.

It is significant that I did this in Chicago. I don't know what other city would have given me the inspiration or the opportunity to make this particular film. This is the only time I will describe one of my own films and attempt a textual analysis of it. Not only are its most relevant aspects easy enough to describe in words, it is also an extremely easy film to overlook, so I feel it needs some special pointing to, although my description will require a bit of patience on the part of the reader.

Chicago is a city of nested rectangles. It is laid out on a north, south, east, west grid with the intervals and widths of its streets carving a repetition of brick-shaped city blocks. By far most of the residential structures are made of brick, their facades echoing the layout of the streets; and by far, most of the dwellings themselves are shaped and located like bricks on their blocks, for the most part identical units facing each other across a street, and backing each other across a narrower alley.

Chicago's formal layout was the perfect foil for a student's material metaphor for cinema: two repetitions of rectangular units, the city laid out in the three dimensions of space, the film in two of the dimensions of space plus the third dimension of time.

My reasoning went like this: if you could *absolutely* peg the experience of viewing a film to the actuality of its recording in a way that allowed for discreet slippages in a single dimension, you could learn something fundamental about how the medium can ultimately, from a material baseline; how it could stand in relation to what it was mediating. This was my principle design goal. My secondary goal was to make a film that embodied enough personal energy and drama to be worth watching the number of times necessary to learn what it was I needed to learn from it – or, for that matter to teach to an audience of film students.

A technical digression on the nature of mechanical/analog cinema, one that tips you to the somewhat esoteric nature of this work: Since pictures are recorded and played back as the result of an intermittent process and sound is recorded and played back as the result of a continuous process, they cannot be reproduced through the same mechanism. Therefore movie projectors read the picture in one place

– at the gate, and the sound at another – over a sound head. Because two different kinds of motion are involved, on any sound-film strip the picture is displaced from the sound by a distance great enough to stabilize its mechanical movement from stop and start to continuous and stable. This turns out to be a distance equivalent (in 16mm) to 26 frames. Sound on a movie film is located 26 frames in advance of the picture. This fact is of no importance at all to a narrative, and is only significant if you wish to assess, in its simplest iteration, something about the nature of the mediation of the sound film.

The physical displacement between the image and the sound is actually a big issue in the film production and editing process because it guarantees that picture and sound will be handled discreetly from the start. Usually, in fact it is only at the very last stage in duplication when a print is being made for projection to an audience, that the picture and the sound reside on the same strip of film.

In the initial production stage, the picture is recorded by a silent camera and the sound is recorded separately on a tape recorder. The familiar clap stick on the slate marks a specific frame of sound to correspond to a specific frame of picture (the frame where the two blades of the clapper first come together) so the two can be set up to be edited in synchronization with each other. This is called “double system sound”.

There was however one other method used – mostly for recording news films – called single-system – wherein picture and sound were recorded at the same time on the same medium. Most of the films that are projected in theaters carry the sound information optically. An optical-sound single-system camera transforms the sound into a signal used to modulate a little light bulb inside the camera, recording the sound on the film emulsion photographically, just like the picture; and the projector has a little light bulb that shines through this optically modulated stripe to read the information (this transducer, the sound reader is what’s located 26 frames ahead along the film path). There is a reason for telling you all this.

I mentioned earlier that there are three principal ways that the continuity of the cinema process can materially displace the continuum of time recording from the continuum of time experiencing: 1) the beginning and ending of a roll of film, 2) the starting and stopping of the camera, and 3) the most usual, the splice or edit. Well, there is a fourth that becomes relevant in this film, albeit on a surprising scale. The speed of recording, called the frame rate, and the speed of reproduction, called the projection speed are both theoretically (and sometimes actually) variable. For sound films however there is a convention that locks both speeds at 24 frames per

second (US, 25 elsewhere). My student film, which I called *The Ogre* (1970) needed to be filmed with a single system optical sound camera in order to fulfill its goal, so variable frame rates were not an issue. However filming is a physical process with all elements subject to physical laws. So when I press the start switch on the camera, the motor is activated and the film inside begins to move. It accelerates from stopped to maximum speed in maybe a tenth of a second and so two or three frames will have gone by at a slower rate than those that will follow. The result is that light has more time to fall on the emulsion of these frames as they go through the aperture, and so those frames are overexposed (the first one the most, the last one the least). The light from the first of these frames is usually bright enough to spill across the whole surface of the film, out of the area reserved for image recording and into the area reserved for the optical sound track, and this causes an audible pop. (Figure 8) But since the picture and sound information from the camera flare are co-located on the film and the rest of the picture and sound information is displaced by 26 frames, we hear the pop a touch more than a second after we see the flare.

For this reason the stopping and starting of the camera is a signature event, the index of an event. I needed an optical sound camera because I needed to be unambiguous about *how* I was disconnecting the recording process from the viewing process. The issue was to encode the material to allow for both a precise, discernable decoding of the continuum of recorded vs. unrecorded time, as well as the more subjective and intuitive experience of recorded time and implied actual time. I wanted to create an elastic coherence between measured time and the subjective experience of watching the world on a movie screen. Elastic, but coherent nonetheless.

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Maxwell Street in Chicago, for much of its extensive north-south run, has equally spaced shop-fronts with the sort of brick framed,

windowed facades whose proportions mimicked the frame in the camera. My intention was to shoot one 11 minute roll of film that would be divided into five takes, two pairs of takes demarcated by starting and stopping the camera; and one take demarcated by a splice.

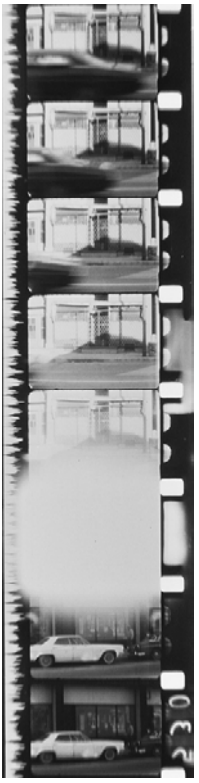

Figure 8

Flash caused by camera stopping with the shutter open.

I put the camera on a tripod, aimed it toward the west side of the north-south street on a 45º diagonal to the left and, at about ten in the morning, began a two minute long take that included many deliberate and carefully weighed, incremental shifts of frame to the right – until by the end of the take the camera was aimed approximately 45º to the right. We hear the traffic sounds of whatever vehicles propel themselves through the frame during the two minutes of continuous exposure and then, ten seconds before the allotted two minutes run

out, a voice on the soundtrack says: "Ten seconds". At the end of those ten seconds I turn the camera off.

I then pick the camera up, walk across the street, set the tripod down on a pre-arranged mark on the sidewalk, aimed toward the side of the street I'd just left, and repeat the procedure – leaving a flash on the film and a pop on the sound track when the camera starts back up again. This time, although the incremental framings from left to right are dictated by the felt tensions in the individual compositions, as they were the last time, this time, facing east, they are illuminated by a sun coming from the opposite direction and almost directly into the lens. Two takes. Two different qualities of light. One is sharp and direct with distinct shadows that are so easy to delineate that they are literally measurable. In the other, the light is diffuse, and shadows less distinct.

Then – can you bear it – I cross the street to my original position and repeat the process again. The position of the sun has now changed (the earth has rotated by a measurable amount since the camera first rolled on this scene) so the shop fronts' shadows are shifted.

This take contains a change-up however: a voice says ten seconds, ten seconds before the last take would have ended, but at the end of the two minutes the take does not end. The framing continues its measured, yet *ad hoc* march to the right until about 45º's of deflection is reached – for another minute. There is another vocal "ten seconds" announcement of the impending end-of-take, this time ten seconds before it actually does end.

And then the same thing happens again from the other side of the street. Two, two-minute takes, and two, three minute takes occupy ten minutes of an eleven minute long roll of film. To finish the roll I crossed the street again to the west side, on which the sun was still shining and pointed the camera due north along the sidewalk and let it roll. At some point while the film was running out, I spoke the name of the film, the name of the city and the date (but not the time of day) into the microphone.

When the roll came back from the lab, I made one physical splice in the original, from the fourth take to the fifth, the one pointing north, a physical splice as obvious in its material actuality as the off's and on's of the camera are in theirs.

From a single screening of the film, a viewer should be able to deduce the essential facts of its ontological status – its where's, and when's, since the vocal inscription at the end pegs it to a specific time and place (exact sun angle) and the displacement of shadow that happens in the elapsed time between takes, is indexical of the slippage

(amount of time the camera was turned off) between the individual takes.

These time shifts are precisely deducible thanks to the rules of the language game of repetition. That is, if you see the same scene being repeated, ask what else is being modulated. In this case it is shadow vectors moving with the rotation of the earth and a concomitant change in incremental framing strategies. The dramatic tension, the reason it is worth watching at all (instead of reading about as a pure thought experiment) is contained in the crisp, individual framings of a notable and evocative architecture that is randomly trespassed by vehicles and characters of more or less immediacy and radiance.

But this is not where I expected the learning to come in – on a single viewing. For the film was designed not only to be precisely indexical of its ontology, but it was also designed to be a tool for revealing how experience gets organized in memory. My written catalogue[73] description of it is that it is the first installment in a serial in which every installment is identical. My plan was to watch the film at regular intervals and invite those friends (and later students) whose eyes were sharp enough to enjoy these particular visual dynamics to reflect on how the random events and the misplaced time markers organized themselves as configurations and progressions – seen against the events, configurations and progressions noticed in previous viewings. Remember, I wanted to learn something about how a film is recalled in relationship to how it is experienced, and how that memory organizes subsequent experience. I intended *The Ogre* to be a dramatically neutral (but still watch-able) benchmark example for that test.

On this score, I was satisfied to gather subjective impressions and not try to attach any metrics or other specifically detailed analysis to my serial experiences. But I can easily say that in the first dozen or so viewings, which happened over maybe a two year period (the first few repeated screenings just hours apart, then gradually further spaced out) the 10 minutes and ten seconds of screen time subjectively went by quicker and quicker with each screening. The film with its implications, compositional tensions and aleatoric dramas unpacks itself screening by screening, and what at first may seem to be quite empty, begins to seem quite full.

The lessons of that work, which, at the time, I was determined to keep loose and as internally unspecified as possible, were

[73] Available from Canyon Cinema Co-op, San Francisco (along with most of the other films referenced in this book.) See Filmography.

apprehended, I would say, in terms of a sense of the relative weight of different moments in the film: what kinds of configurations would team up to become considered as 'an event', and how stable would those configurations remain through subsequent viewing – that is, what makes something a something?

The effects of what I learned from this experiment ultimately showed up in all of my subsequent work in my ability to intuit the valences of images as a photographer and their polyvalent attractions as an editor. It was, as I said, a student film.

46. Delimiting an audience:

Explicitly and self consciously, the audience for *The Ogre* was myself, and though it was an instructional piece *for me*, obviously it could be of use to anyone who had the need to get a feel for what I would call ontological valence. To that end, when I would show it to friends or students it was with an understanding that there would not be much talk about it until it had been digested in silence. How would I characterize the people who would willingly watch the same repetitive (even unto itself) film again and again?

So much has been written about the relationship between art and audience that I can only add a few personal observations to factor into the mix:

My epiphany with *Fire of Waters*, as described in the preface, demonstrates how a moment's recognition can become a permanent feature of one's outlook. This happens once or twice in a lifetime, so it's not very helpful to generalize from it. Although my viewing happened in a group setting, my epiphany happened later, when I was alone.

So, one kind of audience is the group of people experiencing a work together. Another is the solitary participant, nose in a book, under headphones, wearing video glasses, or alone in front of a screen; ultimately only sharing the work through some kind of subsequent conversation.

My all-time favorite example of the way an audience can influence the meaning of a work occurred during a screening of Bresson's *Lancelot of The Lake* (1974) in a packed theater at a university screening.

I arrived a bit late and took a seat toward the back after the lights went down, but before the film started.

The opening scene is of a running battle in a forest. The light is dim and there is fog roiling around the base of the trees. The atmosphere is tense. The action is being played out at somewhat of a distance, and we hear the battle more than we see it: the sound of

horses hooves, the clanging of swords and the grunting sounds of struggle; until, just after we hear an off-screen crash and gasp, a head completely encased in a helmet with a sword still embedded in it, plunges into the foreground, filling the frame. It's a grim and portentous scene. We hear, also in close up, the sound of blood spilling from the helmet – *glug, glug, glug*.

Suddenly from the front row an individual peal of laughter over-rode the sound track, and soon most of the audience seemed to get that this gesture was meant as a macabre joke and joined in, editorializing the scene with their waves of laughter; and because of this my own viewing of the film was transformed, from one of the classic takes on it to another.[74] From that moment in the film, when an audience member's full-throated laughter skewed my view of the scene, I read the film as limned with a droll self-consciousness – not a parody, but a carefully positioned distance, a distance whose vectors were so precisely and deftly specified that it became the major content, the major meaning of that experience of the film for me. Still, to this day, when I think of Bresson, what occurs to me is the light and gentle humor with which he denuded the myth of Lancelot. Intended or not, that's where I went with the gesture of exaggerated sound.[75]The audience effect, crucial to comedy and horror is probably partly a visual thing and partly an olfactory thing, and to a great degree, an audio thing: Laff tracks work.

I'll describe another kind of audience, one that subscribes to a different tradition, a different kind of cinema event. But first I want to shift the scene and describe two analogs – which I hope will make my description of the protocols of these other more formal and experimental kinds of film screenings seem perhaps just a little less churchy.

I have a fragile but intense relationship with paintings. I usually prefer looking at reproductions in books because I find I am too easily distracted by people around me in museums (galleries often aren't quite so bad) to get into the intense, very personal and very private energy that I want and expect paintings to invoke. Sometimes it's just a welling of emotion – some stored energy that the painting can release in me, sometimes it's an actual conversation, either visual, in which case being able to see one configuration leads me to being able to see another and then see the whole in a refreshed light; or it's an

[74] Some people find the film stiff and ham-handed and squirm at the sound effects, seeing them as amateurish, others find it both deft and ironic.

[75] Since the rest of the film remains coherent under this view, I must take it as intended.

actual talking-to-myself kind of conversation – an imaginary dialogue with the artist perhaps. Unfortunately with reproductions, the energy stored in the painting comes through to me more feebly, so the best alternatives are rare encounters with originals in empty galleries.

My most memorable experiences were during repeated visits to one particular room that was always empty on weekday mornings at Harvard's Fogg Art Museum. At the time, this room contained a Rothko, a deKooning and a Johns, among others. I returned often and

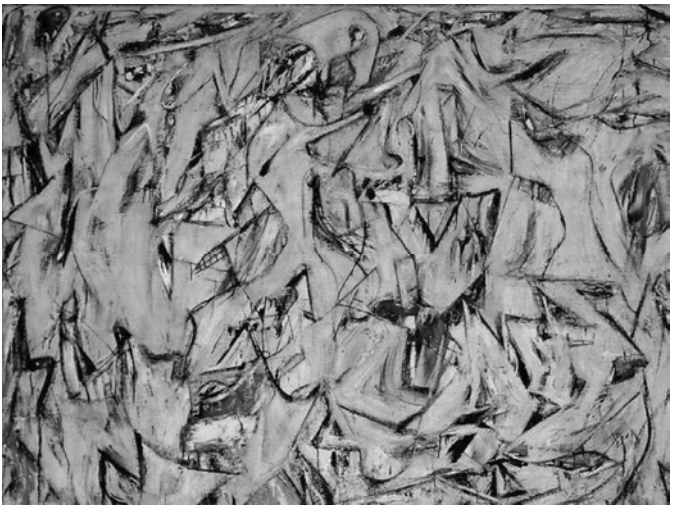

Figure 9
Excavation (1950) by Willem deKooning
Photography © The Art Institute of Chicago.

found myself with the deKooning (Figure 9) again and again.[76] The painting is a statement of both great complexity and active ambiguity, so the dialogue I had with it was long. Each visit had some of the quality of a tussling match between the dictates of the painting and my own drive for the lessons of parallax, the lessons of comparison that fought to make my eyes move this way or that, to dart from configuration to configuration, seeing something that was never before anything, announce itself as an important part of the scheme, while my gaze was en route to somewhere else.

[76] Either the painting was on loan to the Fogg, or my memory is playing tricks, and it was a different deKooning that I stared at so often with such intensity. The Fogg has no record of any deKooning, whereas the Art Institute was kind enough to permit the use of this image.

These experiences took me out of myself in a way that did not especially brook companionship. If someone else entered the gallery, I would lose my train of thought; and having been cranked up into a peculiar and fragile state provoked by deKooning's genius, I'd find any other presence overwhelming, and have to leave.

So, different people are moved by different things and in very, very different ways, and none but the most talented can enumerate or elaborate on those ways or express what it is about those things.

The second kind of encounter I want to describe, bears a different relationship to time. At a John Cage concert I was moved to tears by the incredibly subtle, ineffable progression of taste where silences, carefully flavored by the aleatoric musical events that surrounded them carved sacred, protected and ecstatic moments. There, that's one way of being moved – moved to tears, when without question you know it *meant* something to you. But really, *moved to tears* is itself many different ways of being moved.

During the Cage concert I was surrounded by people who were attending to an *event* rather than an object, as with the deKooning. The similarity between the experiences lies in the implied focus required in both cases for the dialogue with the work to fulfill as much of its potential as possible. The difference is that the experience of the concert had a shaped duration, shared by all who were tuned. Also, the protocols of the situation ensured that the silences in the work were respected and protected, even by those who weren't tuned. (Whereas, while looking at paintings in a museum there is little sense of sharing one's experience with strangers who often chatter whether they are able to engage with the work or not.)

While I was alone with the deKooning, conversing with the painting, I would catch myself articulating – sometimes just a grunt, or an ahh, sometimes a more musical response, something like a bit of humming, or tapping my foot with the rhythms in the painting. With Cage those responses were repressed by respect for my neighbors – my own participation in the protocol. But after each work, or even after a particular movement, or moment, the collective sentiment in the audience emerged as a shaded exhalation, before (when appropriate) becoming applause. Rock concerts have a similar dynamic, but with a different looking waveform.

The many films in the world of personal, experimental, picture-driven cinema that are *silent* demand a viewing protocol that combines the respect due to both deKooning and Cage. And since these works don't hang out in the same venues as what Gene Youngblood (1970:80) calls, with some vitriol on his breath, "conventional Hollywood pretend movies" these special protocols for

viewing carry the possibility of getting refined and developed, especially when there are pretty much the same people in an audience over an extended period of time – say a semester. The university or college screening room or auditorium provides a protected environment *within* a protected environment for these films, films that are explorations or meditations rather than entertainments. And since I taught filmmaking and analysis for about fifteen years, this became, by far, my most familiar circumstance for experiencing serious film.

When everyone in an audience knows one another, as in a film analysis class, each semester is like an ongoing conversation, one that grows progressively more sophisticated, and in which remarks tend to reference a wider and wider range of shared experiences and topics, as the conversation progresses. Every film that the group watches together adds its own layer of perspectives and possibilities to the conversation.

The rhythm and flux of a film analysis class is one of watch, then talk. If there is a way to stop or step frame a film, there may be watching and talking at the same time when one can point to events using the controls of an analytic movie projector or video deck. Usually however, when the film runs free, people experience something and then talk about it afterwards. This engenders certain predictable problems of reference: since we've all been subjected to an experience simultaneously that may often elude description, and we still want to compare notes. At some point in the progression of a semester, if things are going well, and the students are sharp and attentive to one another, a group speak will develop, with its own terminology and style of reference.

Under these circumstances, a very different kind of dialogue can emerge, one that, at its best, is organized spontaneously, but with grace and delicacy; and the sense of familiarity and communality that has developed over time allows the spontaneous vocalizations that we make when we are truly moved, to rise closer to the surface, to become less repressed, and eventually to become an overt sharing of what is essentially an inner commentary.

During a screening of a silent film these vocalizations (ahh, ohh, hmmm) that are usually more welcome on subsequent rather than initial screenings of a film, become more than just exclamations, they become a clear and economical way of highlighting perceptions, wherein people clue one another to some significance in the flux of events.

Clearly these classes, overall, constitute a conversation. It's even been noted ironically how they resemble the preach and response vocalizations in some churches – impulsive, natural, as well as

carefully shaded and discerning at the same time. Sometimes such semesters of study produce a very small language group, one which becomes unintelligible to strangers – a language game with only one team. Hmm, did I say I wanted the experience to sound *less* churchy?

47. Summarizing the singular window en route to the panoramic view:

So it would seem that the austere aesthetics of *The Ogre*, *The Big Stick*, *The Flicker*, *The Maltese Cross Movement*, *The Nervous System* and formal experimental films of their ilk has its place, if anywhere, in cloistered, protected screening rooms where the lights go ALL the way out, and there are no illuminated EXIT signs next to the screen; a room that is acoustically and mentally isolated from the rushes of the world.

But it is very rare to find the moving image in such a protected situation these days. More than ever, the finely wrought articulations of the image stream, ala the contemplative and perhaps challenging films we've been talking about, are found in a space that Mircea Eliade along with Nathaniel Dorsky would call sacred. Theaters with actual 16mm movie projectors are already attaining the status of historical treasures; and viewing a projected, formally structured motion picture is ever more like a trip to a church or museum. So, before we move into the profane world of the moving movie, the traveling movie, the ubiquitous digital movie, it might be good to recap what we've gained from our parallel analysis of everyday language as seen from a dynamic point of view and a semi-recluse and self-consciously mechanical cinema.

In Part I, we investigated some relationships between perception and expression, and the way they influence each other. We described a dynamic perspective on meaning and applied that perspective with some equivalence to the issue of how both words and pictures make references – how they mean. We described the importance of the shift in ontology that happens at the surface of the screen, drawing examples from the works of Snow, Levine, Conrad, Jacobs and Schilling. We also talked about some of the language games editors and directors are involved with, and how they differ if they're thinking about the fabrication of narrative sequences or of montages.

In Part II, we elaborated on the different ways that pictures, words and music create references by introducing two sets of dynamically organized universals: beginnings, middles and ends – as recognized by their rhythmical peculiarities; and interval, context and repetition – our analytic trialectic for making any communication act equivalent. We then used examples of films by Dewdney, Landow, Levine, and

myself to discuss some of the directions a purer cinema might pursue, one driven by pictures and music more than by words. And this led us into a kind of a corner, where our highly specialized needs led to demands for a privileged environment – demands that were once normal and expected, but have now become highly specialized as well.

As a result of our maunderings, we should be able to summarize some common denominators between words and pictures, between ordinary language and the 'would-be' language of cinema.

For instance, it seems that in both cases we have systems of communication where a number of elemental parts get articulated to create expressive wholes. In the case of language there is a limited set of contributors – phonemes or morphemes, letters or words. In the case of film the number of conceivable images is practically infinite. In the case of language we have rules and well-established practices around how those elements are to be combined; whereas in cinema, there are almost no rules, and in a poetic cinema there are none. Both media operate as systems of reference – we use them to connect us with something else. In language we can describe at least four distinct ways in which reference works; in cinema all the ways that images and combinations of images can reference are still being discovered. Words only have polyvalence in a poetic context, whereas pictures have a natural polyvalence, and musical tones are the ultimate in polyvalence.

So, when we also see that language and cinema and music all subscribe to the dynamic universals – beginning, middle and end-ness, we've gained a perspective from which we can also see how the syntactic universals: interval, context and repetition underlie all media. By taking a dynamic view of signification from cinema we can form a more vital conception of language and vice versa; and we can see as well how resonant ambiguities create dynamic aesthetic structures – across the board.

