

# THE MODERNIST STREAM

A VISUAL STREAM OF MODERNISM TO 21ST CENTURY ALL AND EVERYTHING NOW

BOB COTTON



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>> So, above, this is a bibliographic timeline of the issues I summarise in this book/pdf *The Modernist Stream*. I try to trace developments in Modernism, and especially the central idea of the *Stream of Consciousness*, through literary, graphic, animation, film montage, and spatial information design, and also tie these to fundamental developments in science and Technology - Quantum Theory - from 1900, and Relativity (1905), through Ecology (Janale: *British Ecology Society* 1913., Systems Theory (from Bogdanov's 1917), Radio (c1920), Quantum Mechanics (1925), Biosphere (from Vernadsky 1926), Digital Computing (from c1936), Television (1936), through satellites (from 1945) and Vannevar Bush: *The Memex* (1945) to Transistors (1948), Cybernetics (1948), Information Theory (1948), Robotics (1949) to Realtime Computers (1950), System Dynamics (c1958), ARPA (1958), Packet-switching (c1962), General Systems Theory (1968), Whole Earth Catalog (1968), The ARPANet (1969), Microprocessor (1971), Internet (c1972), Supercomputer (1976) and so on to, Digital Media (c1972), WWW (1990), Google (1998), and our current 24/7 media environment and steps toward Quantum Computers and Large Language Models.. In Art, I allude to Abstraction (c1902), Fauvism (c1905), Cubism (1908), Futurism (1909), Dada (1916), Constructivism (1919), Expressionism ((1919), Surrealism (1922), Abstract Expressionism (1943), Pop Art (c1948), Kinetic Art (1956), Happenings (1959), Conceptual Art (1961), Fluxus (1962), Performance Art (1962), and so on..., Finally, I summarise recent developments in GPT-LLM, Machine-Learning and other AI, and recent ecological and climate-related issues. This is my *Stream of Modernism* as of August 2023...

## What we mean by Modernism

"Modernism, in the fine arts, meant a break with the past and the concurrent search for new forms of expression. Modernism fostered a period of experimentation in the arts from the late 19th to the mid-20th century, particularly in the years following World War I. In an era characterized by industrialisation, the nearly global adoption of capitalism, rapid social change, and advances in science and the social sciences (e.g., Freudian theory), Modernists felt a growing alienation incompatible with Victorian morality, optimism, and convention. New ideas in psychology, philosophy, and political theory kindled a search for new modes of expression." (*Encyclopedia Britannica*)

"Modernism - modern character or quality of thought, expression, or technique. a style or movement in the arts that aims to depart significantly from classical and traditional forms. "...by the post-war period, modernism had become part of art history" a movement towards modifying traditional beliefs in accordance with modern ideas." (Tate)

"Modernism is a philosophical, religious, and arts movement that arose from broad transformations in Western society during the late 19th and early 20th centuries. The movement reflected a desire for the creation of new forms of art, philosophy, and social organization which reflected the newly emerging industrial world, including features such as urbanization, architecture, new technologies, and war. Artists attempted to depart from traditional forms of art, which they considered outdated or obsolete. The poet Ezra Pound's 1934 injunction to "Make it New" was the touchstone of the movement's approach." (Wikipedia)

New Decades in new Centuries arrive with rush of optimism, a buzz of appraisal and reappraisal, and an overwhelming desire for change. And this is what happened from 1900 to 1910 and beyond...and now we call it *Modernism*... In my own life, it was in the 1960s that I got my first taste of the New, the excitement of intellectual, emotional and visceral charge. I was fifteen, I'd discovered for myself the stomping, gyrating power of Little Richard Penniman's *Tutti Frutti* four years earlier, when his 78rpm recording was issued. I'd also discovered Jack Kerouac's 'beat' books: *On the Road*, and *The Subterraneans* - both signature studies of alternatives to the grey-suited, short-back and sides future that the 1950s had threatened. And I'd realised the rather bleak outlook of nuclear weapons and the Cold War, the petrol shortages and rationing of post-war Britain. I'd joined CND and in the early Sixties, Ray Foulk and I had started a local branch: West Wight CND and met with boyfriends and girlfriends at the Foulk's house in Totland Bay, where we plotted and planned little demos. I've written about this at more length in my *The Sixties Art Media Revolution* (2023), but let's refocus on the 1900s, and let's *Make it New*. For me (as I argue in this illustrated essay), the pioneering psychologist William James is the centre point of that cultural switch we call Modernism. In 1890, analysing how we think, he described our human experience of our own consciousness as a stream of being, a *stream of consciousness*. I argue that this new definition not only inspired adventures in literary style (by eminent modernists like James Joyce, Virginia Woolf and John Dos Passos, etc), but it also inspired visual artists to make radical redefinitions in painting, in collage and photomontage, and in film-making, in what Sergei Eisenstein called *intellectual montage*, the contextual editing of film shots into image-streams that provoked streams of thought, sensations and associations in the viewer akin to streams of consciousness. In the teens and Twenties, the same desire to evoke these streams, provoked free-form improvisation in Jazz in both music and lyrical interpretation - in vocalese and scat-singing as well as Louis Armstrong's sublime extrapolations in flugelhorn and trumpet. In the same period, the stream was apparent in new photographic styles like Pictorialism, in painting styles such as Fauvism, Cubism, Futurism and Expressionism. And the art of Photomontage, sketched-out by Dadaists and Russian Constructivists, pushed the art of collage into new graphic styles, merging type letterforms, graphic forms and photo-imagery to create seamless flows of visual communication appropriate to the social and political revolutions after the Great War.