But the most important thing we get is our look at how meaning, along with a categorical ontology, is embedded, one way or another, in every language. The idea that words stand for objects (and actions and qualities) is so much a part of the way language is explained, that this kind of correspondence theory of meaning has become a pervasive filter on our experience of life. The ability to compare the way articulated words and articulated pictures differ in their potential framings of existential status, is a tremendous opportunity; and the ability to make these comparisons from the perspective of a referential system that is just beginning to form, makes this a unique moment in the evolution of intellect.

If you imagine that you must temporarily forget how to think in your first language in order to learn how to think in some other, and then do this when you are in fact surrounded only by speakers of your native language, then you have some idea what it's like to be continuously immersed in a picture-inflecting mentality, while being surrounded by speakers-of-words.

This is changing. The moving picture has come out of its hole and is now worn on the hip. How many of the formal values we've been touting will survive? What will be their form?

Part III

The Moving Target

It is axiomatic in linguistics that any human being
can learn any language in the world.
Eric Lenneberg

48. Digital ubiquity – the memosphere & the mediasphere:

So far we've been discussing the past, attempting to secure perspectives that would allow us to look toward the future. There is nothing however, that can make a writer seem more quaint, (at best) or even foolish, than having the future come run him down. Even describing the present has its dangers, since these descriptions can soon become irrelevant as well. However, the digitizing of reality has upped the ante on our need to understand the implications of mediation, and has done it with that same mechanism of articulation introduced with the invention of photography and that then got moved to another level by the cinema machine: the slice of time.

Before photography, our knowledge of the past was mediated in rather coarse swipes through historical chronicles and paintings. Early photographs required long exposure times – on the order of seconds – but still, this meant our knowledge of the past, for the first time, was encapsulated in a relatively instantaneous slice. Not only that, but the image that was produced was connected to an actual moment by the laws of physics. We can regard a photograph as compressed historical information that is decoded when we look at it. We can regard a historical painting the same way actually, though its manner of compression and decompression might require more arcane knowledge. Even though this idea of Coding and Decoding can embrace all of history, the term *codec* has only recently entered everyday talk.

Any representation of the past can be regarded as an encoding (with compression) of events that are decoded (and decompressed) later by historians in the light of subsequent evidence. Photography sliced light (time) faster than anything before it, compressing into a two dimensional gray scale the light that plays in color in three. With the movie camera, life could be sliced faster yet, fast enough that the slices, for the first time ever, could seem contiguous.

Digital slicing can reduce and then recreate not only light, but sound and, for that matter, any measurable component of our sensory

universe – into a binary code: *exists here/does not exist here*. This ultimate in reductionism magnifies immeasurably the epistemological difference (begun with written language) between anything and its mediated state, creating a dizzying gulf across the whole field of representation and hence, mediation. The idea that anything at all can be represented by the sheer arrangement of two fundamental states puts the condition of human knowledge in a new place once again, and it should not surprise us that the ways that binary code can spread knowledge has become a field of spontaneous and universal invention. The metaphor of meaning as mental movement has a new arena in which to play.

Earlier we launched a mini encomium on the word *idea*. A *meme* is an idea that has the power to replicate. The idea of the *meme*, or, if you will, the *meme of the meme* moves the *idea of the idea* into a historical and evolutionary context. Dennett (1991: 200) points us to Richard Dawkins' stripped down formulation of the fundamental principle behind natural selection: that all life evolves by the differential survival of replicating entities; and goes on to quote Dawkins' *The Selfish Gene* (1976: 206):

> The gene, the DNA molecule, happens to be the replicating entity which prevails on our planet. There may be others. If there are, provided certain other conditions are met, they will almost inevitably tend to become the basis for an evolutionary process.
>
> But do we have to go to distant worlds to find other kinds of replication and other, consequent, kinds of evolution? I think that a new kind of replicator has recently emerged on this very planet. It is staring us in the face. It is still in its infancy, still drifting clumsily about in its primeval soup, but already it is achieving evolutionary change at a rate which leaves the old gene panting far behind.

Dennett then goes on to list a few central memes. After disqualifying the 'simple ideas' of Locke and Hume, such as *red* or *round* – he steers us to the ideas: "wheel, wearing clothes, vendetta[77], right triangle, alphabet, calendar" and on (1991: 201). He dubs memes as "units of imitation" (1991: 202). This ultra simple idea, whose power I believe is obvious, can serve us as a filter through which we can pass the first two parts of this book. This should allow us to generalize our lessons from the past into a perspective that, while it won't allow us to peer into any crystal balls, will give us an analytical

[77] I have some questions about 'vendetta' being culturally copied in the same way as some of his other examples.

framework through which we can connect the 'codec' meme with the evolution of mediation.

Dennett links phylogeny with ontogeny using a wonderful metaphor on the acquisition of language by young humans (1991: 200):

> One of the first major steps a human brain takes in the massive process of postnatal self-design is to get itself adjusted to the local conditions that matter the most: it swiftly (in two or three years) turns itself into a Swahili or Japanese or English brain. What a step – like stepping into a cocked slingshot!

There seems to be general agreement about the speed with which language burst on the human scene, and there is also some agreement about the evolutionary advantages of language. The origin of language, however, is an almost primal mystery, being by definition prehistoric and without the stains of archaeological evidence.[78] The contemporary, and analogous, explosion of the codec's evolutionary value seems equivalently self-evident. But this time around, the chroniclers are out in force.

As we begin to think about digitizing the moving image we will temporarily abandon a couple of the peculiar alternate experiences of cinema so central to the first two parts of this book: the cinema that is 1) a nearly hermetic experience, i.e. a frame of light surrounded by a protecting darkness and bracketed by an enforced beginning and end; and 2) cinema as a medium for the esoteric and the poetic. We will also, temporarily, shift our focus from experience to expectation as we explore the new relationship between memosphere and mediasphere in sussing out possibilities for the *moving image meme.*

Let's try to get a running start at the epistemology of this issue by looking at the difference between the camera obscura and the first photograph. The principle of the camera obscura enters Chinese history in the fifth century B.C. and is mentioned by Aristotle a little later. The effect can be seen in nature when certain conditions are met: light shining through a pinhole and landing on a more or less flat surface. Once the effect was noticed: the magical seeming appearance of an inverted, but perfectly focused image of everything in front of the pinhole – those conditions were then re-created, perhaps in the tenth century, fabricated for the express purpose of capturing and then tracing a two dimensional image of three dimensional space. We learned how to form images from pure light by passing them through

[78] According to Kinneally (2007:22) the study of the origins of language was actually proscribed in linguistics for over 100 years.

a pinhole long before we knew how to capture them with physically verifiable precision.

The very word *camera* plucks an interesting chord when we're thinking about the relationship between mediation and consciousness. This Latin word for *room* has come to mean the very chamber of modern mediation. But also, since the 1970's, when Julian Jayne's controversial book, *The Origin of Consciousness in the Breakdown of the Bicameral Mind* focused popular attention on the disparity in function of the two hemispheres (or *cameras)* of the brain, the word *camera* has taken on added resonance with its allusion to the seat of consciousness.

A camera obscura-aided drawing that is produced by tracing the light that falls on a translucent surface after passing through a pin-hole or a lens, is an artifact mediated by a person over an indeterminate period of time and free from the proximal effects of physics. It is not *evidence* of the actual contents of the scene. A photograph, for the longest time, *was* evidence – evidence of the photonic energy collected across the surface of a photosensitive emulsion. The knowledge we could derive from early photographs had a quite secure degree of certainty attached to it, despite the fact that many have questioned photographic veracity since the invention of this technology.

With the movies, the very idea of the *evidence of the image* was at issue again. The Lumieres reportedly[79] jolted the security of their early audiences, creating for a moment an uncertainty that the image of the train was only an image, as witnessed by their supposedly trying to bolt from its path – but after recovering from this initial shock, they apparently were quite certain that, as an image, it was a faithful recording of a real event. D.W. Griffiths' fictional dramas had the crisp ontological duality in which an audience could feel certain that the recording of actors (fake people) was a true recording. Melies' insights regarding the disconnect between the recording and the playback instruments however, fractured the idea that this medium *necessarily* produced faithful recordings of the passage of time.[80]

[79] I repeat this report, even though it is something I personally find incredible. This level of primal naiveté in the face of mediation, being then immediately followed by such a rapid and widespread loss of innocence - as the illusion is grasped as illusion, would speak volumes about our relationship as creatures to our perceptual sphere. I prefer to chalk this report to journalistic melodrama. See Tom Gunning's 'An Aesthetic of Astonishment: Early Film and The (In)credulous Spectator" in *Art and Text*, Spring 1989 pp.31-45.

[80] Since Melies' method demanded that he expose the film one frame a time so that he could make substitutions in content in between frames, his scenes took much

Though cinema's temporal veracity was an early casualty; the spatial veracity[81] (the accurate representation of objects) of both photography and cinema is a more recent casualty, falling before the currently common practice of selective pixel replacement. Some might even argue that the *collateral damage* to our general assumptions about the veracity of any and all media representation, resulting from the prevalence of 'photoshopping', is an inevitable result. If so, we owe an oblique kind of debt: We are better off for the loss of innocence. For I believe that neutrality (or even skepticism) in the face of any information stream beats credulousness any day. The ubiquity of digital image manipulation ices this cake.

It's not that the laws of physics don't apply to digital images, it's just that it is only marginally possible to detect how any individual image's coding has been manipulated. Suddenly in the digital age, *mediation is manipulation* in a whole new way. Digitization puts imaging back on the same level as writing, as a fully manipulable medium, a very interesting comparison to make at this level for it reminds us, as we saw in Part II, that the semantic and the syntactic are merely the cores about which full meanings in language dance, in a similar way that the lensed image falling on the CCD is merely the core around which the depictions of digitally manipulated images dance. And on the other hand, digitization makes words into common, plastic, graphic elements.

John Cayley investigates the idea of poetic writing in a digital medium both in his theoretical writing and in his more picture/sound oriented digital work by combining the functions of both word and object in his consideration of the literal movement of words. His essay *Writing on Complex Surfaces*[82] traces the origin of the idea of the moving word to the concrete poetics of Saul Bass, whose medium was movie title design, a medium in which words are often used as moving graphic elements, that is, visual objects. We'll hear more from and about Cayley later. But now our expectation is that images of words can move, just like any other images. So, one little bit of fallout

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longer than 'real time' to photograph. Because he was working with slow film, and therefore had to shoot his scenes in sunlight, he had to use a stage that would revolve on a plane that countered the earth's movement, and therefore stabilized the positions of shadows within the scene. See my comments on the indexical nature of sunlight in my discussion of *The Ogre* in Part II of this book.

[81] This is a highly problematic term – problems that are readily invoked when we consider how various focal lengths of lenses render space differently. But rather than treat these complexities here, I beg that you take this as a very superficial description of this issue.

[82] See http://www.dichtung-digital.org/2005/2-Cayley.htm for the essay.

from this inevitable development is that words are sometimes objects and sometimes images – but are always words: Something about the word remains as the core around which a codec dances to provide fullness of meaning.

The memosphere is, as Dennett reminds us, a competitive environment. He makes the memosphere sound an awful lot like the mediasphere: "Minds are in limited supply, and each mind has a limited capacity for memes, and hence there is considerable competition among memes for entry into as many minds as possible." (1991:206). We might imagine that there would be a competitive advantage to being *credible* here, but credibility, in the memosphere and in the mediasphere is but one kind of currency and has slightly different values in the two realms. We might believe *credibility* to have more value in the memosphere (the realm of ideas) than in the mediasphere (often the realm of melodrama.) Therefore, we might expect the mediasphere to be driven by different kinds of market forces, where affect is valued more than reason. This may or may not ultimately be true, but, as in the other two parts of this book, truth is not really our concern here. We're more interested in vectors.

In this regard it is tempting to think of the mediasphere as an *in vitro* equivalent to the memosphere, one in which we can, with a detached and analytical stance, watch the evolution of ideas unfold. If we do however, a snapshot impression might lead us to recognize either that change does not necessarily mean evolution, or, perhaps that evolution itself is full of circularities and dead ends. Fashion is, after all, fickle.

In the first two parts of this book the vectors of meaning with which we were concerned were relatively limited. Even when we were talking about the infinitely resonant qualities involved in mutual, omnivalent reference, we were constrained to considering relationships among 1) a single audience member (pretty much), 2) a single work, or at best a genre of work, 3) an author (usually an individual rather than a collaborative) and 4) a culture in which the cross referencing of ideas happened through slow, analog mechanisms. The atomization and diffusion of digitized ideas and memes nearly instantaneously, planet-wide, means that our consideration of vectors has acquired several new dimensions including trans-lingual and cross-cultural participation in a remarkably egalitarian economics – one with implicit, massively parallel, feedback mechanisms. And, not to be underestimated, one that has moral and ethical dimensions of an entirely new order to consider. We can see meaning in the movement of digital and digitally

driven markets – new meaning as well as a very new kind of market with new styles of relationship.

Both the memosphere and the mediasphere operate via highly elaborate parallel processing of information feedback – as does consciousness (at least in many hypothetical models.[83]) The analogy of the organization of consciousness to that of an orchestra pops up in the literature again and again.[84] Often the analogy is qualified by imagining that the orchestra of consciousness is either sight-reading, or is involved in spontaneous invention; and different models emphasize the role of a conductor to different degrees. But it is the tendency toward harmony (which here can be viewed as a clumping of similarities within a field of differences) that makes the analogy appealing.[85] Digitization has brought the time scale involved in the propagation and interaction of memes a step closer to the propagation and interaction of data in consciousness. We have yet to sort out where the harmonics lie, in either case, and what role they play.

All this maundering lets us see that the codec is not merely a meme, but a *memiverse* within which dwell countless memes of countless stripes. One could say that it is the concept of a codec that makes the concept of a mediasphere viable and operable. It may or may not be *true*, as Dawkins and Dennett would have us think, that the physiology underlying human consciousness is fundamentally changed by and evolves through memes, but whether or not this kind of evolution has a biological corollary, it is *illuminating*.

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[83] See Chapter Five of Ray Cattell's (2006) survey *An Introduction to Mind, Consciousness and Language* on 'connectionism'.

[84] For example see *Evolving the Mind* by A. G. Cairns-Smith, (1996: 204,290-291, 296).

[85] I had an opportunity to watch and then study ensemble sight-reading during the early 1970's. A friend of mine used to throw elaborate dinner parties to which she invited collections of professional musicians who would have to play for their supper. These players were mostly members of the Boston Symphony Orchestra or local chamber groups, and so played together on a regular basis. The trick of the evening was that they would have no idea what they would be playing beforehand. So the 'concert' was really an elaborate game of sight-reading in which players were not allowed to stop playing during a movement. No matter what it was sounding like, or who was lost – they had to keep plowing ahead. The overall dynamic of these performances had such a singular resemblance to spontaneous, conversational speech in its stress patterns, that I spent many months recreating and filming musical events like these, and then studying the films, played back at different speeds, in order to study these dynamics more closely.

49. Compression and consciousness:

Okay. Now we need rub our hands together in preparation for some heavy lifting as we begin to describe *the vector-scape of the digital mediasphere*. In effect this consideration will push the implications from Chapter 2 of this book through the digitizer: So, we will reconsider parsing – dividing the world into sharable pieces with words, pictures and musical tones – moving this idea from the analog zone of fuzzy edges and relative values, into a new, and absolute universe.

We should back up for a moment here. Since we're trying to describe a vector-scape, we need to map the term to the environment at a more fine-grained level. First off, what is a *vector*? A vector is a description of movement in terms of direction, velocity and duration. Direction typically describes spatial values, i.e. position within the three dimensions of a Cartesian grid. But we can bring entirely different kinds of *directional* values and qualities into play – moral, economic, elliptical-ness, color-space, affective, etc. depending on the aspect of any phenomenon or work we need to discuss. One vector might be as indeterminate as the description of the increase in hysteria over the course of a melodrama as a way of discussing the dramatic shape, or dynamic of a work. Another vector might be as highly determinable as the change in specified voltages over time.

Also, we need to take a closer look at how we use the word *significant* in our upcoming analysis, since it is a key concept in thinking about signal compression – the topic at hand. We described the radical transition from analog to digital as a shift from relative to absolute. Let's say that this shift describes the progression of values in the voltage of a signal. In these terms, when we describe an analog signal, we describe a continuity of values. A digitized signal is one, that by definition, has precisely demarcated values: one data-set per slice. However, while the voltage values in a digital signal may only *operate* in terms of being on or off, *absolutely there or not there* – the world, at least above the quantum scale, is analog – so signal levels cannot actually go from zero to n, instantaneously. They can however make this change at a rate that renders the transition time *insignificant* within the values of the operating system. The shutter in that old mechanical digitizer, the movie camera/projector, can be seen in the same light. That is, we don't really go instantaneously from full light to full black on the screen, the way it seems to us phenomenal slow-pokes. Actually a softly shadowed bar of darkness, sweeps in a line across the screen. So here we see that our description of vectors is determined by the threshold of significance needed in the context of any particular discussion.

Let's start out by just considering the parsing of light. Good engineering suggests that one match the characteristics of the systems between which one wishes to create communications. It should be no surprise, then, that both the analog and digital encoding of mediated light should be engineered specifically to meet up with the values of human visual systems. This simple fact will give us a wonderful window onto possible mechanisms of consciousness, as we'll see in a bit.

The human visual system, starting at the eyeball, is a highly active system. We already know that we fabricate the impression of a static image from a data stream that is in constant flux due to saccadic eye movements. If we cancel out these movements, vision evaporates. Also, we create for ourselves the impression of a uniformly highly detailed world by fusing (somewhere in our visual processing systems) the high resolution of the center of the visual field covered by the fovea, with data of a far lower resolution from our peripheral vision. We also fabricate a sense of coherent horizontal space from data streams that split the left and the right sides of the visual fields from either eye, recombining them at an x-shaped neural intersection called the optic chiasm. Leave it to be said then, that vision itself is a highly encoded process. Obviously the same must be true for the other senses. Full comprehension of these codecs would constitute a full description of the difference between experience and reality – even though that full description still might not get us very far.

Our visual systems also take the continuum of light – from black to white, and breaks it into luminance data and color data, with two different kinds of receptors (or sensors), rods for luminance and cones for color. The color spectrum is further broken down by cones tuned to three different parts of that spectrum – one kind of cone is most sensitive to the red end of the spectrum, another to the blue end, and the third to the green, in between. (One would have to think of this as an analog kind of sampling since, unlike their video counterparts, there is a great deal of overlap in the frequencies of the light waves to which they respond.) The data stream of our visual processing system is also variable both in terms of resolution and in terms of bandwidth, depending on conditions and needs.

The encoding/decoding of the moving electronic image is designed to work with this profile. A component, analog video signal is carried on three wires. One carries just luminance data (Y) matching the function of the rods. The other two wires carry color data matching the profiles of the cones: one carries representations of the energy from the blue end of the spectrum minus the luminance data (B-Y) and the other from the red end minus the luminance data

(R-Y). Values for green are computed from what's left over – data that's arrived at from the subtraction of values from known data – a tricky but very valuable strategy in the world of compression.

The main goal of electronic-image signal compression /decompression is to fit the maximum amount of *significant* data into the minimum space (bandwidth). The job requires knowing what our visual systems take as significant – and being very, very clever with the design of the processing systems or protocols.

When I speak of our visual systems, I don't just mean our eyes and those parts of our brains directly involved in image formation. Dennett's theory of consciousness involves a consideration of neural timing. The intersection of his considerations concerning image recognition and interpretation with those of the video engineer has a great deal to say to us about potential mechanisms of consciousness.

Dennett's perspective, which he calls the *Multiple Drafts* theory of consciousness is counter-posed to a model he calls the Cartesian Theater (1991:101) that presupposes a *center of consciousness*, where all sense data is presented simultaneously. He uses an analysis of a psychological experiment to show why this model can't work.

According to Dennett (1991:114) "The philosopher Nelson Goodman had asked [the psychologist Paul] Kolers whether the phi phenomenon persisted if the two illuminated spots were different in color, and if so, what happened to the color of "the" spot as "it" moved?"

The answer to the question posed a mystery, for it seems that the spot abruptly changes color in the middle of the move. Somehow the brain tells us that the spot changed to the color of the second stimulus at a time we perceive as having preceded the stimulus itself. How can that be?

Dennett's explanation of this is elaborate and fascinating – and ultimately yields his view that, just as there is no center of consciousness there is ultimately no single, "canonical" version of reality. He goes further and says (1991:108) "The idea of a special center in the brain is the most tenacious bad idea bedeviling our attempts to think about consciousness." A little further on, he elaborates:

> According to the Multiple Drafts model, all varieties of perception – indeed all varieties of thought or mental activity – are accomplished in the brain by parallel, multitrack processes of interpretation and elaboration of sensory inputs. Information entering the nervous system is under continuous editorial revision. (1991: 111).

Thereby do we, for instance, iron out the jerkiness of saccadic eye movement into a smooth reality.

Dennett's way of dealing with perceptual conundrums like that of the colored phi experience, utilizes one ferociously complex set of metaphors, and for all I know his other data may demand this complexity. Video engineers have what seems to me a simpler way of handling at least superficially similar conundrums en route to their compression of the digital video signal.

I'll try to make this as simple and as sweet as I can: While the information in a frame of film is encoded simultaneously across the entire image plane and the information in a digital video image is encoded pixel by pixel, we can still think of the individual film grains as corresponding to both horizontal and vertical samples of the image. The finer the grain, the higher the sample rate. The big difference is that in film, all the data for each frame is encoded and presented simultaneously, and in video all information is encoded and decoded serially. (Although as we shall see, not necessarily in order.)

It goes something like this: light goes through the lens of the video camera and then through a prism that separates it into the three component colors, red, green and blue, that correspond to the parsing of the spectrum by the three kinds of cones in the retina. Each of these monochromatic images lands on a charge-coupled device (CCD), which, pixel by pixel, translates the photonic energy from that part of the spectrum into voltage values. These values are 'read' off the CCD in a linear progression, until the entire frame is scanned. For each pixel there are at least three data streams encoding values for luminance and color, plus other, machine relevant information. In order to reduce the amount of data the system needs to handle, various compression schemes have been invented for throwing away 'insignificant' data.

Compression schemes fall into two classes called 'lossless' and 'lossy'. The former allows compressed data to be decompressed to a state *identical* to the data stream before compression. The latter compresses data in such a way that when reconstituted, the losses are *insignificant* in the application for which that particular codec was designed.

If we are compressing even a single still image, we use the same basic strategy that we used in reducing the amount of data that needs to be carried in a component video signal: we focus on differences. That is, if adjacent pixels are identical we don't need to report all the data for each pixel. In fact we may only need to report the differences in data among pixels, reducing the data stream, yet allowing its exact reconstruction upon decompression.

If we are compressing a moving image though, there are two further types of compression used – either of which might be either lossless or lossy. (For simplicity however, I'm limiting this description to the example of MPEG[86] compression.) There is the compression of each frame, as described above, called intra frame compression, and there is the compression that occurs between frames, known as inter frame compression and that uses *the difference between frames* in encoding the information. In order to do this of course it needs some mechanism for comparing the data, not just in adjacent pixels, but in adjacent frames. That means it needs to be able to store frames for comparison. It does this in what's called a *frame buffer*. What's truly amazing is that the MPEG coding loop analyzes the image stream into three different kinds of frames, I-frames, P-frames, and most amazing of all, B-frames – depending on the amount of data in each and the change in the amount of data between adjacent frames. The I-frame or *initial* frame is only compressed with reference to *internal* differences among pixels and is therefore compressed the same way as a still image. The P-frame, however is compressed according to how it differs from the I-frame that immediately *precedes* it . This requires a one frame buffer. A B-frame requires a two frame buffer, since it is compared *both* with the preceding frame and also with the frame that follows it – looking for differences that need reporting, either to provide for reconstruction of all detail (lossless) or of significant detail (lossy.)

Sequential frames therefore are not encoded and decoded by the MPEG compressor in order. For instance, an I-frame (which starts every group of pictures) will be encoded first. Next it might encode frame number four, a P-frame which is compared backward to number one for compression, after which frames two and three will be compressed with both forward and backward reference to their differences from both frames one and four.[87]

MPEG compression requires many frame buffers, lots of parallel processing and a great deal of flexibility in data sampling strategies. Sound familiar?

Well, yes, it might sound familiar – but so what?

Once again, I'll emphasize that my approach is embedded in the belief that an analysis must pinpoint, then penetrate the essence of any medium if we're to understand the possible referential relationships

[86] MPEG stands for Motion Picture Experts Group

[87] If you've been paying close attention, you can already see how this scheme spells doom for the kind of image by image articulation of ideas we were proposing in Part II. We'll tease out some implications of this in detail later, in our conversation about digital economics.

that medium has to offer. Well, we're in a whole new medium here. In fact there's new doubt about just what *is* a medium.

It's no longer just motion *pictures* we have to think about. It's a more generalized and blended kind of information flow that we might just call *moving ideas*, or, if we want to put an economic/evolutionary spin on it as *moving memes*, that is, reckoning them in terms of their long-term advantages and disadvantages.

Our talk about cinema distinguished between pictures and words and music. That's just talk. I think it's both illuminating and humbling to think that, once in the digital data stream, these distinctions vanish. At least on one level – you can't look at a stream of bits and readily separate it into the *kinds* of information we've segregated with language. It's all just the same flux of zeroes and ones. This blendability of words, pictures and music, this plasticity, is an essence of the digital medium.[88]

On other levels, of course there are still many distinctions to be made – the digitized *images* of motion are still being segmentalized – handled as individual frames, while the digitized *sounds* of motion are handled continuously; and with *writing*, the idea of motion remains a solely mental movement, unless the words are animated. But it's both in the *fiscal* and in the *bandwidth* economics of these three sub-media where the biggest distinction remains.

When one considers meaning as mental movement, plotting a general economic vectorscape of the digital mediasphere becomes quite informative: how far any meme travels and into how many places; if it replicates, and if so how fast and how widely, how accurately and across how many languages and cultures. These questions represent one way of looking at the economics of digital memes. Another way of course has to do with real economics, that is the economics of money and not just what we might otherwise call *energetics*. This however represents an ongoing struggle for dominance whose outcome is always up for grabs.

Both of these vectorscapes are changing incredibly rapidly. Whatever I write about either of them now will be unpredictably different by the time you read this.

The economics of *analog* meme propagation contained some sharp curves and steep thresholds. In every medium – print, film, television, music and (with some qualifications) radio, the economic barriers that kept any idea from having more than a very local influence were steep and passage was regulated by well established

[88] I refer to the subject of our conversation this way rather than a collection of *digital media* to emphasize, at this point, the unity of digital information dispersal.

gate-keeping mechanisms in the form of publishing, recording and broadcasting corporations. These thresholds and mechanisms not only determined the range of dispersal of any given idea, they also greatly determined the spectrum of possible content according to typical market vectors.

One could readily sample the end-points of these analog-ensconced vectors through such interfaces, for instance, as the multiplex theater marquee, TV clicker, or a good-old bookstore, newsstand or record shop browse. In all these media, to different degrees, there was a pretty clear bell-curve defining the mainstream. Next to this bell-curve on the vectorscape but separated by a numerical chasm, were those fringe ideas in any medium with a much, much different set of economic vectors and probabilities (fine art, say, as distinct from entertainment, etc.) However, in both of these 'dissemination curves' you could find a steep shoulder in the data. That is, both markets were extremely hierarchical. And although the two curves were shaped somewhat differently and occupied very different real estate on the graph, they could both have been described, (once we'd gotten past this shoulder) as fairly flat bells with a steeple in the middle – where this steeple represented those few memes whose carrying power and centrality was powerful and undeniable (the *star* factor.)

In the digital mediasphere things are moving so fast that even a snapshot of these same economic or energetic vectors is blurred. There is at this moment a big tussle happening on a field where the search engine is goalie at one end and the editor-in-chief, at the other. Also, this snapshot looks very different whether one sees the planet-wide data-pool from an American, European, Middle Eastern, African or Asian perspective. Still, let me sketch some of the obvious economic shifts that happened in the mediasphere when experience fell under the digital microtome.

The most *fundamental* shift put the tools of authorship and distribution in everyone's hands. This directly caused the most *profound* shift: a disconnect between dissemination and economics. The background vectorscape changed dramatically – or perhaps we should say, un-dramatically, since all the curves became flatter with the shift, less hierarchical and more integrated (although those vertical organizers, the gatekeepers, are finding newly appropriate places and roles.)

The analog mediasphere operated according to well-entrenched economic protocols and was a safe, if stifling environment. The digital mediasphere is a dangerous place. You could, while browsing, easily get an ill-intentioned vector through the back of the head. One can be

pick-pocketed, kidnapped, assassinated or tortured if one eats bad data. Both the egalitarianism and the lack of police presence in the contemporary digital mediasphere is, no-doubt, a temporary thing. The human hand of order-through-hierarchy will, most probably, come to shape the digital mediasphere into a somewhat less unruly (and less egalitarian) environment eventually. But until it does, neutral students and observers who stand behind the safety rail can get a truly wonderful overview of the entire furniture floorshow of human disposition, in all its cultural and moral flavors.

One bit of fallout from the disconnect between traditional economics and the propagation of memes is the overall shortening of the *author originated consideration* vector – truly *considered* writing is coming to have a unique status. And from the perspective of the subject – some people believe that the proliferation of media has fractured the continuum of contemporary experience and redefined attention spans.[89] Immediacy of communication along with the temporary evaporation of the gatekeeper function, and the substitution of the keyboard for the audio transducer (microphone/loudspeaker) as communications interface, changed the nature of language both written and spoken, both within the digital mediasphere and in the world around it.

The practice of using writing for casual, intimate, but near-immediate verbal intercourse has uncovered yet another symptom of the dearth of affective meaning within the constraints of syntax and semantics. It's the same set of limitations that you've been hearing me whinge about. People often seem to forget that casual prose, without the guidance of *tone of voice* or *rhythm of delivery*, is often interpreted very differently than was intended; and with just enough response-time-lag such that error propagation is more likely than error correction. How many of us have participated in these email or instant-message loss-of-inflection misunderstandings?[90]

Digital *keyboarding* has also brought with it an acceptance of generally ill-considered prose. Not only have external editors been 'off-ed', but the internal editors have been put to sleep. Cut and paste functions of word processors, along with the ease of electronic publishing and market changes in the publishing industry have made meme transmission a more plastic business, but has allowed the

[89] David Marc in is a most astute proponent of this view in his hilarious book, *Bonfire of the Humanities: Television, Subliteracy, and Long-Term Memory Loss* (1995).

[90] Facees have flooded in to fill this gap, but I've never been able to get myself to use them – they've always reminded me of Ken Jacob's dictum: "The only crime worse than murder is *cute*."

introduction of inadvertent redundancies and 'sensical' typographic errors into 'published' manuscripts. The distinction itself between 'published' and 'unpublished' has become less clear and less significant.

There are certain pictures that we can think of as memes, as noted, the picture of earth from space is a specific meme having widespread implications. The skeleton or cut-away view, is a style of graphic meme having both general and specific implications: "Oh so we can relate the inside structure to the outside shape of anything with *this kind of* drawing." Or "Inside the wing of *this* airplane there are rib-like structures that can be used to strengthen similar structures." Melodies, rhythms and other musical tropes can become memes, both as themselves, and as examples of a style of expression that itself can be elaborated upon, or fruitfully varied. Styles of expression themselves can become memes.

As we've seen, we can think of all digitized information as one medium, or we can think of each of the modalities, picture, sound etc. as media unto themselves. We can also think of each of the various propagation channels as a different medium: live media, recorded media, interactive media, or even finer grain – TV, DVD, movie theater experience, cell phone, text message, etc. How we ultimately parse feature bundles into what it is we consider to be 'a medium' is under strong evolutionary pressure along with everything else. The target is truly swift.

50. Indeterminacy of translation revisited and context reconsidered:

Context operates on two seemingly unrelated scales in the digital mediasphere. The first is a brief conversation: If the world is to be recreated by stringing together beads consisting of one of two values in a linear fashion, then it is the *arrangement* that really carries the signification.[91] Context, in the ever more widely rippling and ever more coarsening granularity of binary repetition, is how the machine reads meaning. (Is there a zero between two ones, two zeroes, or one of each?) Meaning is machine movement! You can't ask for a more tightly stipulated arrangement than that.

The other end of the scale is a far more rambunctious conversation: What is the impact of context on how these media mean to us – and what is it that we are considering to *be a medium*?

[91] When put this way we can see that this condition is not so dissimilar to the marks on paper that add up to either an alphabet, or an ideogram. Ink on paper is also a kind of binary encoding. Either there is ink, or there isn't.

As Quine famously said, "We cannot know what something is without knowing how it is marked off from other things. Identity is thus of a piece with ontology." (1969: 55). All of a sudden the analysis of context becomes really slippery. For instance, just to take a relatively simple example, the digital written word itself isn't really just one medium. It's found embedded in pictures, in graphics, and in videos etc., to frame the issue one way. To look at the context of the *digital word* from another perspective, it's found in news and in reviews; in the historical record as well as in blogs. It's found in fact pretending to be fiction and fiction pretending to be fact, in seriously reasoned argument and throwaway conversation. Credibility is newly up for grabs. Even words inked on paper, are almost universally digitally mediated, and who is to say how much signification gets lost? Even signatures are digitized as a step on the way to being eliminated entirely for being too machine unfriendly.

It's even harder to specify the contexts for digital audio encounters. Even if we're just talking about voiced verbal content, we wind up quibbling about machine synthesized voices that pass for real vs. real voices that sound far more synthetic because of the stringency of of the compression. I'm sure most people remember the first time they saw someone in public apparently talking to themselves on a hands-free mobile phone. The ability to talk to anyone at any time has become a part of our expectation: the hands-free phone is a meme. Digital audio is another realm embracing many 'media' – proliferating both in kind and in ubiquity. As these media proliferate, the idea of context becomes ever more nebulous.

The relative *cultural* impact of the context in which a message is received and processed is likewise a topic for endless disssertation. The boundary between our real material surrounds and the immediacy of a digitally mediated reality seems to me far hazier in Asia than in Europe or the U.S. In Asia, lieutenants will routinely take cell phone calls while the boss is talking during an important meeting; Asian students do the same in lectures and film screenings. Even the moving picture is unbound in Asia. In Shanghai by 2007, video screens containing vast mixes of content were everywhere – a part of the landscape – whether it is the animation on the cellphone of the person next to you on the subway, or a video advertisement used as background on the electronic touch pad that serves as an elevator call button, not to mention in the elevators themselves and in taxicabs and restaurants. Even the sides of skyscrapers throughout the commercial districts were crammed with pixels flashing utterly integrated combos of moving pictures and words. Special video-barges cruised the Wangpo River at night, the city all vibrant and ablaze with a

symphony of big-pixel and little pixel images – moving together with that remarkable and peculiarly Chinese quality of chaotic harmony – some Chinese characters, some English words, some Chinese words written in English characters, some English words written in Chinese characters. Where mediated information was once in a class of its own, in an ever more urban world the distinction between the mediasphere and the simply lived life is getting hazier. And like with the atmosphere, China seems to be in the lead.

So in a world where everything, everywhere is a-crawl with moving images, what is meaningful and what isn't? Let's think of this question from the perspective of a couple of different terms: intention and translation. They are both terms whose universality and global nature have come to the fore in a digital mediasphere.

Imagine a primitive and natural setting. The creatures are sleeping. The air is calm. There is nothing moving… then something darts loudly from the periphery to the center of our visual field. Well, it gets our attention. The conditions are perfect. The signal to noise ratio is about as high as it gets.

Now let's imagine this as a baseline in plotting a communications circumstance. The vectors describing the shift of our attention toward the movement cue, though direct as can be, are, on a fine-grain level, a bit staggered in time. Threat detection kicks in first – it seems hardwired. Risk assessment, followed by response evaluation kicks in shortly. Somewhere between risk assessment and response evaluation we have the key and crucial ingredient: recognition. First, is the movement a something, or is it a part of something, or the symptom of a something? Response evaluation may mark the first appearance in our full awareness of the movement. It's at this point that intention is either imputed to the object or to the subject: Does it want to eat us? Do we want to eat it? Whatever it is, it is right at hand. Intention (either ours or theirs) conditions vector formation within any given context. Context here can consist of circumstantial conditions like signal to noise ratio, or subjective conditions like degree of hunger or fear, as well as expectations that relate to either of the above. Translation is hardly a factor in this case, unless our early recognition attempts fail if, for instance, we've never seen anything like it – whatever it was that moved.

Now let's sketch out a case on the opposite end of the spectrum, and see if we can develop, and then elaborate on, a terminology that will take away at least a bit of the indeterminacy of categorization that makes analyzing the relative contributions of fabricated data and natural data, intention driven data to data that is simply incidental in our perceptual sphere, so slippery.

I am in a subway station in Shanghai. I don't speak Chinese. It is rush hour. An automatic ticket machine is in the wall beneath a map of the subway system, and located next to the automatic machine there are two living attendants sitting behind glass – who may or may not speak my language. The ticket machine has the familiar touch screen GUI, but all the button labels are in Chinese. I have never been here before and I have only two bits of information to guide me. One is the phonetic pronunciation of the name of the intersection I want to go to, and that I have memorized. The other is a card with the name of that intersection written in Chinese characters.

While trying to decide how to proceed amidst a throng of noisy commuters, many of whom are scurrying along with cell-phones to their ears or peering at the screens with their thumbs adance, I search the GUI in the vague hope that I'll be able to spot a match quickly between the characters on my card and some characters on the GUI. I realize that I don't know where to begin, and just as my frustration level begins to blind me, I notice a button on the top right of the screen with characters in the *Roman alphabet*. I recognize them. They say: ENGLISH. This, of course within the context of knowing what a touch-screen is and what a 'button' is. I press (touch) the button. The screen translates, and I sort out the Romanized pinyin characters that correspond to my memorized phonetic pronunciation.

The screen tells me, using Arabic numerals, how many RMB I have to pay to get there from the stop I'm at. There are also Arabic numeral denominations on the bills. A cash slot looks like a cash slot and has what looks like a change dish below it. Beyond the turnstiles and throughout the station there are color-coded signs with Arabic numerals on them specifying the level and platform from which to board the appropriate train. The map also tells me how many stops to ride.

This blend of analog and digital media reflects an engineering intentionality that has been very well worked out here. Many aspects of this entire system may be considered as its GUI. In fact the interfaces between the digital communications that allow all these machines to talk, both to one another and to us – have become so ubiquitous in an urban environment, and so part of our expectations of life, even in many rural environments, that we no longer make the distinction between medium and environment in quite the same way we used to. Context itself, therefore, becomes a question of intention: what do we want to accomplish by specifying x as the context for y?

Likewise, while in the subway, we wind up imputing intention to the entire environment – the complete layout of the place, including media types and placement. After all, this layout, with its various

controls, was designed with the intention of getting people – mostly natives, but also a few tourists, to their intended destinations.

With media messages becoming so ubiquitous as to comprise entire environments, and becoming as nefarious statistically as any other part of the environment (or more), learning to assess the intent of a message at a distance, has become a common part of the contemporary toolkit. And since beneficence or harm can come anonymously from the other side of the planet as easily as from the immediate neighborhood, sussing the intent of a message from its external wrapper has become as automatic a part of our perceptual criteria as recognizing *snake or stick.* In fact, in the digital mediasphere the very idea of *neighborhood* has been become curiously plastic.

Since the mediasphere is pure artifact, intent is ever present. Also, the mediasphere is almost entirely interactive – to one degree or another. We might even need to make this distinction: there is a mediasphere that is under our control – we can at least turn it off or on, attend to it or not as we please or conditions demand, and then there is a peripheral and impinging mediasphere that is presented either as a part of the environment (buildings and barges that have become media screens, recorded security alerts at airports – or ancillary to other media information like pop-up ads, etc.) And since the mediasphere is planet-wide, translation is a consideration at many, many levels.

Let's hit two of the bottom-level touchstones of this essay: 1) We are trying to understand something about communication by comparing language with other media; and 2) communication is a process of seizing someone's attention and then moving it – through progressive shifts in context.

The economics of the digital mediasphere are predicated on the ability of producers to parse users into target markets. As channels of communication proliferate, it makes economic sense to parse ever more finely, until communications come to seem highly personalized that actually, at a boilerplate level are massive broadcasts. Who I am, under this light is a data set, and how to reach me, how to grab my attention has been studied. The people in my 'neighborhood' are the people whose data sets most closely match mine (as seen from the perspective of any particular hunter) those people who own the same products and use the same services, wherever in the world they may dwell.

I'm going, once again, to borrow a pair of closely related terms from Quine: *indeterminacy of translation* and *inscrutability of reference,* in order to link intention and translation in my analysis of

how I suspect the proliferation of digital media will influence the evolution of language and thereby, the evolution of consciousness – that is, how the mediasphere serves as a backdrop for the memosphere.[92]

In the first part of this book we noted that there is a difference between corroborating the success of a reference and the accuracy of a reference. Successful reference is easy to corroborate, as we said: the communication proceeds. Accurate reference is much harder. Judging the accuracy of a reference depends not only on agreeing on what measures to use, and how stringently to apply them, but also actually checking on the correspondence. For many kinds of reference in ordinary verbal communication, accuracy has to be assumed on the short scale, with further judgments deferred – we just don't get around to checking up on everything. The inability to correlate the speaker's intended referent with the listener's assumed referent on any absolute level is (what I take to be) Quine's inscrutability of reference; and here we should note, the slop that naturally occurs within any given language is exacerbated as we move to any other, across a scheme of translation.

This, at any rate, is how I'm suggesting it goes in language. How goes it in the digital mediasphere?

First, how do we corroborate a successful reference? Well, here we have a big difference.

So far we'd been looking at this question from the point of view of the listener, the receiver, the processor of the communication, an individual who then acts responsively to determine success or failure of continued communication. At any rate, this is how it goes in the specialized realm of consensual interpersonal communications – a small slice of the digital mediasphere and getting smaller. Still, within this little slice, the rules are not so different from casual analog chat – though they *are* conditioned by being such a tiny part of a general communications environment – one where the number of irrelevant and unwelcome calls for attention outweigh all others, and where any expectation of focused attention must be assiduously guarded.

Since there are manifold simultaneous channels, we are expected to multi-task and to opt in and out of channels at will. The idea of *reference*, whether successful or accurate or not, whether stipulated, specified or implied, no longer seems an adequate term outside the tiny, consensual and interpersonal slice. It is simply too analog. In the

[92] I beg, in advance, to be forgiven for any damage I inevitably do to the integrity of these terms from Quine's point of view, as I bend them to my needs.

impersonal sectors of the digital mediasphere there is a term that subsumes *reference*, a much more digitally appropriate one.

The *connection* precedes the *reference* when the boundary is couched in the terms: *off and on.* This is the terminology of the machine world and alerts us to the way the paradigm has shifted its focus from human styles of communicating to machine styles. Remember that the nature of a communications system determines its form and that the nature of this system is binary. Connections are binary. At the human interface, the unit of meaning is the *double click*, the automatic signal of a successful connection. Any further clicking or mousing around that leads to a positive response could count as an accurate connection. That is, the intention behind the design of the interface is borne out by the either/or decisions encoded in any return messages. It sounds dry, but people have sex this way.

In the machine world, neither inscrutability of reference, nor indeterminacy of translation has any place. BUT as of now, the interfaces are still too crude, and our general experiences of them (for many of us) still too new, for us ultimately to be helped by a clean codec's capacity for sorting through the messy ambiguities of our lives. As digital channels come closer to approximating face to face communications and gain those shades of meaning that were rendered insignificant in the poorer channels, the subtler affective signals that make messages successful and accurate on the human level, the various kinds of *references*, get woven around the protocols of *connection*. But the crispness of the decision making process as to whether an interpersonal communication will be accepted, rejected or hidden from – that, along with the universality and ubiquity of digitalk has changed the protocols of inter-visitation quite thoroughly.

51. The reconfigured attention span:

Okay, now where were we? A funny thing happened on the way to the studio… many funny things, actually… In the beginning of the 20th century a way of articulating pictures at a high rate joined a slender media parade. As far as the reach of this new medium was concerned, its lack of portability set a paradigm for consumption that lasted not much more than fifty years: *we went to the movies*. When television *came to us* many would argue that the impact of the moving picture medium shifted its relationship to consciousness – from being a separate world to which we could all relate as another repository of common culture, like literature, newspapers and magazines – to being a part of our intimate daily lives, like electronic family members. David Marc writes (1984:135)

> The lives of the vast majority of Americans born since the defeat of the Axis forces have been accompanied by a continuing electronic paratext to experience. This shadow memory is interactive with individual memory; it provides images that function as personal signifiers (e.g. the music or TV show that played during a certain sexual experience) and at the same time serves to document and redocument collective experience.

This wasn't the first medium to move into the home, not the first time media input has turned into furniture. Books, newspapers and magazines had crept in that direction and radio had slid in beautifully through the front door.

Radio was, of course, the true harbinger of the digital age. Communications over a long distance at the speed of light began with telegraphy, which first used Morse Code, a binary code that became a planet-wide protocol. The crucial shift happened when Morse Code went wireless. The linearity and one-to-one-ness or *address simple* character of long-distance communication was replaced by a broadcast model.

In only a few years, suddenly that is, it became possible to contact and communicate instantaneously, planet wide. At the time, there was nothing wider than that. What a meme! However, there was a significant change in communications vectors, which required that new addressing protocols had to be devised. Remember Quine and his remark about individuation and ontology – an address protocol is no small thing. The fact that the radiosphere was available to governments, businesses and individuals alike, made its debut as a universal medium roughly parallel that of the telephone. The important differences between the two had to do with the linearity and semi-private nature of telephones – wherein a discreet address system could function with relative exclusivity vs. the broadcast nature of the radio environment. Also, there was a knowledge threshold for a private individual's entry into the radiosphere: a knowledge of theory and a knowledge of code. The fluidity with which one translates thought into language and language into Morse code are signatures. The latter speaks of one's seniority in the community, the former speaks to one's individuality. Soon, one begins to recognize a neighbor's 'fist', their handwriting by waveform, all the musical values that supplement semantics and syntax.

Well, clearly bandwidth has increased, and protocols on every level have multiplied like virtual bunnies. Nonetheless, the essential vector-landscape for the digital mediasphere got laid out in the protocols of the early amateur radiosphere: the bare-bones connection protocols; the techniques for attention getting and individuation, the

communication of affect through distinctive musical values. But perhaps the most potent contribution of this early time in mediasphere history is the distinct kick-in-the-pants that global communication gave a peculiarly technological style of innovation. This is the collaborative/competitive invention style that has become the energetic signature of our age.

Radio, in those days was as hermetic and experimental a medium, in many ways, as early experimental film. When radio emerged from its cocoon and became a popular broadcast medium, it achieved, in the immediate circumstance, a unique capacity for shifting our attention and, from a historical perspective it began a new phase in the fragmentation of continuity in our lives. Just as the ubiquity of radio waves has influenced our expectations, so our sense of the present has been permeated by fragmented consciousness and dismembered flux-of-being. The young among us have developed styles of information handling to meet this change in circumstance. We have evolved. Our consciousness is newly equipped. We throw up *ad hoc* fences when and where we need them.

The only frame that separates a contemporary radio broadcast emanating from a loudspeaker from the 'natural' acoustic environment, is its signature signal quality. As signal quality improved even that frame disappeared. Radio is a medium that very easily blends with life. When radio came out of its cave in the age of transistors, we suddenly had to learn to integrate the intentional messages from another place (and maybe time) into the stream of intentional and unintentional messages from the here and now. Television, in contrast, was bounded by a box – it came with a frame.

As soon as was technologically feasible radio became portable, and because of the blendability of acoustic information, portable radio took off right away. Portable video took a while, for reasons technological, economic and phenomenological. On the phenomenal level, I would argue that we needed to evolve through a couple of quick steps in our ability to bind an attention span that had been fragmented by multiple, and ontologically distinct information streams. We had to subtly reorder our perceptual gatekeepers to accomodate a newly organized flow of information from and about the world so that it once again felt comfortable and coherent. As I've been harping from early on, when one looks at the dynamic aspect of communications one sees the human dispositions that allow us to develop and adapt new languages, like we would any other new toolset. We have learned to read across the boundaries of real and virtual worlds, without missing a beat. We have almost effortlessly

learned to swim in a sea of competing media and to breathe moving pictures. As usual, the young learn fastest.

52. The synergy of the mediasphere:

When we charted the fuzzy vectors of reference that occur in poetry relative to the straighter, shorter and less resonant vectors of simple prose; and then again when we discussed the synergy of the vectors of reference that occur among words, pictures and music – we were talking about a singular and isolated *set* of energetics. Within that set, the flow of reference went from the inventive power of the author's mind to the inventive power in the mind of any particular member of the audience. Initially, the two participants in this loop are communicating in a well-synchronized pattern. The flow of information from author to audience member is structured with enough ambiguity and polyvalence to suggest the decoding of an equivalent, but potentially very distinct richness of reference. When audience members reflect among one another on their experience of a work, the power of reference begins to operate on another level of synergy – the demographic, as the poetic sphere of omnivalence expands into a more social dimension.

This is a kind of collaborative invention, and it precedes at whatever pace the feedback mechanisms of the medium allow the collaborators to engage with one another's relative passions. The internet, the current backbone of the digital mediasphere, was invented to facilitate collaborative invention, and collaborative invention has become, if not the bread and butter, then the stick and carrot of the world wide web.

Now that the feedback mechanisms are instantaneous, the roar of collaborative invention is a constant undercurrent in the mediasphere and fresh new memes are piling up at a dizzying rate outside the gates of our belief systems.

The evolution of the web based, interactive, multiplayer game is a splendid example of many things: the explosion of collaborative invention; an entirely new medium for organizing thought; an amphitheater for the expression of personal and group emotion; and of a prolific meme factory in its own right. Code writing and hacking is a still more basic medium of collaboration as well as a busy, if not frantic, arena for the generation of memes and meta-memes. Scientific, military, economic and cultural data sharing makes the web an incredibly rich medium: of global adventurism for the power-hungry; of experiment design and implementation for physical scientists; as a window into sexual demographics for the anthropologist; of financial connection and marketing schemes for the

fiscally ambitious; and interactive art works for those hungry for pure resonance. Multimodal, instantaneous feedback has, more importantly than anything else, produced many new styles of thought, all of which are subtly and differentially characteristic of the medium: lots of multi-tasking, parallel processing, data comparison via buffer states and endless revision. And one gets the feeling that the orchestra is just warming up.

When, in the frenzied audience of a pop music concert, fans all hold their cell-phone-video-cameras over their heads, beaming the miniaturization of the experience around the world, we can get a great snapshot of the vectors of collaborative, cultural invention growing out of the human need to share experience – perhaps the most basic of all language functions. They are not only recording and sharing the concert and helping its impact perfuse their society, they also transmit the images on the cell phones held up by the people in front of them, adding the weight of consensus to their enthusiasm. This is the instantaneous groundswell of digital democracy. It is a unifying and synergizing force, one of many. But there are losses as well. There must be. After all, though the 21st century has brought the world-wide-web-edness of thought into cultural preeminence, it has also brought an unprecedented fragmentation of opinion, and reified long-simmering social, political and spiritual diseases.

David Marc has chronicled the history of how market forces help drive social fragmentation. He makes the distinction between general interest markets and target markets and points out that when radio took over the general interest market from magazines, the magazine industry became more oriented toward fractured, target markets. The same thing happened to radio when TV became the general interest gathering ground of American culture. (2006:1)

> For most of the 20th century, the American communications industry worked at building audiences of unprecedented size in order to take full advantage of the new production and distribution technologies at its disposal. Its most extraordinary accomplishment was the creation of a body of "general interest" content that routinely transcended traditional cultural divides of education, income, religion, ethnicity, age, and region…
>
> … With mass diffusion of satellite cable service, general-interest appeal became a secondary concern for much of the industry, thus ending the (classical?) "age of mass culture." The entertainment-industrial complex that dazzled the world for a century by attracting "the undifferentiated mass audience" has since worked to disassemble its prime creation into as many differentiated

> segments as marketers can imagine for advertiser-audience relationships.

That analysis of 20th century television just marks the beginning of the fragmentation of both production and audience in the mediasphere. The communications industry itself has, on the one hand, formed up into a handful of centrally controlled juggernauts, wherein one finds the synergy of centrally controlled cash, and on the other, has devolved into swarms of cottage industries – fueled by some new giants in the communications world: the producers of authoring software; meta-tools for the people.

A new tool is a paradigm case of a meme-spawning meme. The design of the tool influences the design of the product. In this case, the product itself is a suite of tools for facilitating both communications and interaction. For the most part, these tools are meant to be used by anyone. The degree of cultural leverage that is in the hands and minds of authoring tool inventors and GUI designers in shaping the synergistic relationships of the mediasphere is breathtaking. They are setting the parameters that are shaping an otherwise unbounded freedom: the freedom to mix and match communication modes in the same stream. In the process, they are facilitating a new, spontaneously and organically evolving, multi-modal language – a multi-modal language that will have all the referential styles of its constituent media, as well as the many new styles that result from synergy among modes and styles that have not been invented yet. It seems pretty certain that we will invent them together.

53. The search engine and the editor-in-chief:

So, how is information organized in the digital mediasphere? How are relationships organized? How do we organize our *use* of the mediasphere? Let me count the ways… but first, let's get on the same page with a bit of recapitulation.

Our goal all along has been to develop a perspective from which we could talk about meaning with equivalence among media. Our strategy involved a shift in perspective along with a massive simplification. We decided that we were going to look, not at the *terms* of reference, but at the *processes* of reference and then describe them in a way that was so simple that we could find it applicable and useful in talking about making meaning with words, pictures, motion pictures and sound media. In the first two parts of this book, our primary considerations constrained the idea of meaning to what went on between an individual work and an individual audience member. However, we did push the edges here and there to extend the idea of

meaning further – to something that could also bear on the internal relationships within a work (such as our description of the concept of omnivalence). We also pushed the idea to include relationships that are external to a work, e.g. secondary relationships among audience members, and to cultural resonances among works in a genre – 'the ongoing conversation of art.'

As we went along in our descriptions of kinds of meaning, we covered a range of possibilities – from meaning by specification of the strictest sort, to meaning of the most vague and ambiguous sort. We could get along in this discussion because 1) we were not being especially stringent in our demands to actually describe any vectors of meaning beyond such basics as long, short, direct or oblique, definite or indefinite; and 2) we had a constrained venue of consideration – ultimately focusing on the protected dark of a movie theater.

It's true we noted, in our discussions of *Fire of Waters* and *The Ogre,* among other places, that the process of 'becoming meaningful' often extends, in time, beyond the end of the physical stimulus. For the most part though, until now, our speculations both about vectors of meaning in general, and vectors of specific kinds of references in particular, took place, we assumed, in the constrained and serial environment of that dark movie theater.

However, before we can begin to describe even the simplest imaginable vectors in an environment that can theoretically include any creature, sentient or not[93] with access to an interface of any kind, in a time flux that allows for near instantaneous rates of information exchange, we really have to get our bearings. This could be just as big a job as describing all the rest of life, or for that matter, consciousness, (except for one ace up our sleeve, and later for that) we only have to figure out where to start.

First, in order to keep some semblance of clarity I'll divide my description into three perspectives and consider the digital mediasphere from first person, second person and third person points of view – but not quite in that order. Second, I'll make the distinction between fresh, frozen, deep frozen and ancillary media. Third, I will distinguish between only two kinds of reference – the ultra simple on one hand, which we decided was not really a reference, but a connection, and all others, like stipulation and the fuzzier ones like evocation that we described in detail earlier.

[93] Here, I'm not only counting bots, viruses, creatures with downloadable tracking devices and robotic reporters from earth stations as well as outer space, but any sort of accidental input or crosstalk.

The first person perspective involves the way *I* see things: how the mediasphere extends *my* senses – how it lets me see and hear and read things from other places and other times; how it has augmented my memory and given me the amazing cognitive aids that I've demanded of it – like being able to visualize and draw objects in three dimensional space, or visualize the morphing of one face into another, or to find, at will, a string of symbols in a text, etc. The first person perspective encompasses the mediasphere as extension of self. I can also pluck from it and adopt the first person perspectives of others who digitally document their daily adventures from a first person point of view and share them online.

The first issue for the first person is the interface. As it is for all the players here, the essence is *the option*. I am active. I get to choose – so besides needing to think about the system's output devices in terms of my own modes of reception and interpretation (am I reading, watching, hearing? etc.), we need to consider what the various input devices have to offer the processes of interconnection and/or reference.

Theoretically,[94] there are no limits as to how we can wire bodies to interfaces – that is, we can interact with the mediasphere at least as diversely as we interact with the rest of life. The development of both sensory and motor neural implants with wireless device control blasts both the ontology and the epistemology of mediation into an entirely new realm, making the concept of *the screen* indeterminate in a truly provocative way.

Actually, there is one interface that even precedes *the interface* in defining my interaction. That is, am I online all the time, or only on demand? Do I need to interrupt *life* in order to participate in the mediasphere, and to what degree? The real question here has to do with how much of an intentional barrier there is between mediated information and me. Can I look up from my dinner and see an open

[94] In the first decade of the 21st century, the one significant interface constraint, especially in the area of live media interactivity, lies in the all-essential component of feedback rhythm. One part of my individual identity, one aspect of my human signature is my tempo – my tempo range, really. It is something that describes my musical essence in conversations, or during bouts of creativity as, for instance, in how I move through the process of cooking a dinner, or how my stride hits the ground. My personal rhythm, of course, constantly adapts to the situation – I key my pace to that of my conversation partner, to *their* musicality. Currently, however, there are distinct inequities in response time when talking with the mediasphere, and from a very strictly first person point of view this has created an 'indeterminacy of musicality'. Even though it is not a pervasive condition, nonetheless as a condition, it has pervaded my expectations of online intercourse.

and refreshed web page, or am I going to my GUI with a strong intention to find or do something in particular? In the first case, if I simply shift my glance in an idle moment and encounter a fully formed and graphically rendered expression, it is to the manifest intentionality of some other creature/corporation that I respond. In the second case I am actively sorting – albeit, through pre-defined algorithms and criteria. I am making judgments and acting on them.

This is the ace up the sleeve, and where second and third person perspectives bump up against the first. The only reason that the job of describing the vectorscape of my relationship with the mediasphere is easier than describing the vectorscape of my relationship with my life, or the vectors of change that produce consciousness, is that every move I make into and out of any page is log-able. And in most cases someones or somethings, somewheres are logging it. Therefore, this is one very precise way of describing how the mediasphere is organized from my point of view: follow the trail of my clicks (or any other input stream you choose.)[95]

If you do, I'll bet that you'll discover a clumping in data sought, data used and vectors in and out of frames. Not only is this clumping a manifestation of the predisposition we have for finding likeness-in-difference, but even just calling attention to it presents an opportunity for me to express my disposition towards the very idea of grammar once again – this time from a slightly different perspective – one illuminated by structures inherent in the mediasphere itself.

The current drive among linguists to find deep structures and a universal grammar approaches the question of what a grammar is from a direction I have always found disturbing. I don't deny the possibility of coming up with useful connections by looking at behaviors and then imagining how rules might describe those behaviors. However, rather than looking for the *structures* defined by those rules, I would look for the *dispositions* that promote habitual language behaviors (in forming sentences, for instance) and ties them together. You could look at the trail of clicks and other serial input I offer to the mediasphere, and after a long enough time you could discern characteristics not just of my range of interests – my 'semantics', but also of my 'syntax' – the way I characteristically go about solving a problem by organizing my searches and forming my thoughts. What one could not discern would be much about 'the

[95] Speech recognition software provides 'click-tracking' of a highly mediated sort. It remains to be seen whether the data we could get from back-tracking through these machine-programs would be useful - or would be even more confusing - requiring still another scaffold of interpretation.

rhythm of my thinking'. Likewise, one could compare the click trails of any imaginable set or subset of users and come up with analyses of clumps of actions according to linguistic parameters one hopes will be productive. These descriptions however are not rules. No one tells me I have to proceed in my inquiries the way I have in the past, and the way other people do (beyond what the structure of the medium or the software itself dictates.) They are simply descriptions, descriptions of habits – from which we can perhaps interpolate something about the dispositions that underlie them, along with a side story about the various deviations I might make from more habitual trails of action.

In this light, one could think of the constraints imposed by software design as analogous to the rules of a language and postulate that in order to function at all we ourselves would need such an underlying structure in our daily use of language. What we can see, though, from watching the evolution of feedback mechanisms in all areas of the mediasphere, is that the tools respond quite quickly, changing to accommodate patterns of use. So, we see that 1) the rules are always changing and 2) the process shapes the structure. In the end, it may turn out that *grammar* or *rule* are just bad terms for us to use while trying to describe the regularities in language patterns.

These days I enter the mediasphere most often through a simple relationship with my word processor. I input keystrokes and slowly the screen in front of me fills up with orderly rows of type in the font of my choice. But, oh no! Suddenly, the software does something unpredictable, like changing font or line spacing in the middle of a page. Or, almost as bad, it does something predictably untoward that I do not know how to change, or even how to find out how to change because I cannot figure out how to describe it to the search engine in the help menu. All of a sudden, the nature of my conversation shifts and I am no longer in harmonious rapport with other layers of my own being. Instead, I am dialoguing with the medium – I am dialoguing with a different unknown – the designer of the tool: the over-clever idiot that introduced some new marvel of capability to my solid old compositional voice – and in the process, strangled my thought.

I say: "Aargh!" The machine doesn't hear me (yet).

I enter my document by double clicking an icon on my desktop (how quaint this will sound someday.) Other intentional moves will require an external address. Here is a boundary to consider: Within the mediasphere, there is my private world – a lot like the old analog mediasphere in many ways; and then, there is the world out there, all those third persons, individuals and corporations who have built the intent-filled world I enter. In the mediasphere there is the 'me and the not me'. As soon as I cross that line, everything changes. I no longer

know what to believe. Online, everything is a fabrication. Not only is there no intent free zone, but also there aren't a lot of good tools for assessing the beneficence of intent that one will encounter. Therefore, judgments about trust-worthiness or credibility have to proceed along the lines of how we've always made those judgments, but with new handicaps: We'll suffer from the narrowness of context that happens with any drop-in visit, but also we are robbed of natural face. Instead, we have fabricated face, perhaps the face of a search engine, perhaps that of a gatekeeper. And, part and parcel with that, we don't have trustworthy tempo cues in our judgment of sincerity. We still do have style, however.

Websites currently sort into stylized and not stylized, and generally represent the two ends of the organizational spectrum: plain search engine addresses and stylized gatekeeper addresses. Both of these pages are pass-through destinations. The significant distinction is in the encounter between two different 'intentional stances'.[96]

The graphic and literary style of an interface or page has some of the weight that the musicality in a voice has in radiating trustworthiness, credibility or sincerity. Even though we may realize that the style's 'sincerity' is akin to the sincerity in an actor's voice, we may not be able to totally escape its influence on us. The recognition that an address may be a bogus destination, or even that a return address on a communication may be bogus as well, is a current condition of our web consciousness just as much as the potential for an oncoming car is a usual content of consciousness when stepping off a curb. Trust in our first impressions is modified as we step from interacting with the frozen, like a trusted software program, the deep frozen like a data archive (either personal or public), to the somewhat fresher world of an interactive website; or to the quite fresh encounter of an instant message or video-chat. Each has unique existential and presentational qualities that make us modify our relationship to our acceptance of them at their face value.

If the first address we encounter en route to some needed information is a well-trusted search engine, we are already encountering some degree of editorial expression – but of a relatively limited (though usually inscrutable) kind. Here, information is ordered according to the design of an algorithm that someone devised to streamline our search – according to their criteria for deducing its

[96] Dennett uses the phrase extensively throughout his work in a way that is far more precise and in the service of a different set of ideas - but I don't think our uses are inconsistent. The context in which the uses occur, his and mine, influences where you will want to go with the term.

relevance to us, or their criteria for deducing its relevance to them; i.e. some commercial clumping factor. The search engine page, however, is typically much less stylized than the pages to which I am subsequently likely to be referred. With gatekeepers – who are occasionally at least partly still human – we form relationships that are something like the relationships we form with other people online and that we have formed all along with various non-digital media sources. We let them do the clumping for us – and not just the clumping, but the sifting that is presupposed in any clumping. Market analysis, on this level, is vector analysis.

Depending on one's attitude toward gatekeepers in general, and towards specific gatekeepers in particular, one can regard the evolution of the mediasphere and its interlaced memosphere with different degrees of optimism. It's very important to emphasize, however, that search engines already represent a degree of editorializing. Also, this same sort of quasi-mechanical editorializing is present in many of the interactive features of destinations designed with more peculiarly human invention. Interface design, a medium unto itself, is the art of blending intentionalities that are more and less machine-mediated.

Not all gatekeepers behave like editors. Most actually behave like hawkers. Nonetheless, from my point of view they are all third persons. From their point of view I am a third person that they mostly would like to promote to the second person. That is they would like to cull me from a mass and engage me as a *you*, and any attempt at a detailed analysis of *their* way of organizing the digital data flow moves us immediately into the field of market analysis, where I will not trespass. The most interesting kicker in the realm of the third person is that there are third persons with no human first person perspective – the inanimate *them*: the bots, webcams, worms and viruses, etc. of the digital mediasphere.

The second person mode of address is somewhat more interesting, and is perhaps in as great, or even a greater state of evolution than the other two personal perspectives. In this global medium the boundary between the known *you* and the unknown *you* can be quite uncertain, even mercurial. It's an area where mechanical address protocols are incorporated into the message in many cases, and formal address protocols don't seem to have achieved any global consensus. For English speakers, without the equivalent distinction of say, *Sie* and *du*, *Vous* or *tu*, there is an additional disadvantage in knowing how to formulate the appropriate second person address in the atmosphere of the wild, wild web.

54. A sidebar on consciousness:

It is extremely tempting to use the digital mediasphere as an analog for consciousness, for many of the reasons we've alluded to above. I'll succumb to that temptation again for just a moment to make a point – an extremely and perhaps, unwarrantedly speculative point.

When attempting to describe the nature of the universe (including consciousness), we are prone to pull out our most versatile and potent weapons – language, mathematics and graphic imagery (maps, and diagrams etc.). Our language about consciousness is more or less metaphorical, the more metaphorical the language, often the larger, and for me, the more resonant a picture is described. We often use mathematics in describing empirical experiments and the fine stuff of neurology and in quantifying our graphics. Of course, we also use literature and the arts to get at the mysteries of consciousness, but somehow we reserve judgment about the empirical defensibility of these descriptions.

The analogy I want to draw on here, is that of extra-dimensional geometry – the world of hyper-cubes and other hyper-polytopes. We can visualize a fourth spatial dimension, but just barely and with special aids, like for instance animations that express the projection of a forth dimension from a standard cube. Mathematicians and physicists, however, seem to be quite comfortable extending concepts into invisible dimensions in order to solve empirical problems that the sensible dimensions can't handle.

What I am suggesting is that ordinary language falls as short as it does in its descriptions of consciousness' essential character because of categorical limitations imposed by our grammar of description – specifically the hypostatizing tendency of language to present processes as static configurations. We know, for instance, that a race is an activity – yet our principle descriptor is a noun, and the main modifiers we use are adjectives. So, is consciousness an object or an activity? And even if we call it an activity, what can language do to specify the crucially interactive components of the activity?

Let's bring the old, intermittent, motion picture paradigm to bear here, and imagine that we want to observe the intricacies of a short-lived phenomenon by filming it and then analyzing the filmstrip, one frame at a time. Looking at the film slowed down gives us some insights, but we discover that crucial aspects still seem elusive. So we look at the single, individual frames, hoping to see some residue that will break open the mystery. Still there is nothing conclusive. No matter how fast we run the camera and how slowly we run the projector, not only does the mystery effect remain elusive, but we get

the distinct feeling that our phenomenon is somehow interstitial by nature, It can only live between frames – that what's going on actually doesn't occur on the same plane on which its manifestations occur. We're using the wrong kind of camera; we're trying to understand quantum-like effects using a classical framework. I would maintain that that framework is our language and that our inability to come to grips with consciousness is a product of our bulldog habit of thinking that language can describe a reality un-warped by the very process of description. What we are looking at lives in an indescribable dimension with parameters that are super-linguistic. Or, let's say an *as yet* indescribable dimension.

What's to do?

I fear my answer will sound so glib, that it will have many of you turning away in instant disgust: I suggest we learn to listen to the music of the spheres – the mediaspheres. I would maintain that if we could record enough usage data – a vast enough collection of click trails, and play them back, not at a slower speed, but a much faster speed, so that the clumping of data appeared as fractional modulations in a much larger song, we could then begin to intuit some of those aspects of consciousness which dwell on that further, elusive plane – the plane that ordinary language's conceptual hegemony has blinded us to.

At this juncture I can do or say little more. Until the collected data set is large enough and the analyzer/projector for it is invented, we are still at the stage of inferring some Heisenbergian sort of uncertainty principle, without the requisite implications to support it. Even then, I believe, our understandings would proceed via intuitions of the sort that only analogies can shadow. Just for starters, though think of the hierarchy of values in the evolution of consciousness and then think of the proportion of mediasphere activities related to sex, threat and advantage. Here I imagine animated, Venn diagram-like expressions of proximity, proportion, flavor, relevance and intensity, etc. representing the orchestration of conscious output from a target market. Of course the data would be distorted, would need decoding, decompression, interpretation… and on, but a new kind of discussion could begin, one where perhaps artful data massage would augment writing, talking and simple imaging.

55. So, where is the screen?

One more similarity to add to the enticing analogy between consciousness and the mediasphere is the indeterminacy of the screen in both worlds. Here, I am taking for granted that we agree with Dennett's hard fought argument that there is no special center of

consciousness, no Cartesian Theater, no screen on which consciousness plays out. There clearly is no special center of the mediasphere, unless it is with some arbitrarily posited first person or some corporate-generality third person. And with the dissolution of a specifiable screen, all of a sudden the bounds of first person experience, the locus of our personal 'screens of mediation', become questionable on a level that is orders of perplexity beyond the questions Michael Snow posed in his slow deconstructions of the screen of classical cinema with *Wavelength, Back and Forth, and La Region Centrale*. In fact, the seeming irrelevancy of the screen in a digital world should clue us to look elsewhere for an equivalent term.

What do I mean by "the dissolution of the screen"? The presentation 'surface' in the digital mediasphere is rarely isolated from the rest of the visual environment by much more than the breeze of intention. *Attending* to it, that is, the act of paying attention is the operating frame. In fact, the prevalence in experience of the portable moving image has modified our expectations about the 'coherence' of attention and the nature of frames. That's one way that the screen dissolves – it becomes an object that includes moving signifiers the way any other thing we'd call an object might contain moving signifiers – like a highway, for instance. The other way the screen becomes irrelevant goes in quite the opposite direction, and includes the electronic devices that shift the interface inwards: the headphones, video glasses, cochlear and retinal implants, etc. If television made the moving image more like furniture as David Marc suggested, truly portable digital media are more like thought itself – the omnipresent breath of culture.

In this case, what stands in the place of the screen as a pivot for analysis? Just what is the substrate here? John Cayley, in his essay *Writing on Complex Surfaces* gives us an interesting point of entry with his analysis of writing in digital media (see http://www.dichtung-digital.com/):

> Addressed to writing, 'depth' is rarely conceived as material depth… In our present times, so long as the dimensionless surface of writing casts its pall over the writing surfaces of the screen, it will remain difficult to make an unarguable case for the specificities of writing in programmable media. The screen should not simply be cast as the bearer, for example, of multiple (flat) surfaces or successive 'states' of text, it must be viewed as a monitor for complex processes, processes which, if they are linguistic, will be textual and symbolic, with a specific materiality as such. We must be able to see and read what the screen presents

> rather than recasting what passes before our eyes as the emulation of a 'transparent' medium.

When Cayley considers the substrate for poetry in a new, digital medium, he looks to the code. It is the code that produces the experience – in all its dimensions. The code produces the substrate and the text, and in doing so liberates the text from a simple surface. This should be no surprise, and Cayley is not alone. Legions of digital media artists have created entirely new media in their recognition of the code as the prime enabler, just as Dewdney recognized the Maltese Cross Movement as the primary enabler of cinema.

Not only is the code the primary enabler but it is also a new locus of reality parsing: that is, just as an object is a context dependent 'operable something' and a word is a context dependent 'operable something', a chunk of functional code is likewise an operable something whose function is utterly context dependent. Or, as Wittgenstein famously said: "The meaning of a word is its use in the language." Or, to put it yet differently: cutting and pasting, is cutting and pasting code. If we ignore this contribution, it has the same effect as when we ignored the screen as the source of the cinema experience: we lose one immediate dimension of self-reflection. Not so big a deal to the work of prose, but a fatal blow for prosody.

Cayley calls our attention to the mesostic, a way of graphically structuring poems wherein a vertically spelled word acts as the spine for words that are spelled horizontally through it. John Cage was one noted practitioner of the mesostic, and here is an early example of his:[97]

the b**E**autiful
o**X**en are
ro**A**ming
a**M**ong us
op**P**ortunity is
be**L**aboring
th**E**m

For Cayley the mesostic's power lies in the way it exemplifies the relationship between a 'given' text and a 'generated' text, and how that relationship outlines the complexity of the 'surface' in digital poetics. In the mesostic, the spine represents the given text, and in

[97] This is example is taken from the website of Matthew McCabe, see http://www.euph0r1a.net/mesostomatic/what.html.

Cage's world the rest of the poem was generated by a combination of chance and choice interventions. In Cayley's own work, he claims to reinstate 'time' in the process, by animating the potential transformations between given and generated texts using transformational algorithms.[98]

Parsing Cage's mesostic, though, gives us interesting grounds for meditation on our fundamental premise that meaning considered as referential movement can provide an analytic basis for recognizing equivalences among media. For Cage, chance operations, and for Cayley the application of algorithms act as a portal to meaning potentials otherwise blocked by the stalled imagination. What's more important, albeit harder to argue in a philosophical context, is that chance operations and perfused algorithms offer an experimental touchstone onto a wider universe. In the first case referential movement is pitted literally against the openness and indeterminacy of the universe: if you don't know where to go, roll the dice.[99] In the second case, Cayley uses code in ever evolving ways that tease out fruits of the separation between storage and surface. In his early, and as far as I can tell no longer available piece called *RiverIsland,* he uses code to produce what he calls literal morphing, wherein a viewer causes the transmutation of one poem into another through the animated movement of letters from one arrangement to another, by mousing a navigation device. In a later work designed to instantiate writing in a virtual reality cave, as the viewer moves through the space of the poem, the letters that form the words pivot to remain full-face from the viewers' perspective (a first-person-izing code!).

Cage's *Example* mesostic has its poetic power lodged in a little power loop, a vector-strategy common to short, tight poetic formulae like haiku. Power loops take alternative parsings and face them off against each other. The first reading in this case parses the poem into two lobes: 1) *the beautiful oxen are roaming among us,* and 2) *opportunity is belaboring them.* But these two readings are a product of our syntactic expectations, resulting largely from the completeness of thought imputed by the verbs that separate the string of words into two complete, but not complementary thoughts. The *form* of the mesostic does not itself suggest this parsing, instead it suggests that these are not separate thoughts, but are unified into one thought by the vertical spine. In doing so it calls attention to the fact that there are

[98] Unfortunately the examples of this work that were available online were written for now obsolete operating systems. Complex surface indeed! Extinction is a reality in the mediasphere as well as the biosphere.

[99] Hence Cage's well-known fascination with the I Ching.

spine words and 'wing words' and if we drop one, or another, or all, of the wing words, the de-parsing possibilities – the recombination of terms into a single unitary (though perhaps slightly uncomfortable) thought – multiply and echo off one another. With our built-in, incessant drive for meaning as the motor, these vectors set up a relationship of vibration with one another as we consider the possibilities demanded by inspired interruptions or indeterminacies of referential movement – those pleasurable gaps in understanding that poems characteristically provoke.

Cayley incorporated physical movement, or a presentation of it, at any rate, with his deconstructions and reconstructions that result from the letters moving around on the screen.[100] The letter morphing in *RiverIsland* is triggered by the viewer/reader's movement of a navigation tool in an image area that borders the poem-space, diverting attention from the literal morphing to flowing imagery of what seems to be a bucolic picture-panorama. Bounding the poem field with a moving picture field, as he does here, diverts one's attention from the flow of poetic ideas in the verbal mode to the allusive river in which we stand as we wait for the new reading to coalesce from floating letters.

56. Definitions and boundaries:

For me, personally, Cayley's work, and much of the other digital high art I've encountered suffers from a context problem that may reflect my upbringing, my time in history and the predispositions of my consciousness as much as issues provoked by the context in which I've encountered these works. Or, it may just reflect on the immaturity of the medium. While the continuous act of reparsing Cage's *Example* mesostic keeps me engaged with shifting loops of referential movement, with Cayley's *RiverIsland* I found myself distracted while the poem reorganized itself, a distraction that was on par with the degree to which the graphic imagery at the side and the bottom of the computer screen failed to rouse in me truly bucolic sentiments.[101] My mind moved toward – that is I found the real content of the piece – in the supporting theory. The *idea* of writing on complex surfaces captivated me more than the experience. The idea exercised potentials on its own. In its purity of expression I was quite happy to

[100] One can at least get a glimpse of what he was up to, along with a cogent analysis in Maria Engberg's essay Stepping Into the River – Experiencing John Cayley's RiverIsland. (*http://www.dichtung-digital.com/2005/2/Engberg/index.htm*)

[101] Here, I'm recalling the one opportunity I had to download the piece and run it on an OS that I've since abandoned. My distraction was enhanced no doubt by the reflection of window light on the cathode ray display.

contemplate first the *word* and then the *world* as the instantiation of code.

In the preceding section we slid quite effortlessly from a contemplation of the digital mediasphere as a commercially oriented free-for-all, to a description of digitally enabled poetry. In his famous book *The Sacred and the Profane,* Mircea Eliade (1957:11) uses the concept of 'hierophany' or 'the manifestation of something of a wholly different order' to make a distinction between *sacred* space and time and *profane* space and time. David Marc (1984:5) reminds us that "The power of television resides in its normalcy; it is always there at the push of a button." But in a helter-skelter world, that push of a button might initiate the onset of sacred time for a modern, perceptive but non-religious, critic like Marc who can find in a sitcom a window into the universals of humanity. Or, for a passionate evangelical watching a televangelist, TV might represent direct throughput to a manifestation of *a wholly different order* – the mediation being irrelevant. For a South Pacific Islander being fed canned American Primetime dramas, TV certainly represented something 'of a wholly different order', at least initially. However, for non-religious moderns, the category of beings that prompted Eliade's analysis, it is most often in art or nature that that hierophantic threshold is found.

Watching Conrad's *The Flicker*, the idea of *threshold* truly comes alive. There is a distinct, palpable transitional moment as the interval of flashes achieves just the speed at which it interferes with a natural neural tempo and color hallucinations begin to well off the screen – into a space whose virtuality is mediated only by our own systems. The way that analog cinema mimicked consciousness was crude in its raw intermittence. The deft encoding of digital cinema, with its subtle buffering and well-synched parallel processing, seems a much better model.

Herein is rooted the short half-life of the meme of ultra-fast cutting, however. Nothing else in our experience prepared us evolutionarily for such a density of discontinuity. People say these kinds of films hurt their eyes. Engineers say these kinds of films eat too much bandwidth and require processing power good for nothing else.

Analog cinema meshed with our visual systems as well as it could, yet its very crudeness paradoxically provided us with communications possibilities that digital cinema cannot yet recreate. The economics of compression simply cannot yet handle 24 (or 30) full frame image substitutions per second – neither digitally or neurally. However, just as current human biological traits represent

just the most recent frame in an ongoing movie, the same is obviously true for the current traits of the mediasphere. A single digital movie frame is not really an entity unto itself, but is rather only a stage of a process on its way somewhere else.

Not only does this make digital cinema in particular and digital media in general more like 'mind' it also transforms the poetics of omnivalence in ways so rich that it promises to take generations of poets to work through the potentials. When an expressive gesture is as localized and atomized as it is in analog media, its congruence with, its attractions to, its valences relative to any other expressive gesture, are still bounded by a limited algebra of encounter. Though seemingly infinite, their implicature seems incredibly limited compared to valences computed in a world of global broadcast radiance, instantaneous feedback and the expectation of massive parallel processing. For omnivalent work to exist and to become 'sacred' in the digital mediasphere, new sets of boundaries, new attitudes and expectations toward *ad hoc* categories will need to emerge in order that the omnivalence meme not perish.

The power of the digital mediasphere is in its ubiquity. I have no doubt that our human need for hierophany, the need to step outside of life, will carve out appropriate traditions within which some digital organs will regain the sense of framing required for an entrance into sacred space and time. Perhaps it will occur under 'phones and goggles', those nearly perfectly un-framed digital experiences. Perhaps it will occur via neural implant technology that taps waveforms we've learned to associate with meditative states. Perhaps we will develop simple, personal bracketing techniques. However it happens, though, I have a great deal of confidence that the state we achieve will be a product of the skillful and apt manipulation of intervals and repetitions coded in effective contexts.

As the nature of mediation changes under the pressure of continuous invention, our entire sensory universe, with its attendant set of expectations, will change. The relationship between self and other, whether in a profane and commercial environment, or in a poetic and sacred realm will shift in ways that will be brought about by those thinkers who have a sure, intuitive grasp of the essence of the medium, and who can seize our attention and move us into their convocation.

57. The meaning is the metaphor (or not):

Anything on any screen. Anything on any no-screen. All media in one stream. Planet wide and in selected locations throughout the solar system. Words move. Pictures acquire rhythm. The machine pushes

back. Respondents are both conscious and unconscious. All input and output is log-able. Stasis is untenable. The idea of movement becomes strange.

You are sitting across the room from me and say, " Check Rover." I hit a few keys and pictures pop up from Mars. The idea of movement covers so many distinctly different types of transactions and on so many levels in this little interchange. We have to deal with whatever moved you to ask me to check Rover – and moved me to know what you meant. We have to deal with laryngeal and labial movement, pressure wave movement, neural movement (electro-chemical), and digital (as in finger) movement, then electromagnetic movement. We talk about waves propagating through space, about transistor gates opening and closing, of code being read, of data being streamed, links being made, transactions accomplished. We talk to one another, or to one or another machine.

Just as movement can have many modes, so can meaning. Machines talk to one another. How metaphorical is that?

Time to back up again. We're getting awfully *meta* here – when we don't even know what is *phorical*. Let's retreat to our central description, or definition, if you will, of language as the meaningful articulation of elements within an overarching structure – where the meaning of any element is its use in the structure. Under this description, we have no problem with the idea of machines 'talking' to one another in the digital mediasphere.[102] Clearly, however, our aphorism about meaning being 'mental' movement has no place in this picture – even though we confessed from the start that the idea of mental movement could itself only be thought of metaphorically. Is the 'mind' after all, an entity that can brook *movement*? Isn't mind by definition immaterial? How does movement show up in the immaterial? Through transformation, you say? (If I say, "I was moved by that." where do I look to see what moved?)

Isn't that a little bit like the phi phenomenon? In one frame it is in state *a* – a state with *no idea*. Then, next frame, (next time we look) we have state *b* – a state *with idea.* Okay, then. Meaning is *machine* movement in this case. Well, the machine doesn't move.

In a Rube Goldberg device, physical causality is quite visible as one machine within the contraption acts on another. There is no question about what I'm talking about when I say that there is movement. There is more question, however, about my use of the

[102] Well, few problems. We have to recognize that machines have built in *intentional stances* in order for the idea of a machine having a *use* for something to make sense.

word meaning. Did the ball that rolled down the chute in the beginning *mean* to trip the gong at the end, which then scared the duck into the water? Was the ball *talking* to the duck? Somehow, mysteriously, we are more comfortable with the idea of CPU's talking to one another, slightly less likely to say that one microprocessor talks to another, and the analogy falls apart further at the circuit level, not to mention the ball and duck level. No surprise. The language game of *talk* and *mean* presupposes a level of complexity that Rube Goldberg, as amazing as he was, never quite achieved. At least not from the perspective of massive parallel processing.

We can stretch the boundaries of the game just so far before the words lose their power. Whatever family resemblance there was between the central case – people talking to one another – and the peculiar causal relationship between the ball and the duck, has been exhausted. That's why we don't call a Rube Goldberg machine, a language.

We do, however call the articulation of code by a CPU or even a microprocessor, a machine language. It becomes easy for us to see how code can be *meaningful*. In fact we can discriminate between what some code means to the machine, and what the same code means to us, although the meaning of a particular bit of code from our point of view might be 'nonsensical', yet very 'meaningful' to the machine. How do you corroborate successful reference in the machine? It doesn't crash. How do you corroborate accurate reference? It gives an expected result, a proper reply.

We interrogate the machine and it replies: it plays our language game. Or is it *us* playing *its* language game? We described language games as having semi permeable boundaries and flexible rules. This was the case for conversational and especially aesthetically involved language games. But this is not always the case. If we think about machine languages, about human to machine languages and other technical languages we see that our palette of referential styles gets shaved to the core (so to speak.) In machine-involved languages, metaphors, ambiguities and multiple meanings are out.

Machine-involved languages belong to a class known as LSP's – languages for special purposes as distinguished from LGP's or languages for general purposes.[103] Many, if not most LSP's are controlled – that is they have specific rules limiting things like certain grammatical structures, sentence length, *ing* endings, ellipses and intra-sentence indefinite referents. All controlled languages have strictly limited lexicons with rules about when, for instance, to use the

[103] See http://www.eamt.org/archive/dublin/MOELLER.PDF

word *start* as distinct from the word *begin*. At their heart, all controlled languages use only stipulated references, and all stipulations are specified. LSP's are not fun and don't have significant musicality. What they do have is translatability. Some are designed especially for virtual machine translation – that is, they are designed so that software can port one of them relatively easily and relatively accurately into another. Another kind of controlled language is designed for real-world machine translation – that is, it's designed, for instance, to make a Boeing 747-400 repair manual precisely accessible to non-native English speakers.

STE, Simplified Technical English is one such language, and claims to be designed also for native English speakers.[104] Its *raison d'etre* is to make technical instructions clearer, easier to read and more precise.

On one level at least, the machine mediation level, the digital mediasphere has wrung the deliciousness of ambiguity from the act of reference and instead has added the perniciousness of affective ambiguity to the message by coarsening and nailing down the lexicon. But the goal of the specialized language – to be able to predict every vector of the meanings used – is not about humans relating to humans.

58. The raw and the cooked.

But, really aren't the machines incidental to this whole business? Once again, I flash on a scene in a subway in Shanghai, or Singapore, or Beijing. High population density, intense cultural coherence with strong, central control of information streams, at least historically – and an unusually high density of small screens add up to a unique environment for portable moving pictures. Being physically immersed in these environments, rather than watching them – even on 3D virtual reality goggles – throws me into a contemplative state approaching paralysis. Not exactly a subway state of mind. Making sense of new experience, especially under the provocation of the exotic, I tend to resort to the dialectic: find two opposing poles in some appropriate analytical framework and use their opposition to tease out similarities and differences. The sacred and the profane, for instance.

The car accelerates. Bodies tense just a bit initially, shifting into a new gravitational equilibrium that provides a stable framework for attention – attention paid, attention deflected. Complex beings, together for a moment and about to scatter, focused eyes and dancing fingers practicing the fractured here in the insistence of the now.

[104] See http://www.simplifiedenglish-aecma.org/Simplified_English.htm

Claude Levi-Straus, who was about understanding global cultural coherence, also found the dialectical heuristic valuable. His focus was on the mythology of pre-industrial peoples, peoples for whom the boundary between civilization and nature was sinuous and complex. He used the metaphor of the raw and the cooked as two poles between which cultural manifestations could be lined up for comparison. In the '*Overture*' to his book, *The Raw and The Cooked* he makes an interesting comparison between myth and music noting a similarity in how they relate to time (1967: 14-15):

> But this relation to time is of a rather special nature: it is as if music and mythology needed time only in order to deny it. Both, indeed, are instruments for the obliteration of time. Below the level of sounds and rhythms, music acts upon a primitive terrain, which is the physiological time of the listener; this time is irreversible and therefore irredeemably diachronic, yet music transmutes the segment devoted to listening to it into a synchronic totality, enclosed within itself…
>
> It can now be seen how music resembles myth, since the latter too overcomes the contradiction between historical, enacted time and a permanent constant.

That constant is the coherence of culture. And though, along the continuum from nature to civilization, one can hardly imagine more ground than between the Bororo people of the Amazon jungles and Shanghainese, still we have two very, by today's standards, coherent cultures. The intellectual parallax provided by the poles of the dialectic though, seems relatively narrow in both of the individual cases – not much that's cooked in one, and not much raw in the other. At least by Levis-Straus' reckoning. But, as I've confessed before, I find no problem in (carefully) snipping partial-pictures out of other people's views and bending them to my own uses. And even though I disagree with much that Levi-Straus says about the relationship between music and language, so much of his style of thinking underlies my own, that I feel comfortable accepting his cultural schematic, and transposing elements, as I see fit, within it – in the spirit of dialogue and enquiry. L'esprit Cartesian, the characteristic of French education and mindset that hatched Valery's exploration of omnivalence, likewise hatched the structurally isomorphic exploration of global cultural coherence. But as L-S said about music and mythology in relation to time, the digital mediasphere's relation to cultural coherence may be that it needs it only to deny it.

The cell phone has come, for me at any rate, to be the emblem of modern Chinese cultural coherence almost like the *Little Red Book* was when I first visited Shanghai in 1978 – something that everyone carried and referred to incessantly.[105] Certainly these two polar manifestations, the *Little Red Book* standing for the raw end of the information diffusion spectrum and the cell phone, the cooked – have plenty of parallax to feed off. In this analogy, the immutable power of the Communist Party as embalmed in the quotations of Chairman Mao gets equated with the raw power of nature's law to dictate knowledge of existence, and the cell phone is emblematic of civilization's power to supplant natural order with the chaos of connection. Of course, one could just as easily take the opposite stance and call the quotations of Chairman Mao, information cooked in the propagandist's pot with all citizens getting ladled the same stew and the information on a cell phone having the fresh chaos of spontaneous invention. But then that's the beauty of these dialectical heuristics – they will simply throw light onto issues from two sides. From the perspective of electronic commerce, though, it seems more rewarding to look at the control of the Central Committee – ruled absolutely by one man, as representing raw power as yet unheated and undifferentiated by the roil and boil of a market economy.

The number of cell phones in China is another fast moving target, with three hundred million being a figure used at the time of this writing. This makes Chinese cell-phone users a larger market, by a third than the entire population of the United States. Also the average Chinese spends a far larger percent of his or her annual income on cell phone services, which at this point include games, animations, and romance novels along with internet access features like television, radio, and stock trading as well as email, messaging, and regular old telephone calls. Chinese communications industries are involved in a massive bake-off not only with Japan, Korea, Taiwan, Singapore, Europe and the U.S., but also notably with their own government.

In 1978 I went to China to shoot a film[106] that I hoped would allow me to catch a remarkable turning point in history – or at least to catch the *before* part of it. I was fascinated by the existence of apparently homogenous revolutionary zeal in a society whose cultural coherence was legendary. In China, education, religion, politics and culture (intellectual and artistic values) all radiated from the same

[105] Though by the time I got to China the *Little Red Book*, a selection of notable quotations from Chairman Mao Tse-Tung, was already on its way out of favor – no longer as culturally ubiquitous as it had been a mere two years earlier.

[106] *The Chinese Typewriter* (1983) 16mm, color, sound, 28 min.

power center. This was such an extraordinary concept for an American in the 1970's that I needed to experience it – to get as immersed in it as I could.

I had an extensive, though hardly a free pass to Chinese schools, from pre-schools to teachers' colleges in cities from Beijing to Guangzhou. For three weeks I observed the body language of instruction in the People's Republic, largely through the viewfinder of a movie camera. For almost five years after, I observed the same movements through the window of an edit viewer, comparing one style of movement to another across transitions that I set up, explicitly for the purpose of comparison.

Then, twenty-eight years later, I returned, first to Beijing and later, to Shanghai, also explicitly for the purpose of comparison. However, at the end of that first trip in 1978, just as I was about to leave China for what was then the Crown Colony of Hong Kong, I was allowed a snapshot of China's future. In those days one departed the People's Republic by crossing from one end of a train platform to another (through a customs and immigration barrier of course.) Nonetheless one could see two countries on one train platform. At one end the citizens moved with a distinctive flat footed shuffle that I had gotten so used to after three weeks that I no longer noticed it. It was a uniform style of movement constrained from the outside, where the forces of the body met the forces of society as a whole, and crumbled. I read their movement as having been utterly humbled. Quite appropriate to the gestalt of the culture.

At the other end of the platform people of the same aspect and coloring moved their hips and arms with a swing that radiated outward from the core of their being and met the outside world with unfettered sexuality. Today, the streets of Shanghai are barely distinguishable from the streets of New York as far as the quality of individual and throng movement is concerned.

How they *are* distinguishable is so subtle as to be nearly mysterious. But in this barely discernable but still quite unique quality of flow that one finds in Chinese 'traffic' one can also find what it is that distinguishes the place of the cell phone in parts of Asia from their place in the West: the spirit of homogenous intent. On sidewalks and especially on multilane expressways the Chinese move with an unconscious, elaborate and occasionally breathtaking choreography. On cell phones many eyes, many ears, in many places, stare into the same hearth.

Of course, the casual and alien eye is perfect for spotting these homologies. It takes disciplined anthropology to demonstrate them.

59. A final reflection on method:

The heuristic dialectic, which has been so important to us in this analysis of movement in language, makes many people queasy. Especially philosophers. Positing temporary poles of opposition, in order to tease out differences and similarities, somehow smacks of play rather than work. Recognizing the validity nay, the overlapping validities, of manifold perspectives, even possibly contradictory perspectives, speaks to some vague idea of learning, without the clarity of singular intellectual progress. What is at issue here is nothing less than our ability to embrace the indeterminacy of language.

If we consider the digital mediasphere to be a global language whose open essence we sketched out at the start of section 57, and if we recognize that it is in its infancy (although to us it seems to have sprung nearly full-grown from the womb of a cinema impregnated by radio), we can fully embrace the importance of the moment. Mediation, the process of porting information across domains is a function of our nervous systems, both intra and inter-corpus. When inter-corpus mediation becomes global and instantaneous, the complexity of interaction blossoms, and the tools of self-consciousness multiply with a dizzying geometry.

All the more reason to embrace the simple and the tentative. But not just any *simple*, and certainly not the *precise* simple. Let's look, for a moment, at the lure of one precise simple in a complex global environment and try to assess its limitations. The Boeing Simplified English Checker (BSEC) is an interesting (hypothetical) point of departure. [107]

The BSEC is a software program that operates like a spelling and grammar checker. It makes sure that technical writers who are preparing manuals for global products observe the rules of STE, or Simplified Technical English. The machine tells us that we are writing adequately for machine comprehension. Well here's our first metaphorical intrusion: I am referring to non-native English speakers as machines, here. Or, when I say "…writing for machine comprehension." maybe there's a simple ambiguity, not really a metaphor going on – i.e. I'm simply implying that the purpose of the writing relates directly to and only to the function of machines. Well, in the same sense that a software program is fruitfully considered a machine, the entire digital mediasphere, its entire infrastructure, is

[107] I have not used the BSEC, and read relatively little about it. But the revelation of its existence is so provocative, I cannot leave it out of the discussion.

probably best considered as a machine. Therefore, a machine friendly language is probably what we're looking for in our analysis.

The problem we bump into as soon as we start looking for larger satisfactions, is one of scale and complexity – maybe the same thing actually. We get a hint of the problem as we try to decide whether the non-native English speaker can be thought of as a machine. For that matter, since one claim of STE is that it improves the clarity of technical writing even for native English speakers we are backed into the position that any human who is mediating between STE and a machine, is acting enough like a machine that they can be adequately described as such. What violence does this do?

Of course I will want to utilize a heuristic dialectic to approach this question. But first I need to quickly deconstruct a really quite flimsy and false dichotomy (an incipient dialectic) that's common to these analyses. If I ask you to consider whether a non-native English speaker is a human or a machine, I am forcing you to make a false choice based on the structure of the question. You can of course deny the structure and deny the question by responding: "Well, he could be thought of as both – depending." However, it is my experience that this kind of answer is usually thought of as unsatisfactory rather than as the prelude to a larger and fuller discussion. We are so comfortable with the force of a grammatical form that there seems to be a kind of heresy in denying it.

For the two legs of my dialectic I propose to compare the simplicity of Simplified Technical English with the simplicity of haiku. Long legs should, after all, take us great distances.

Both approaches are the product of applying strict rules to the use of words. The rules for forming haiku are few, simple and seemingly arbitrary: haiku all have seventeen syllables on three lines that measure 5-7-5. STE has a few more rules that are not quite so simple and are anything but arbitrary. For example here are but a few that Moeller quotes in her article: [108]

> The AECMA SE [Aerospace industry simplified English committee] rule bans noun clusters of more than three words, unless they are Technical Names.
>
> An article (the, a, an) or a demonstrative pronoun (this, these) should be used before a noun, when appropriate, in order to show where the noun phrases are.

[108] http://www.eamt.org/archive/dublin/MOELLER.PDF

> –ing-forms of verbs are not allowed, unless they are in the lexicon as nouns or adjectives, or they have been added as parts of Technical names.
>
> Use only the active voice in procedural writing, and as much as possible in descriptive writing.

Well, I admit that the passive voice has been used by me a lot in this essay. However, I beg thee note, that in my description of how to assemble a haiku I followed the AECMA SE rules, whereas Moeller does not in her description of how to build an SE sentence. Nonetheless let's check how these rules translate into action:

The sentence (Moeller again):

> If air is blowing continuously out, then either the piston seal is incorrectly assembled or damaged, or there is a flaw in the cylinder barrel surface finish.

should, according to the rules be rendered as (oops, passive voice):

> If air is blowing continuously out, then you have either assembled the piston seal incorrectly or it has been damaged, or there is a flaw in the surface finish of the cylinder barrel.

Questions of English language word order aside, I personally find the first of these renditions a tad more accessible, but I can see what they are getting at and where they are going with this effort. After all English verb forms are a bitch and the prejudice against the passive voice has some merits. Let me quote from Moeller again (2003): "In Systematic Functional Grammar some of these configurations (nominalizations, nominal groups and non-finite clauses) are referred to as grammatical metaphors." She goes on to define grammatical metaphors as: "a shift between grammatical categories, e.g. where a nominal group is used for the contents of a verbal group…"

The goal of Simplified Technical English is to stamp out the metaphor in any of its possible incarnations. The instructions for Simplified Technical English could be compressed (lossy) into: "Keep the vectors of reference short, direct and unambiguous." Let's, on the other hand, check out the simplifying (and cleansing) power of the metaphor by looking at a three haiku by Basho. When we see what makes them tick we'll have clarified at least one thing about the difference between talking to a machine and talking to a person.

At the ancient pond
a frog plunges into
the sound of water

This first fallen snow
is barely enough to bend
the jonquil leaves

How reluctantly
the bee emerges from deep
within the peony [109]

Early on I suggested that language works the way we work, by finding similarity in difference. As an intellectual descendant of Merleau-Ponty who believed that this ability was the basis of all perception and of Wittgenstein who proposed that family resemblance is the basis for language learning in general and naming in particular, I find the metaphor almost indistinguishable from 'the nominal' in everyday speech, and the poetic use of the metaphor a necessary food for growth.

These haiku all transcend the metaphor. They contain merely implications for metaphors and so their vectors are truly mysterious and idiosyncratic. In the first we might read the implicit comparison being between past, present and future: in the province of an *ancient pond a frog plunges,* in the present, into the future of the sound it will create. Or it could be a comparison between the vision of the water and the sound of the water. Or it could be between the mental image we have of a silent water surface and one roiled with the splash. It could be none, and it could be all, it could be other.

In the second haiku the implicit comparison is between the jonquil leaves before and after the snow. In terms of comparison, there's not a lot of ambiguity. The brilliance of the poem is in how rich, delicate and deft a portrait it creates in how few words and how that portrait

[109] By Basho and copied from this wonderful site: http://www.geocities.com/alanchng1978/basho.html

can refer to so many human conditions by conjuring a singular, resonant observation.

In the third haiku the implicit comparison is between the bee and ourselves, with the further implication that there is a quality in the universe that touches all sexual creatures.

All of these haiku create pleasure through ambiguity. We could begin every day with any one of them, and have it always set a different course for us. In their embodiment of omnivalence they pull our experiences into them. They become operators on the accumulation of our understanding. The vectors of reference pass from term to term within the structure, then out and into what we have lived, and then back into the energy between the terms.

I'm sure we are capable of writing software programs that could reliably parse haiku, and that these programs could actually amplify our parsing of them, by coming up with referential possibilities that are beyond a pedestrian's imagination. What I don't believe is that any machine can order these parsings according to their resonance, their depth, their relevance or the breadth of their implications. The machine does not have our propensity for recognizing similarity in these subtle differences.

Well, what is the difference between the two kinds of simplifications – Simplified Technical English and the haiku? Or, for that matter the idea of the simplification of human language through rules dictated by a deep structure representing a universal grammar, on the one hand, and the simplification of communication into interval, repetition and context on the other; or, for that matter the simplicity of analyzing all relationships in terms of resemblance?

Is it a difference between the *synthetic* simplification that we find in Simplified Technical English, i.e. we can synthesize rules for forming sentences that will restrict ambiguity, or in a Generative Grammar that will reproduce any human language if properly applied; or is it an *analytic* simplification where we find a description that provokes and stimulates comparison and perspective shift across maximal stretches of intellectual terrain?

60. From the grain to the pixel:

The essence of my method in this essay has been to accumulate shifting perspectives and thereby gather some temporal parallax. We started in an analog universe that was relatively determinate and have wound up in a digital universe that is curiously indeterminate. The one solid observational plane, the isolated screen of the movie theater has dispersed, melted (or as Lev Manovich points out (2001:90) become a 'control panel') but the one minimal unit, the film frame - consisting

of an unstable swarm of grains, has yielded to another, stable, minimal unit, the pixel. That in itself actually propels us into a vastly different universe where we have been cast loose from the predictably indexical nature of the photo-chemical image. But besides the whole realm of computer created imagery, and all that that ontological shift entails, there are another couple of less obvious considerations.

The title of this essay, *Movement as Meaning* has actually got a set of implications with an alternative and prior history. In the 1950's and 60's Ray L. Birdwhistell (1918-1994) founded the discipline of kinesics: the study of the meaningful motion of the human body; and in order to decode the ferocious complexity of the way body language interfaces with spoken language he used the machine of cinema as a research tool.

In his book *Kinesics and Context*, although he admits to not having made much significant progress in defining the minimal units of human kinesics, he poses a set of questions framed with great rigor. Are the truly fundamental units of human movement kinemes, kinemorphs or kinetic markers? Do they correlate synchronously, or asynchronously with the accompanying units of speech, or do their relations shift, depending on situation, or context?

Here he had an equivalent difficulty in defining context - as we now find ourselves, in the digital age, in trying to define *the medium*. Although he does not use the term, he understood that there are as many or more body-*language games* as there are verbal *language games*; that there are no gestural absolutes that transcend cultures, or even localities, or even situations.

His method was careful and precise however, and followed Saussure's observational outlook, i.e. "…it is the viewpoint adopted which creates the object" (1972:8), "…language has no discernable unity" (1972:10); and, most important, "The essential feature of Saussure's linguistic sign is that being intrinsically arbitrary, it can be identified only by contrast with coexisting signs of the same nature, which together constitute a structured system." (Roy Harris 1972:x). Thus, when Birdwhistell defines kinesic markers, the best he can do is to say: "Thus a marker is a contrastable range of behaviors in a *particular* neighborhood." (1975:154).

His recognition of the significance of rhythm and stress in producing meaning was acute. His understanding of the contributive factors in the meaning potential of gestures included nationality, ethnicity, status, gender, age, health image, body image, rhythm image, territorial status, mood and toxic state, among others (1975:259). His observational coding included five stress states, at least three duration states (including acceleration and deceleration),

five range-of-movement states, eight action modification states (e.g. unilateral – bilateral; specific – generalized; rhythmic – disrhythmic; graceful – awkward, etc.) (1975:272-75); three interaction modifiers (e.g. mirror-parallel, rhythmic–disrhythmic, open-closed,) (1975:276-77); and included as well, the relationship between the observational time of parakinesic behavior to kinesic and verbal behavior.

He discriminated between cuing behaviors, punctuation behaviors and motion markers by area, duration, selection and pronominal reference. He discerned and coded for ten total head movements; twenty-nine facial movements; nine spine profile movements; eight spine frontal movements, at least eighteen hand indicators that move in at least eighty code-able ways; and on – for every part of the body, seated or standing. And he coded these for every frame of movie film, often filming with an over-speed camera, yielding up to thirty-six measurements per second! He recognized that human gestures are inherently polysemic, i.e. they can be interpreted to have many different meanings depending on the communicative context in which they are produced. But he took seriously the idea that vector analysis was the approach to understanding the meaning inherent in movement. He was just limited in the analytic means at his disposal.

The difference between his situation and ours in terms of defining the minimal units of kinesics is that while the analog film frame allowed only relative position information, the digital film frame, on the other hand, not only allows for absolute standards of measurement; but, what's more significant, is that computational power is finally up to the analytic tasks that Birdwhistell outlined. Nonetheless, the question remains: will vector-trend analysis, however fine grain, ever yield an understanding of gesture-meaning that will translate in a satisfying way to a humanist or be of more than passing interest to the psychologist or anthropologist? It's a bit like the question we asked of the mediasphere in relation to consciousness.

So much for the deductive end of the contribution of the pixel. How about the productive end of the analysis? What kind of creative input can we expect from the shift from the living and indeterminate nature of the film grain to the absolutely predictable character of the pixel?

Lev Manovich gives us one answer (2001: 300)

> Once live-action footage is digitized (or directly recorded in a digital format), it loses its privileged indexical relation to prefilmic reality. The computer does not distinguish between an image obtained through a photographic lens, an image created in a paint program, or an image synthesized in a 3-D graphics package, since they are all made from the same material – pixels.

And further on he synopsizes the implications of this observation (2001: 302) "Digital cinema is a particular case of animation that uses live action footage as one of its many elements."

So the shift from grain to pixel gives us a tool for directly translating the precise but polysemic meanings from examples in live action to examples in animation, allowing us to generalize the ambiguous nature of gesture into the fabulous of the fairy tale (e.g. the films of Robert Zemeckis). But this is trivial compared to the poetic standards established by our reference to haiku. The more significant poetic implications lie in our new ability to abstract and generalize the *meaning* of corporeal movement into poetic memes. Manovich's most astute reduction is his recognition that (2001:302) "For a computer, a film is an abstract arrangement of colors changing in time…" It is here, that I imagine an open poetics of digital cinema coalescing: around the *world-pneuma* of chance.

In Nathaniel Dorsky's film *Pneuma* (1977-83) we have an homage, indeed a farewell to the film grain. As he writes in his description of the film for the Canyon Catalogue:

> In Stoic philosophy "pneuma" is the "soul" or fiery wind permeating the body, and at death survives the body but as impersonal energy. Similarly, the "world pneuma" permeates the details of the world. The images in this film come from an extensive collection of out-dated raw stock that has been processed without being exposed, and sometimes rephotographed in closer format. Each pattern of grain takes on its own emotional life, an evocation of different aspects of our own being. A world is revealed that is alive with the organic deterioration of film itself, the essence of cinema in its before-image, preconceptual purity. The present twilight of reversal reality has made this collection a fond farewell to those short-lived but hardy emulsions.[110]

Film grain, and the apparent motion it induces is by its nature random, but predictable within bounds none the less: the size and shape of each element is relatively constant and the movement will not appear to have organization except in its limitations. Yet each 'scene' in *Pneuma* has its own character, determined by the age of the film stock, the type of emulsion, the character of the processing, and the degree of enlargement if it was rephotographed. As a work of art it

[110] http://www.canyoncinema.com/D/Dorsky.html. His reference to "reversal reality" is counterposed to the *negative-positive* systems of imagining which gradually took their place.

has its own originality and majesty. The internal quality of movement of each "shot" has a fine-grain unpredictability, yet is predictable over-all.

And so the film as a whole is totally guided. Dorsky the editor *feels* his way through the cumulative impact of the way the screen swarms under the influence of each emulsion, how it breathes, how its spirit is activated under the light of the projection. As Sarah Markgraf and Gregg Biermann put it in their review of Dorsky's work in the Millennium Film Journal:

> …we have less the sense that Dorsky is controlling the film as *auteur*; rather, he is allowing the shots themselves to construct the film with his help, as their consort but not their master. Dorsky is present in his absence of ego—another seeming contradiction. By not bending the different shots into a shape by sheer force of will, he is communing with the shots and finding out what they themselves are suggesting.
>
> This almost intuitive style of editing contributes to how *Variations* is as strangely artless as it is startlingly vivid. Cuts that are without pomp and circumstance reveal moments of intense seeing. In this work, fragmentation as an expression of alienation does not exist; we have instead another aesthetic form emerging, one that affirms and celebrates difference. [111]

Brian Freye further notes, "The key to understanding all Dorsky's films is the film *Pneuma*".[112] That is to say that the *élan vital* of his work grows directly from his commune with its substrate.

The pixel, on the other hand, is an entirely stable, but totally conceptual entity. It is uniquely addressable, but without content until addressed. Its values are precisely specified and entirely numerical. Its nature varies only according to its 'bit-depth', that is the amount of information assigned to it, or the subtlety of its power of discrimination.

The numerical essence of the pixel is as fundamental to it, as the Maltese cross movement (and the 'modern' equivalents of it) were to film and the modulated scan line was to analog television. Addressing the frame photo-chemically was the root operation in film, and addressing the pixel numerically is the root operation of digital cinema. And whereas the filmmaker needn't have had an in depth

[111] http://www.mfjonline.org/journalPages/MFJ35/NathanielDorsky.htm
From Millennium Film Journal No. 35/36 (Fall 2000)

[112] IndieWire(http://www.indiewire.com/ots/fes_00NYFF_001006_Fri.html)
NYFF 2000: Vital Visions, from Godard to Maddin, Dorsky to Hutton

knowledge of chemistry, he or she did need to understand the influence of the operative variables; and while mathematical handiness is doubtless important to the digital artist, the machine of mediation succumbs to its own set of principles, which Manovich delineates in his *Theory of New Media* as: *numerical representation, modularity, automation, variability and transcoding* (2001:10; 27-48).

A key element in Manovich's thought is the recognition that the GUI (2001:65)

> … renders insignificant the traditional distinction between spatial and temporal media, since the user can cut and paste parts of images, regions of space, and parts of temporal composition in exactly the same way. It is also "blind" to traditional distinctions in scale: the user can cut and paste a single pixel, an image, or a whole digital movie in the same way. And last, this operation also renders insignificant the traditional distinctions between media: "cut and paste" can be applied to texts, still and moving images, sounds and 3-D objects in the same way.

The pixel has no nationality, no loyalty and the only medium it does not address is sound. But an equivalent unit, the digital slice, or *sample* fills that role.

Manovich's insights range far, wide and deep in his view of the future, a view with which I agree most thoroughly: "Rather than being merely one cultural language among others, cinema is now becoming *the* cultural interface, a toolbox for all cultural communication, overtaking the printed word." (2001:86)

His use of the word *toolbox* as an analogy for language is particularly interesting. As I said, at the beginning of this essay: I'm less interested in a style of thought that rules things in or out of categories, but more in seeing what new information we can gain from a shift in categorical perspectives: What do we learn from thinking of cinema as a language? What do we learn from thinking of the world wide web as a language - that is, as the meaningful articulation of elements within an overarching structure? This is what I mean by ontological parallax, and it is a measure of human progress – how many ways can we devise, on the one hand, for the parsing of reality, and for sharing those realizations; and on the other hand, for combining realities, for synthesizing the similarities that might exist in ever expanding spheres of difference?

Resource Description Framework, or RDF is a powerful meta-language that allows us to combine formats in our search for information. It allows us compare information from disparate databases in unique languages, translating from one style of source to

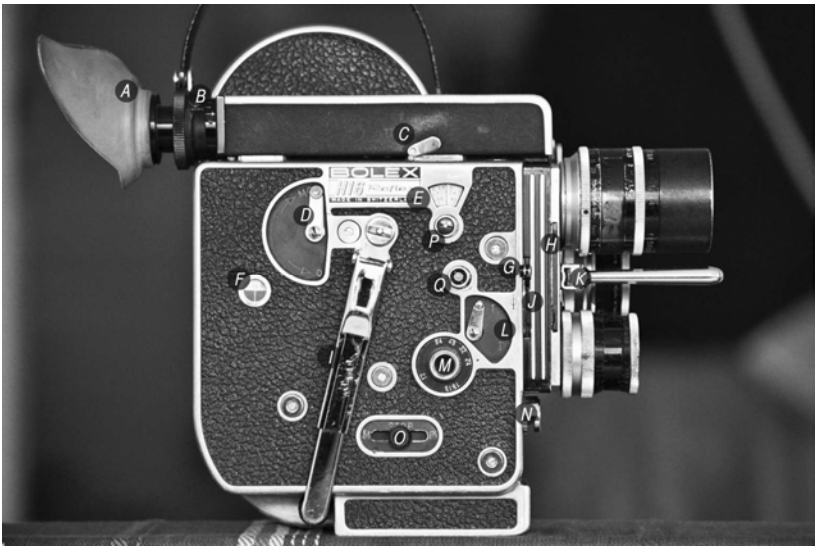
another.[113] What RDF suggests is that where the pixel may be the fundamental unit of the image, we can imagine an even more fundamental conceptual unit underlying the pixel: the datum – a more general unit of information; and that to imagine the datum as underlying the pixel might give us a really powerful tool for looking into the future of imagining and of art, a future hinted at by Dorsky, as he enabled the grain and Cage as he enabled chance, and now by RDF as we move on to enable the data that underlie the conceptual nature of the pixel.

Although RDF presages a vast and powerful means for recognizing similarities in differences, it is hard to imagine the subtleties of haiku emerging from the algorithms. What RDF does suggest is a mode of translating among information styles: words, pictures, music and raw data of all sorts. And since the essence of digital data is in its numerical representation it becomes peculiarly susceptible to chance operations.

Chance operations may indeed produce configurations that are resonant with delicate ambiguity. Until they are pointed out, however, they are mute. Ambiguity, I might add, is the engine of omnivalence, and it is interesting to attempt to imagine the implications of an ambiguity sharpened by the crisply deterministic nature of the pixel and the synthetic implications of the pixel as it fronts for the datum.

[113] The semantic Web in Action, Scientific American. Vol 297, No.6 Dec 2007. Feigenbaum, Hermann et al.

APPENDIX A:



The Paillard Bolex H-16 Rex 3

A Reflex viewfinder
B Diopter
C Light trap
D Spring motor engagement lever
E Frame counter
F Footage counter
G Variable shutter control lever
H Filter slot
I Spring motor winder
J Focal plane mark
K Lens turret rotate lever
L Instantaneous/ time exposure lever
M Speed control (frames per second)
N Camera continuous-run button
O Continuous run/single frame control
P Frame counter reset knob
Q Electric motor shaft/ backwind crank shaft

More than any other tool the Bolex movie camera enabled and inspired poetic filmmaking and elevated the view of cinema as an articulated image stream. Introduced by Paillard S.A. of Switzerland in the 1930's the camera evolved over the years until it reached a mature state with the reflex models, which allowed for parallax-free, through the lens viewing in the 1960's. Its design allowed for filmmakers to access (address) any of the individual frames on a one hundred foot roll of film for the first time, so that rather than simply conceiving of a roll of film as providing three and a half minutes of screen time, they were able to conceive of it giving them the opportunity to expose any of 4000 individual frames, and in any order they chose. This conceptual and compositional freedom unleashed the radically new view of cinema characterized in this book.

Regarding a roll of film in this way allowed filmmakers to disengage from a simple, linear recording of events and regard the roll of film as a compositional canvas to be worked in any way that their imaginations could conjure. It spawned many of the films listed in the Filmography, from the relatively straightforward, simple, elegant animations of Robert Breer,[114] to my own perhaps over-complex experiments fusing disjunctive spaces (see figure 3).

The two windows in the side of the camera body E and F are a frame counter and a footage counter, respectively and allow the filmmaker to know the exact frame or frames that are being exposed. When the knob O on the side of the camera is pushed forward, a single frame is exposed. The variable shutter lever G, when closed allows the filmmaker to by-pass frames without exposing them and by disengaging the internal spring driven motor with lever D and fitting a small hand crank into the slot in Q, the film can be precisely moved forward and backward freely to any frame on the roll of film. In order to keep stray light from entering the viewfinder during the repositioning process with the variable shutter in the closed position, there is a light trap C in the light path of the reflex viewfinder.

The variable shutter also acts to adjust the shutter speed independently of the frame rate control M. This allows the filmmaker to do simple in-camera dissolves by slowly closing the variable shutter (with a thumb) while the camera is running, then back-winding the film with the small hand crank, and slowly raising the variable shutter (again with the thumb) when recommencing to expose the next scene. It also allows much more creative control over depth of field (the range of objects that are either in focus or out of focus in a scene) an effect that can be previewed in the viewfinder thanks to the reflex

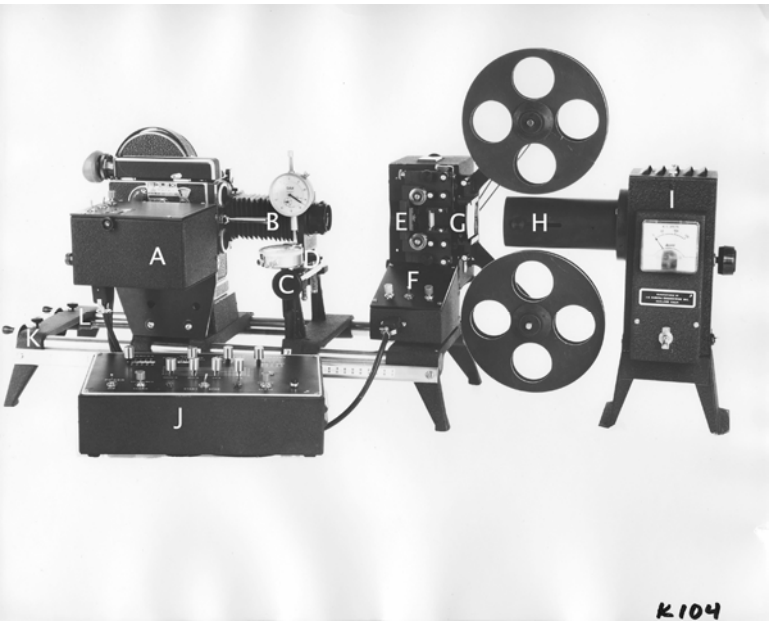
[114] See http://www.ubu.com/film/breer.html

viewing. In addition, the lever L allowed the filmmaker to choose whether individual frames were to be exposed at a shutter speed determined by the frame-rate knob M or to make time exposures of much longer durations.

The variable frame-rate control M allows the filmmaker to select camera run speeds from 8 to 64 frames per second. If the film is to be projected at 24 frames per second, exposing it at 8 fps makes the action appear to be three times faster than normal, and when exposing it at 64fps, to be 2 and 2/3 time slower than normal. The spring motor winding crank I allowed for a continuous run of approximately 15 feet of film. No batteries included, and none needed! The three-lens turret had places for lenses of various focal lengths, and the Switar lenses manufactured by Paillard were of exception sharpness and luminosity.

These cameras were relatively common and relatively inexpensive and their availability meant that films could be produced by individual artists with a financial and material economy typical of the status of poets and painters, allowing a cultural movement to develop where audience acceptance was far less of a consideration than the kind of visual experimentation afforded by this remarkable tool.

The J-K optical printer, which became available in the 1970's took the idea of film as an articulable image stream one step further. It allowed the film-artist to re-composed an *existing* filmstrip in myriad ways. There are typically two methods of reproducing films. By far the most common method is contact printing where the film containing an image is sandwiched against a strip of raw film stock and exposed to light in the process. This method simply duplicates the filmstrip and is used for making work prints from camera negatives or reversal (positive) camera original for editing, or for duplicating the edited films for release to movie theaters. The optical printer allows a strip of film containing an image to be re-photographed frame by frame. It was normally used in narrative films to introduce special effects through the compositing of many images onto one filmstrip, allowing for the re-composition of *space*. But it could also be used to scramble the sequence of images, allowing for *time* to be recomposed according to musical values (as in the frames of figure 3). Optical printers used by Hollywood were massive and complex affairs well beyond the economics of the individual artist. The J-K printer complemented the Bolex camera in its rugged and straightforward simplicity and affordable cost.



J-K Model K104 Optical Printer
(Photo courtesy of Jaakko Khouri)

A. Bolex electric motor drive
B. Lens extension bellows
C. X-axis alignment knob
D. Y-axis alignment knob
E. Projection gate
F. Manual projector stepping controls
G. Filter holder
H. Condenser assembly
I. Lamp housing
J. Camera/projector interface controller
K. Focusing knob
L. Z-axis adjustment knob

The J-K optical printer is essentially a movie camera aimed at a movie projector, with the camera focusing directly on the film plane of the projector. The bellows allows for many different degrees of magnification, so that the film being rephotographed can occupy either a portion of the camera's field of view or the camera can zoom in to rephotograph a small portion of the projected frame.

Acknowledgements:

Abbot Meader, Ian Robinson and Bill Wees were the three men responsible for my first exposure to personal/experimental films. Each, in their own way had a great deal to do with shaping my initial attitudes by extending an ethos of open-mindedness. Eugene Peters introduced me to the work of Wittgenstein and Quine. J.K. Shah gave me a first hand experience of Wittgenstinian language analysis. Ellen Saslaw provided both the consistent intellectual rigor that shaped my early thought and as well has been the philosophical fact-checker for this book. Tom Mapp first introduced me to Stan Brakhage and George Landow. Fred Camper was the curator of the MIT film society where I was first exposed to much new work and where I first met Saul Levine. Ken Jacobs was the first person of stature to recognize my contribution, and due to that recognition I met many of the important filmmakers of my era as an equal: Klaus Wyborny, Takahiko Iimura, Sidney Peterson, Robert Breer, Kurt Kren, Peter Kubelka, Ernie Gehr, Nam June Paik, Bill Brand, Margie Keller, Michael Snow, Carolee Schneeman, Yvonne Rainer, Tony Conrad, Anthony McCall, Larry Gottheim and many others, as well as the esteemed scholars, P.Adams Sitney, David Marc and Steve Anker – not to mention my wife, Gail Currey.

I also was given the opportunity during my years of teaching to meet scores of brilliant and outstanding students, notable among them Renee Shafransky, Steve Weisberg, Phil Soloman, Peter Herwitz, Nina Fonoroff and the late Mark Lapore; and my thinking owes an inestimable debt to the dialogues that ensued. In particular I would like to thank Konrad Steiner for pushing me to clarify and focus what were often vague and scattered thoughts and Nathaniel Dorsky and Jerome Heiler for elevating my sensibility.

I also want to thank Daniel Meyer-Dinkgrafe, the editor of this series for his steadying hand, Michael Punt for his perceptive criticisms and above all Amy Ione for her sharp eye, editorial insights and surgical encouragement in the completion of this book.

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Filmography

Anger, Kenneth

Fireworks, 1947, 16mm, b&w, sd, 15m

Eaux D'Artifice, 1953, 16mm, col, sd, 13m

Scorpio Rising 1963, 16mm, col, sd, 29m,

Invocation of My Demon Brother, 1969, 16mm, col, sd, 11m

Lucifer Rising, 1980, 16mm, col, sd, 30m

Ahwesh, Peggy

**Martina's Playhouse*, 1989 16mm, col, sd, 20m

Angerame, Dominic

*****Sambhoga-Kaya* 1982 16mm, b&w, sil, 6 m

Avery, Caroline

*****Big Brother* 1983 16mm, col, sil, 7 m

**Snow Movies* 1983 16mm, col, sil, 8 m

**Sonntag Platz* 1982 16mm, col, sil, 2.25 m

Bacigalupo, Massimo

**200 Feet For March 31st* 1968 16mm, b&w, sil, 10 m

Baillie, Bruce

**Mr. Hayashi* 1961, 16mm, b&w, sd, 3m

To Parsifal 1963, 16mm, col, sd, 16m

Mass For The Dakota Sioux 1963-1964, 16mm, b&w, sd, 20m

Quixote 1965, 16mm, b&w, col, sd, 45m

Tung 1966, 16mm, b&w, col, sil, 5m

Castro Street 1966, 16mm, b&w,col, sd, 10m

Quick Billy 1967-1970, 16mm, b&w, col, sd, 60m

Barnett, Daniel

****The Burning Tree* 1967, col,si, 3m

****The Steel Chickn* 1969 b&w, col, sd, 18m

****Portrait in Mercury* 1970, col,sil, 3min

****Untoward Ends* 1970 b&w, sil, 26m

Pull Out/Fallout 1974, 16mm, col, sd, 4m,

****Dead End, Dead End* 1974, col, sil, 22m

Morning Procession in Yangchow 1978-1981, 16mm, col, sd, 3.5m

***The Chinese Typewriter* 1978-1983, 16mm, col, sd, 28m

The Ogre 1970, 16mm, b&w, sd, 10m

White Heart 1975, 16mm, col, sd, 53m,

Tenent 1977, 16mm, color, sil, 5m

Popular Songs 1979, 16mm, color, sd, 18m

Endless 1987-1990, 16mm, b&w, sil, 45m (18fps)

The Cubist in Mexico 16mm, color, sil, 5m

An Anagram 2003, color,sd, 42m DVD

Bartlett, Scott

***1970* (1972) 16mm, col, sd, 29.25 min

***Metanomen* 1966 16mm, b&w, sd, 8 min

***Offon* 1968 16mm, col, sd, 9 min

**A Trip to the Moon* 1968 16mm, b&w, sd, 32.5 min

Benning, James

11 x 14 1976, 16mm, col, sd, 83m,

* Brakhage, Stan

(http://www.ubu.com/film/brakhage.html)

Desistfilm 1954, 16mm, b&w/sd, 7m

Reflections on Black 1955, 16mm, b&w, sd, 12m

The Wonder Ring 1955, 16mm, col, sil, 6m

Loving 1957, 16mm, col, sil, 6m

Anticipation of the Night 1958, 16mm, col, sil, 42m

Cat's Cradle 1959, 16mm, col, sil, 12m

Wedlock House: An Intercourse 1959, 16mm, col, sil, 11m

Window Water Baby Moving 1959, 16mm, col, sil, 12m

The Dead 1960, 16mm, col, sil, 11m

The Art of Vision 1961-65 16mm, col, sil, 250 min.

Thigh Line Lyre Triangular 1961, 16mm, col, sil, 5 m

Blue Moses 1962, 16mm, b&w, sd, 11m

Mothlight 1963, 16mm, col, sil, 4m

Fire of Waters 1965, 16mm, b&w, sd, 10m

Scenes From Under Childhood Section #1 1967, 16mm, col, sil, 25m

Scenes From Under Childhood Section #2 1969, 16mm, col, sil, 40m,

Scenes From Under Childhood Section #3 1969, 16mm, col, sil, 25m

Scenes From Under Childhood Section #4 1969, 16mm, col, sil, 25m

My Mountain: Song 27 1968 16mm, col, sil, 24-1/4 min

American 30s Song 1969, Reg 8mm b&w, sil, 35 minutes

The Animals of Eden and After 1970, 16mm, col, sil, 35m

The Machine of Eden 1970, 16mm, col, sil, 14m

The Weir-Falcon Saga 1970, 16mm, col, sil, 30m

The Act of Seeing With One's Own Eyes 1971, 16mm, col, sil, 32m

Deus Ex 1971, 16mm, col, sil, 35m

Sexual Meditation: Room With View 1972, 16mm, col, sil, 4m

Sexual Meditation: Faun's Room, Yale 1972, 16mm, col, sil, 3m

The Riddle of Lumen 1972, 16mm, col, sil, 17m

23rd Psalm Branch: Part I 1966/1978, 16mm, col, sil, 30m

23rd Psalm Branch: Part II 1966/1978, 16mm, col, sil, 30m (18fps),

Songs 1-7 1966/1980, 16mm, col, sil, 28m (18fps),

Songs 8-14 1966/1980, 16mm, col, sil, 30m (18fps)

Songs 16-22 1966-84, 16mm, col, sil, 49m

Songs 24, 25, & 26 Late 1960s, 16mm, col, sil, 14.5m (18fps)

Song 28 and Song 29 1966-1986, 16mm, col, sil, 8m (18fps)

*Beckman, Ericka

Cinderella 1986 16mm, col, sd, 28 min

*Berliner, Alan

City Edition 1980 16mm, b&w, sd, 9 mi

Myth in the Electronic Age (1981) 16mm, col, sd, 13 min

Natural History 1983 16mm, col, sd, 12.50 min

*Brand, Bill

Angular Momentum 1973, 16mm, col, sd, 20m,

Circles of Confusion 1974, 16mm, col, sd, 15m

Chuck's Will's Widow 1982, 16mm, col, sil, 13m,

Coalfields 1984, 16mm, col, sd, 39m

*Breer, Robert

(http://www.ubu.com/film/breer.html)

Jamestown Baloos 1957, 16mm, col, sd, 6m

A Man and His Dog Out for Air 1957, 16mm, b&w, sd, 3m

Blazes 1957, 16mm, b&w, sd, 3m

Fist Fight 1964, 16mm, col, sd, 11m

Homage to Jean Tinguely's Homage to New York 1968, 16mm, b&w, sd, 9.5m

69, 1968, 16mm, col, sd, 5m

Gulls & Buoys 1972, 16mm, col, sd, 7.5m

Fuji 1974, 16mm, col, sd, 8.5m

Rubber Cement 1976, 16mm, col, sd, 10m

Broderick, John

***Four Screen T. V. Film* 1968 Regular 8mm, col, sil, 15 m

** Broughton, James

(http://www.ubu.com/film/broughton.html)

Mother's Day 1948, 16mm, b&w, sd, 15m

The Bed 1968, 16mm, col, sd, 20m

Dreamwood 1972, 16mm, col, sd, 45m

High Kukus 1973, 16mm, col, sd, 3m

** Burckhardt, Rudy

Lurk 1965, 16mm, b&w, sd, 38m

Made in Maine 1970, 16mm, col, sd, 8m

Chambers, Jack and Olga

**Hart of London* 1970, 16mm, col, sd, 79 m

**Child, Abigail

(http://www.ubu.com/film/child.html)

Is This What You Were Born For? 1981-1987, 16mm, b&w/col, sd, 56m

**Clarke, Shirley

(http://www.ubu.com/film/clarke.html)

Bridges Go Round 1958, 16mm, col, sd, 3.5m

Cornell, Joseph

(http://www.ubu.com/film/cornell.html)

Conner, Bruce

Crossroads 1976, 16mm, b&w, sd, 36m

A Movie 1958, 16mm, b&w, sd, 12m

Conrad, Tony

***The Flicker* 1966, 16mm, b&w, sd, 30m

Film Feedback 1974, 16mm, b&w, sil, 15m

Couzin, Sharon

**Deutschland Speiegel* 1980 16mm, col, sd, 12 m

Dali, Salvador

(http://www.ubu.com/film/dali_impressions.html)

**Un Chien Andalou*

Deren, Maya

**At Land* 1944 16mm, b&w, sd, 14 m

**Divine Horsemen: The Living Gods of Haiti* 1977 16mm, b&w, sd, 54 m

**Meshes of the Afternoon* 1943 16mm, b&w, sd, 14 m

**Ritual In Transfigured Time* 1946 16mm, b&w, sd, 15 m

Dewdney, A. Keewatin

**Four Girls* 1967 16mm, b&w, sd, 2.5 m

**Malanga* 1967 16mm, b&w, sd, 3 m

****Maltese Cross Movement* 1967 col, sd, 7 m

**Scissors* 1967 16mm, b&w, sd, 5 m

Dorsky, Nathaniel

Ingreen 1964, 16mm, col, sd, 12m

Hours For Jerome, Part 1 & 2 1980-1982, 16mm, col, sil, 45m (24fps)

Pneuma 1977-1983, 16mm, col, sil, 28m (18fps)

Ariel 1983, 16mm, col, sil, 16m (18fps)

Alaya 1976-1987, 16mm, col, sil, 28m (18fps),

17 Reasons Why 1985-1987, 16mm, col, sil, 19m (18fps),

Triste 1974-1996, 16mm, col, sil, 18.5m (18fps)

Variations 1992-1998, 16mm, col, sil, 24m (18fps)

Arbor Vitae 1999/2000, 16mm, col, sil, 28m (18fps)

Love's Refrain 2000/2001, 16mm, col, sil, 22.5m, (18fps)

The Visitation 2002, 16mm, col, sil, 18m (18fps)

Threnody 2004 16mm col, sil, 25 m (18fps)

Song and Solitude 2005/2006, col, sil, 21 min (18 fps)

Eisenberg Daniel

***Displaced Person 1981*, 16mm, b&w, sd, 11m

Elder, Bruce

**Illuminated Texts* (1982) 16mm, col, sd, 176 m

Emshwiller, Ed

(http://www.ubu.com/film/emshwiller.html)

**Thanatopsis 1962, 16mm, b&w, sd, 5m

***Choice Chance Woman Dance* 1971 16mm, col, sd, 44 m

***George Dumpson's Place* 1965 16mm, col, sd, 8 m

**Relativity* 1966 16mm, col, sd, 38 min

Fischinger, Oskar

Study #5 1930, 16mm, b&w, sd, 3m

Study #6 1930, 16mm, b&w, sd, 3m,

Study #7 1931, 16mm, b&w, sd, 3m,

Study #8 1931, 16mm, b&w, sd, 4m

Circles (Kreise) 1933, 16mm, col, sd, 3m,

Squares 1934, 16mm, col, sil, 2m

Fisher, Holly

**Apple Summer* 1974 16mm, col, sd, 23.75 min

**Chickenstew* 1978 16mm, col, sd, 10.75 min

**From The Ladies* 1978 16mm, col, sd, 20 min

**Ghost Dance Wildwest Suite, Part III* 1980 16mm, col, sil, 22.75 min

**Glass Shadows* 1976 16mm, col, sd, 13.25 min

Fisher, Morgan

**The Director and His Actor Look at Footage Showing Preparations for an Unmade Film* 1968 16mm, col, sd, 15 min

**Phi Phenomenon* 1968 16mm, b&w, sil, 11 min

**Picture And Sound Rushes* 1973 16mm, b&w, sd, 11 min

**Production Stills* 1970 16mm, b&w, sd, 11 min

**Standard Gauge* 1984 16mm, col, sd, 35 min

Fonoroff, Nina

Department of the Interior 1986, 16mm, b&w, sd, *8.5m*

Accursed Mazurka 1994, 16mm, col, sd, *40m*

Frampton, Hollis

http://www.ubu.com/film/frampton.html

**Apparatus Sum (Studies For Magellan #1* 1972 16mm, col, sil, 2.30 min

**Artificial Light* (1969) 16mm, b&w, sil, 25 min

**Autumnal Equinox (Solariumagelani)* 1974 16mm, col, sil, 27 min

**Carrots and Peas* 1969 16mm, col, sd, 5.5 min

**Critical Mass (Hapax Legomena III* 1971 16mm, b&w, sd, 25.5 min

**Drafts & Fragments Straits of Magellan* 1974 16mm, col, sil, 51.25 min

**Lemon* 1969 16mm, col, sil, 7.30 min

**Maxwell's Demon* 1968 16mm, col, sd, 4 min

**Nostalgia (Hapax Legomena I*) 1973 16mm, b&w, sd, 36 min

**Otherwise Unexplained Fires* 1976 16mm, col, sil, 13.5 mi

**Prince Ruperts Drops* 196916mm, b&w, sil, 7 min

**Surface Tension* 1968 16mm, col, sd, 10 min

**Works and Days* 1969 16mm, b&w, sil, 12 mi

**Zorns Lemma* 1970 16mm, col, sd, 60 min

***Fried, Steve

Stairway (unknown) b&w, sil, 3m

* Friedrich, Su

Gently Down the Stream 1981, 16mm, b&w, sil, 14m (18fps)

Sink or Swim 1990, 16mm, b&w/sd, 48m

Fulton, Robert E.

Aleph 1982, 16mm, b&w, sil, 17.5m

Gehr, Ernie

http://www.ubu.com/film/gehr.html

**Morning*, 1968, 16mm, col, sil, 4.5m (16fps)

***** 1*968*, 16mm, col, sil, 7m (16fps)

Reverberation 1969 (revised 1986), 16mm, b&w, sound on tape cassette, 23m (16fps)

Serene Velocity 1970, 16mm, col, sil, 23m (16fps)

History 1970, 16mm, col, sil, 22 minutes (18fps)

Still 1969-1971, 16mm, col, sd, 55m

Shift 1972-1974, 16mm, col, sd, 9m,

Eureka 1974, 16mm, b&w, sil, 30m

Signal - Germany on the Air 1982-1985, 16mm, col, sd, 35m

*Side/Walk/*Shuttle 1991, 16mm, col, sd, 41m

Genet, Jean

**Un Chant D'Amour* 1950 16mm, b&w, sil, 26.5 min

Gibbons, Joe

Spying, Transferred from Super 8. 1978, VHS, col, si, 35m

Gordon, Bette

**Empty Suitcases* (1980) 16mm, col, sd, 48.75 min

**Noyes* (1976) 16mm, col, sd, 4 min

** Gottheim, Larry

Fog Line 1970, 16mm, col, sil, 11m

Barn Rushes 1971, 16mm, col, sil, 36m (18fps)

Doorway 1971, 16mm, b&w, sil, 8m

Horizons 1973, 16mm, col, sil, 80m,

**Mouches Volantes (Elective Affinities, Part II)* (1976) 16mm, b&w, sd, 69 min

Greenaway, Peter

**The Falls* 1980

**The Cook, The Thief, His Wife and Her Lover* 1989

**The Draughtsman's Contract* 1982

**Prospero's Books* 1991

**The Pillow Book* 1995

**Four American Composers* 1983 http://www.ubu.com/film/greenaway.html

Greenfield, Amy

**4 Solos For 4 Women* 1980 16mm, col, sd, 28 mi

**Dervish 2* 1972 16mm, col, sd, 18 min

Grenier, Vincent

Light Shaft 1975, 16mm, b&w, sil, 8m

X 1976 16mm, b&w, sil, 9m (18fps)

Interieur Interiors (to A.K.) 1978, 16mm, b&w, sil, 15m

Grooms, Red
**Fat Feet* 1966 16mm, col & b/w, sd, 18.25 m
**Ruckus Manhattan* 1976 16mm, col, sd, 61 m
**Shoot The Moon* 1962 16mm, b&w, sd, 24 m
**Tappy Toes* 1969 col, sd, 19 m
Harrington, Curtis
**On The Edge* 1949 16mm, b&w, sd, 6 m
Haslanger, Martha
Frames and Cages and Speeches 1976, 16mm, col, sd, 13m,
Lived Time 1978, 16mm, col, sil, 15m
Herwitz, Peter
Roses of Isfahan, 1985 super 8, col, sil 5 m
Edge of Water, 1985 super 8 , col,sil 4 m
Mysterious Barricades 1987 super 8, col,sil 8 m
The Poet's Veil 198816mm, col, sil 11 m
Two Poems(by Zukovsky) 1990 sound 5 m
**Hills Henry
http://www.ubu.com/film/hills.html
North Beach 1978, 16mm, col, sil, 12m
**Hindle, Will
Pastoral D'Ete 1958, 16mm, col, sd, 9m,
29: Merci Merci 1966, 16mm, b&w, sd, 30m
Chinese Firedrill 1968, 16mm, col, sd, 25m
Billabong 1969, 16mm, col, sd, 9m
Hoberman, Jim
*******Mission To Mongo* 1978 16mm, col, sd, 3.75 min
Hock, Louis
**Elements* 1972 16mm, col, sd, 10 mi
**Light Traps* 1975 16mm, col, sil, 10 min
**Still Lives* 1975 16mm, col, sd, 19 min
**Studies In Chronovision* 1975 16mm, col, 21.75 min
**Zebra* 1973 16mm, b&w, sil, 17.25 min
Huot, Robert
Cross-Cut--A Blue Movie 1968-69, 16mm, col, sil, 1m
Hutton, Peter
New York Near Sleep for Saskia 1972, 16mm, b&w, sil, 10m,
Images of Asian Music (A Diary from Life 1973-1974) 1973-1974, 16mm, b&w,sil, 29m
New York Portrait: Chapter One 1978-1979, 16mm, b&w, sil, 16m
**Iimura, Takahiko
http://www.ubu.com/film/iimura.html
On Eye Rape 1962, 16mm, b&w, sil, 10 min
Ai (LOVE) 1962-1963, 16mm, b&w, sil, 13.5m
White Calligraphy 1967, 16mm, b&w, sil, 15m

24 Frames Per Second 1975 (revised 1978), 16mm, b&w, sd, 12m
One Frame Duration 1977, 16mm, b&w/col, sd, 12m

Ivens, Joris
http://www.ubu.com/film/ivens.html
**The Bridge*, 1927-28, 11 m

Jacobs, Ken
http://www.ubu.com/film/jacobs.html
Little Stabs at Happiness 1959-1963, 16mm, col, sd, 15m
**Baud'larian Capers* 1963 16mm, DVD NTSC, col, sd, 15 m
**Blonde Cobra* 1963 16mm, col & b/w, sd, 33 m
**The Doctor's Dream* 1978 16mm, b&w, sd, 23 m
**Globe* 1971 16mm, col, sd on separate reel(s), 22m (previously titled: *EXCERPT FROM THE RUSSIAN REVOLUTION*)
**Nissan Ariana Window* 1969 16mm, col, sil, 14 m
**The Sky Socialist* 1965 16mm, col, sd, 90 m
**Soft Rain* 1968 16mm, col, sil, 12 m
**Star Spangled To Death* 2004 Four Disc DVD set, col & b/w, sd, 440 m
**Tom, Tom, The Piper's Son* 1969 16mm, color & b/w, silent, 115 m

Jacobson, Nora
**Approach* 1980 16mm, col, sil, 5.25 m
**Fin In A Leaden Waste* 1979 16mm, col, sil, 10 m

Jennings, Jim
**Chinatown* 1978 16mm, b&w, sil, 4.75 m
**Proximity* 1973 16mm, col, sil, 4 m

** Jordan, Lawrence
Duo Concertantes 1964, 16mm, b&w, sd, 9m
Gymnopedies 1965, 16mm, col, sd, 6m,
The Old House, Passing 1967, 16mm, b&w,sd, 45m
Our Lady of the Sphere 1969, 16mm, col, sd, 10m,

Jordan, Lawrence & Cornell, Joseph
3 by Cornell._Includes: COTILLION, THE MIDNIGHT PARTY, CHILDREN'S PARTY 1940s, 16mm, b&w/color tint, sil, 25m
3 More by Cornell 1940s, 16mm, b&w/color tint, sd, 24m,

**Keller, Marjorie
She/Va 1973, 16mm, col, sil, 3m
Misconception 1977, 16mm, col, sd, 42m
The Web 1977, 8mm, col, sil, 10m
Daughters of Chaos 1980, 16mm, col, sd, 20m

Kobland, Ken
Frame 1977, 16mm, col, sd, 10m
***Near and Far/Now and Then* 1979 16mm, col, sd, 28.5 m
Vestibule (in 3 Episodes) 1977-1978, 16mm, b&w, col, sd, 24m
Picking up the Pieces/3 Mis-Takes 1978, 16mm, col, sil, 11m

**Kren, Kurt

http://www.ubu.com/film/kren.html

1/57: Versuch mit synthetischem Ton (Test) 1957, 16mm, b&w, sd, 2m

2/60: 48 Kopfe aus dem Szondi Test (48 Heads from the Zondi Test) 1960, 16mm, b&w, sil, 5m

3/60: Baume im Herbst (Trees in Autumn) 1960, 16mm, b&w, sd, 5m

4/61: Mauern-Positiv-Negativ (Walls-Positive-Negative) 1961, 16mm, b&w, sil, 6m

5/62: Fenstergucker, Abfall, etc. (Windowlookers, Garbage, etc. 1962, 16mm, col, sil, 6m

6/64: Mama und Papa (Materialaktion: Otto Muehl) (Mama and Papa: An Otto Muehl Happening) 1964, 16mm, col, sil, 4m

7/64: Leda und der Schwan (Materialaktion: Otto Muehl) (Leda and the Swan: An Otto Muehl Happening) 1964, 16mm, col, sil, 3m

8/64: Ana (Aktion: Gunter Brus) (Ana: A Gunter Brus Action) 1964, 16mm, b&w, sil, 3m,

9/64: O Tannenbaum (Materialaktion: Otto Muehl) (O Christmas Tree: An Otto Muehl Happening, 16mm, col, sil, 3m

10/65: Selbstverstummelung (Self-Mutilation) 1965, 16mm, b&w, sil, 6m,

15/67: TV 1967, 16mm, b&w, sil, 4m

17/68: Grun - Rot (Green - Red) 1968, 16mm, col, sil, 3m

20/68: Schatzi 1968, 16mm, b&w, sil, 3m

24/70: Western 1970, 16mm, col, sil, 3m

28/73: Zeitaufnahme(n) (Time Exposure) 1973, 16mm, col, sil, 3m

31/75: Asyl (Asylum) 1975, 16mm, col, sil, 9m

32/76: An W + B 1976, 16mm, col, sil, 8m

33/77: Keine Donau 1977, 16mm, col. sil, 9m

4/77: Tschibo 1977, 16mm, col, sil, 2m

36/78: Rischart 1978, 16mm, col, sil, 3m,

37/78: Tree Again 1978, 16mm, col, sil, 4m

38/79: Sentimental Punk 1979, 16mm, col, sil, 5m

39/81: Which Way to CA? 1981, 16mm, b&w, sil, 4m

40/81: Breakfast im Grauen 1981, 16mm, b&w, sil, 4m,

41/82: Getting Warm 1982, 16mm, col, sil, 4m, 20m

42/83: No Film 1983, 16mm, b&w, sil, 3sec

43/84: 1984, 16mm, color, sil, 2m

44/85: Foot'-age Shoot'-out 1985, 16mm, col, sd, 4m

Krugman, Lee

**Dear Chuck* (1974) Regular 8mm, b&w, sil, 3 m

**Land & Sea* (1975) Regular 8mm, col, sil, 11.5 m

**Magoo Loop* (1974) Regular 8mm, b&w, sil, 5 m

**Kubelka, Peter

Mosaik im Vertrauen 1954-1955, 16mm, b&w/col, sd, 16.5m

Adebar 1956-1957, 16mm, b&w, sd, 1.5m
Schwechater 1957-1958,16mm, col, sd, 1m
Arnulf Rainer 1958-1960, 16mm, b&w/frames, sd, 6.5m
Unsere Afrikareise 1961-1966, 16mm, col, sd, 12.5m
Pause! 1977, 16mm, col, sd, 12m

**Kuchar, George
Hold Me While I'm Naked 1966, 16mm, col, sd, 15m
Color Me Shameless 1967, 16mm, b&w, sd, 30m
Eclipse of the Sun Virgin 1967, 16mm, col, sd, 15m

Kuchar, Michael
**The Craven Sluck* (1967) 16mm, b&w, sd, 22.5 m
**Sins of the Fleshapoids* (1965) 16mm, col, sd, 42.75 m

** Land, Owen
http://www.ubu.com/film/landow.html
**Fleming Faloon* 1963-64
**Film in Which There Appear Edge Lettering - Sprocket Holes - Dirt Particles - Etc.* 1965-66
**Bardo Follies* 1967
**Institutional Quality* 1969
Diploteratology 1967, 16mm, col, sil, 7m
Remedial Reading Comprehension 1970, 16mm, col, sd, 5m
What's Wrong With This Picture, Parts 1 and 2 1972, 16mm, b&w/col, sd, 10.5m,
No Sir, Orison 1975, 16mm, col, sd, 3m
Wide Angle Saxon 1975, 16mm, color/so, 22m
**The Film That Rises to the Surface of Clarified Butter* 1968, 16mm, b&w, sd

LaPore, Mark
The Sleepers 1989, 16mm, col, sd, 16m

Lawder, Standish
**Raindance (*1972) 16mm, col, sd, 16 m

Leger, Fernand
**Ballet Mechanique: Kiesler Version* (1924) 16mm, b&w, sil, 19.75 min

Lerman, Richard
**Sagittarius V* (1967) 16mm, b&w, sd, 6 m
**Third Book of Exercises* (1971) 16mm, b&w, sd, 15 m

**Levine, Saul
Queen of Night Gotta Box of Light 1965, 16mm, col, sil, 4m
Salt of the Sea 1965, 16mm, col, sil, 4m
Saul's Scarf 1966-1967, 8mm, col, sil, 21m
Tear/Or 1966-1967, 16mm, col, sil, 3.5m
Cat's Cradle Harp Wind Lock Heart 1967, 16mm, col, sil, 6m
Star Film 1968-1971, 16mm, col, sil, 15m
The Big Stick/An Old Reel 1967-1973, 16mm, b&w, sil, 17m (18fps)
Notes of an Early Fall (Part One) 1976, S8mm, col, sd, 33m, (18fps)

Rambling Notes 1976-77, 16mm, col, sil, 12 m
Not Even a Note 1978, S8mm, col, sil, 1.5m
Time to Go to Work 1978, S8mm, col, sd, 11m (18fps)
**Groove To Groove* (1980) 16mm, col, sd, 11.75 min
Raps and Chants, Part I 1981, S8mm, col, sd, 12m (18fps)
Breaking Time Part 1: Mortgage on My Body 1978-1983, 16mm, col, sil, 23m
Part 2: Arrested 1977-1983, 16mm, col, sil, 4m
Parts 3 and 4: Lien on My Soul and Portrait Not a Dream 1978-1983, 16mm, col, sil, 21m (18fps)
Note to Poli 1982-1983, S8mm, col, sil, 4m
A Brennen Soll Columbusn's Medina 1976-1984, S8mm, col, sd, 15m
Departure 1976-1984, S8mm, col, sd, 30m (18fps)
Shmateh II 1983-1984, S8mm, col, sd, 1.5m (18fps),
Shmateh III 1983-1984, S8mm, col, sd, 3.5m (18fps)
Submission 1988, S8mm, col, sd, 5m

Lipsett, Arthur
http://www.ubu.com/film/lipsett.html
21-87, 1963
**A Trip Down Memory Lane* 1965
* *Fluxes* 1968

Lye, Len
Kaleidoscope and Colour Flight 1935/1938, 16mm, col, sd, 8m

Maas, Willard
***Geography of the Body* 1943 16mm, black and white, sound, 7 m

MacLaine, Christopher
**The End* (1953) 16mm, col & b/w, sd, 34.75 m
**The Man Who Invented Gold* 1957 16mm, col, sd, 14 m
**Scotch Hop* 195916mm, col, sd, 5.5 m

McCall, Anthony
Line Describing a Cone 1973, 16mm, b&w, sil, 30m,

Markopoulos, Gregory
http://www.ubu.com/film/markopoulos.html
N.B. The films of Gregory Markopoulos have been withdrawn from distribution as of this date.

***Matsuoka, Hiromi
Reds and Blues 1987, col, sil, 8m

Mead, Taylor
**Home Movies - Rome/Florence/Venice/Greece* 1965 16mm, col, sil, 14 m

Meader, Abbott
Winterspring 1966 16mm, b&w, sil, 10m
Shadows From The Western Wall 1973-74, 16mm, col/b&w sd 12m

** Mekas, Adolfas
Hallelujah the Hills 1965, 16mm, b&w/sd, 82m

**Mekas, Jonas
http://www.ubu.com/film/mekas.html
**Guns of the Trees* 1962 16mm, b&w, sd, 75 m
**He Stands in a Desert Counting the Seconds of His Life* 1985 16mm, col, sd, 150 min
The Brig 1964, 16mm, b&w, sd, 68m
**Notes For Jerome* 1978 16mm, col, sd, 45 min
Notes on the Circus 1966, 16mm, col, sd, 13m
Reminiscence of a Journey to Lithuania 1971-1972, 16mm, col, sd, 82m

Menken, Marie
http://www.ubu.com/film/mencken.html
**Arabesque for Kenneth Anger* 16mm, col, sd, 4 min
**Eye Music in Red Major* (1961) 16mm, col, sil, 5.5 min
**Mood Mondrian* (1965) 16mm, col, sil, 5.5 min

Murphy, J.J.
Print Generation 1973-1974, 16mm, col, sd, 50m

Myers, Richard
Akran 1969, 16mm, b&w, sd, 118m

Nelson, Gunvor
Schmeerguntz 1966, 16mm, b&w, sd, 15m
Fog Pumas 1967, 16mm, col, sd, 25m,
My Name Is Oona 1969, 16mm, b&w, sd, 10m,
Before Need 1979, 16mm, col, sd, 75m

Nelson, Robert
Oh Dem Watermelons 1965, 16mm, col, sd, 11m
Hot Leatherette 1967, 16mm, b&w, sd, 5m
The Off-Handed Jape 1967, 16mm, col, sd, 9m,
Bleu Shut 1970, 16mm, col, sd, 30m,
Hamlet Act 1982, 16mm, b&w, sd, 21m

**O'Neill, Pat
77362 1965-1967, 16mm, col, sd, 10m
Runs Good 1971, 16mm, col, sd, 15m
Saugus Series 1974, 16mm, col, sd, 18m
Sidewinder's Delta 1976, 16mm, col, sd, 20m

** Peterson, Sidney
http://www.ubu.com/film/peterson.html
The Cage 1947, 16mm, b&w, sil, 25m,
Clinic of Stumble 1947, 16mm, col, sd, 16m,
The Potted Psalm 1947, 16mm, b&w, sil, 25m
The Petrified Dog 1948, 16mm, b&w, sd, 18m
The Lead Shoes 1949, 16mm, b&w, sd, 18m,
Mr. Frenhofer and the Minotaur 1949, 16mm, b&w, sd, 21m,

Plays, Dana
**Across the Border* 1982 16mm, col, sd, 8 min

Rainer, Yvonne
(Distribution unknown)
Lives of Performers 1972
Film About a Woman Who… 1974
Kristina Talking Pictures 1976
Journeys From Berlin 1980
Rayher, Robert
***Palimpsest I/Palimpsest II* 1979 16mm, Super 8, col/b&w, sd, 3 m
** Palimpsest III* 1980 16mm, b&w, sd, 3 m
***This is Only a Test* 1980 16mm, col, sd, 11 m
**Traces* 1985 16mm, col/ b&w, sil, 63 m
Rice, Ron
http://www.ubu.com/film/rice.html
**Chumlum* 1964 16mm, DVD NTSC, col, sd, 26 m
**The Flower Thief* 1960 16mm, b&w, sd, 75 m
**The Queen of Sheba Meets the Atom Man* 1982 16mm, b&w, sd, 109 m
Senseless 1962 16mm, b&w, sd, 28 m
Richter, Hans
**Film Study* 1926 16mm, b&w, sd, 3.45 m
**Ghosts Before Breakfast* 1927-28 16mm, b&w, sd, 6.5 m
**Rhythm 21* 1921 16mm, b&w, sil, 2.5 m
**Rhythm 23* 1923 16mm, b&w, sd, 2.5 m
Rimmer, David
http://www.ubu.com/film/rimmer.html
Surfacing on the Thames 1970, 16mm, col, sil, 8m (18fps)
Variations on a Cellophane Wrapper 1970, 16mm, col, sd, 8m
Rose, Peter
http://www.ubu.com/film/rose.html
*Digital Speech 1984 16mm, col, sd, 13 m
*The Pressures of the Text 1983 16mm, col, sd, 17 m
Study in Diachronic Motion 1975, 16mm, col, sil, 3m,
Analogies 1977, 16mm, col, sd, 14m,
The Man Who Could Not See Far Enough 1981, 16mm, col, sd, 33m
Secondary Currents 1982, 16mm, b&w, sd, 18m
Ross, Ken
**Blessed in Exile* 1979 16mm, col, sd, 13.45 min
Rubin M. Jon
**The Who* 1969 16mm, col, sd, 3 min
Serra, Richard
http://www.ubu.com/film/serra.html
**Color Aid* 1970-71, 16mm col, sd, 22m
** Schneemann, Carolee
http://www.ubu.com/film/schneeman.html
Fuses 1964-1967, 16mm, color/sil, 22m,

Plumb Line 1968-1972, 16mm, col, sd, 18m

** Sharits, Paul

Piece Mandala/End War 1966, 16mm, b&w/col, sd, 5m

Ray Gun Virus 1966, 16mm, col, sd, 14m

N:O:T:H:I:N:G 1968, 16mm, col, sd, 36m

T,O,U,C,H,I,N,G 1968, 16mm, col, sd, 12m,

S:TREAM:S:S:ECTION:S:ECTION:S:S:ECTIONED 1968-1971 16mm, col, sd, 42m

Color Sound Frames 1974, 16mm, col, sd, 26.5m,

Analytical Studies III: Color Frame Passages 1973-1974, 16mm, col, sil, 22m

Analytical Studies IV: Blank Color Frames 1975-1976, 16mm, col, sil, 15m

Luther Schofill, John

**Filmpiece For Sunshine* 1968 16mm, col, sd, 24 m

**Xfilm (1968)* 16mm, col, sd, 14 m

Smith, Jack

http://www.ubu.com/film/smith_jack.html

Scotch Tape 1959-1962, 16mm, col, sd, 3m,

Flaming Creatures 1963, 16mm, b&w, sd, 45m,

** Snow, Michael

New York Eye And Ear Control 1964, 16mm, b&w, 34m,

Wavelength 1966-1967, 16mm, col, sd, 45m

<-> (Back and Forth) 1968-1969, 16mm, col, sd, 52m

One Second in Montreal 1969, 16mm, b&w, sil, 26m (16fps)

Breakfast 1972-1976, 16mm, col, sd, 15m

Presents 1980-1981, 16mm, col, sd, 90m

La Region Centrale 1971, 16mm, col, sd, 180m

Solomon, Phil

The Passage of the Bride 1979-1980, 16mm, b&w, sil, 6m,

Nocturne 1980 (revised 1989), 16mm, b&w, sil, 10m

What's Out Tonight Is Lost 1983, 16mm, col, sil, 8m (16fps)

The Secret Garden 1988, 16mm, color/si, 23m

The Exquisite Hour 1989 (revised 1994), S8mm and 16mm, col, sd, 14m

Remains to Be Seen 1989 (revised 1994), S8mm and 16mm, col, sd, 17.5m

Sonbert, Warren

Carriage Trade 1971, 16mm, col, sil, 61m

Spinello, Barry

**Soundtrack* 1969 16mm, col/b&w, sd, 10 m

Stark, Scott

Chromesthetic Response 1987, 16mm, col, sd, 6m

The Sound of his Face 1988, 16mm, col, sd, 12m

Satrapy 1988, 16mm, col, sd, 13m,

Protective Coloration 1990, 16mm, col, sd, 17.5m

Steiner, Konrad

Fireside 1983, 16mm, col, sil, 8m

Lyric Auger 1985, 16mm, col, sil, 10m,
End Over End 1978-1988, 16mm, col, sil, 13m
LIMN I-III, 1986-1988, 16mm, col, sil, 17m
LIMN IV, 1988, 16mm, col, sil, 13m
Remains, 1990, 16mm, col, sil, 13m
19 Scenes Relating to a Trip to Japan, 1989-1998, 35mm, col, sd, 15m
Floating By Eagle Rock/She is Asleep, 1998, 16mm, col, sd, 17m,
Bum Series, 2001, 16mm, sd, 4m

Theise, Eric S.
Renga, 1989, 16mm, col/b&w, sil, 6 m

Thornton, Leslie
*****Adynata* (1983) 16mm, col, sd, 30 m
*****Peggy And Fred In Hell (Prologue)* 1988 16mm, b&w, sd, 19 m

**Vanderbeek, Stan
http://www.ubu.com/film/vanderbeek.html
Blacks and Whites, Days and Nights, 1960, 16mm, b&w, sd, 5m
Skullduggery, 1960, 16mm, b&w, sd, 5m
Panels for the Walls of the World 1962, 16mm, b&w, sd, 8m,
Breathdeath 1964, 16mm, b&w, sd, 15m

Warhol, Andy
Not currently in distribution
Chelsea Girls 1966, 195m
Vinyl 1963, 70m

** Wallin, Michael
Fearful Symmetry 1981, 16mm, col, sil, 15m
Decodings 1988, 16mm, b&w, sd, 15m,

Weisberg, Steven
**Dog Show* 16mm, b&w, sd, 8 m
**Familial Scenes* 1981 16mm, col, 9 m
**Happy Birthday* 1975 16mm, col, 5 m
**Kiss It Goodbye* 1979 16mm, col, 4 m
**A More Perfect Union* 1982 16mm, col, sd, 10 m
**Steve's Watering Apparatus* 1982 16mm, color, 3 m
**To Die Dreaming Or/Welcome to the Third Anniversary of the Revolution* 1983 16mm, col, sd, 5 min

Weisman, Phil
Schubert's Lantern 1974, 16mm, b&w, sil, 3m (18fps)

** Wieland, Joyce
1933 1967, 16mm, col, sd, 4m,
**Rat Life And Diet In North America* 1968 16mm, col, sd, 16 m
Sailboat 1967 16mm, col, sd, 3m
La Raison Avant la Passion 1968-1969, 16mm, col, sd, 80m

Wilkins, Timoleon
Night Rose 1992 16mm, col, sil, 4m

Below Angel World 1993 16mm, col, sd, 11m
Tree 1994, 16mm, col, sd, 4m

Wright, Charles
Sorted Details 1980, 16mm, col, sd, 13m

Zdravic, Andrej
Sunhopsoon 1976, 16mm, col, sd, 8m
Anastomosis 1982, 16mm, col, sd, 57m

* Available only from N.Y. Filmmaker's Co-op
** Available From Canyon Filmmaker's Co-op and N.Y. Filmmaker's Co-op
*** Private Collection
Others available only from Canyon Filmmaker's Co-op, San Francisco
Some films also available from Canadian Filmmakers Co-op
Warhol and Markopoulos not currently available.

Index