## The dawning years of the 20th century (1900 to 1910)

The rapid flow of images in the cinema, merging together miraculously in the eye and brain of the viewer, had a tremendous impact on our sensibilities (according to art-historian Natasha Staller, Picasso and Braque frequented the movies several times a week in the early 1900s) and the rapid on-screen juxtapositions of perspective (the perspectives and camera-angles of this character and that, this long-shot, this close-up - *seen and experienced for the first time* in this period (1900-1910) may have had a considerable influence in their questioning of the single-person, monoscopic *vanishing-point perspective* of painting ). In Relativity and in the Cubist vision there is no single *point of view* - no preferred fixed perspective. This and other concomitance's of *Relativity* (Einstein 1905) and the *4th dimension* (Minkowski 1903) were popular-science talking-points 1900-1908, thanks to the news, and the speculations of Poincare, Lorentz, Bergson, Minkowski, and others in the popular-science press (these articles discussed by *La Bande a Picasso*. (Picasso of course, and Max Jacob, Georges Braque, André Salmon, Paul Éluard, Jean Cocteau, André Derain, Alfred Jarry and Guillaume Apollinaire et al) - these artists, poets and intellectuals naturally discussed Space/Time, the 4th Dimension and perhaps especially the impossibility of a fixed point of view in any new art...(See: Leonard Schlain *Art and Physics - Parallel Visions in Space, Time and Light* 1993; Arthur Miller: *Einstein Picasso Spece, Time and the Beauty that causes Havoc* 2001; John Berger: *The Success and Failure of Picasso* 1965; Natasha Staller: *A Sum of Destructions - Pablo Picasso and the Creation of Cubism* 2001; Esprit Jouffret: *Traité élémentaire de géométrie à quatre dimensions* 1903; John Richardson: *A Life of Picasso 1907-1917 A Painter of Modern Life* 1996 ).

So, the flow of ideas during this time embraced news of scientific developments (Röntgen: X-Rays 1895, Planck: *Quanta* theory(1900), Einstein: *Relativity*) (1905), the kind of Twentieth century art that may develop; (Matisse *Fauvism* (1904), *Cubism* (1908), *Futurism* (1909) and so on...) the new media of *Cinematography* (Lumiere 1895), *Autochrome* colour photography (Lumiere 1903), *Animation* (Cohl 1908) and the large-scale immersive simulations of the 1900 *Paris Exposition Universelle* (d'Alesi: *Mareorama*; Lumiere's: *Photorama*; Grimoin-Sanson: *Cineorama* - all 1900), let alone the phenomena of Alfred Jarry's *Ubu Roi* (1902), George Melies *Le voyage dans la Lune* (1902); the 1907 *Cezanne retrospective* exhibition, *The Ballets Russes* (Diaghilev 1909); *The Exposition Coloniale de Paris* (1906) and all the other sometimes shocking delights of the modernist flow in this period. Probably the most shocking in Picasso's personal circle was of course, *Demoiselles d'Avignon* (1907), but this wasn't shown publicly until 1916. The time was right for a new art-form, and it turned out to be several new 'art movements' and revolutionary new art from individuals like Gustav Klimt (1901); Duchamp's *Nude Descending* (1912), le Douanier Rousseau's *Primitivism* (1910); all this alongside other art-forms: Alphonse Mucha's great paintings and graphics (from c1896); George Bellows (*Ashcan School* 1909), Albert Kahn's *Planetary Archive* (photographing in colour all the peoples of the world from 1909), Sergei Prokudin-Gorsky: *Colour photo-documentary archive of the Russian Empire* (from 1909), Giorgio de Chirico: *Metaphysical Paintings* (from 1909); Emilie Flogue's *Secessionist fashions* (1909). Hilma Af Klint and Wassily Kandinsky *Spiritualist* influenced *Abstract Paintings* (from 1910), Piet Mondrian's *Blue Tree* paintings (1910) - and lots more, and so on, a joyful barrage of ideas, artefacts, art and new media, pouring out of the new century, creating *Art Nouveau* en route. This was *Modernism* in our Western culture, in the 20th century.



## The Stream of Consciousness as an agent of change

As I said, the aim of this article is to summarise the impact of the cultural ingestion of William James' idea of the *stream of consciousness* (1890) during the birth of *Modernism* in the later 19th and early 20th century - specifically in the importance of graphic collage, photomontage and temporal or filmic montage in our culture - all, in their distinct ways impacting on fine-art, and the new mass media of illustrated newspapers and magazines, advertising and the art of graphic-design, animation and film. The adventures in this *visual stream of consciousness*, impacting upon us through Cubism, Futurism, Dada and Surrealism, is matched by the impact of stream of consciousness in literature, and landmark examples of this are included in the work of Dorothy Richardson, James Joyce, Virginia Woolf, John Dos Passos, Thomas Wolfe and other avant-garde writers in the first few decades of the 20th century.

First we will list some of causal agents of Modernism - the rapid industrialisation of Western Europe and America, the global adoption of free-market capitalism (Hobsbawm dates this as c1848-1875), the social labour reforms and trade unionism that followed, and the equally rapid urbanisation of the West, the adoption of railways, steam and petrol engines, and electric-lighting, all this resulting in radically new social and cultural change. It was an era (the *Belle Epoque*) when 'modern clothes' began to appear for men and women (the 20th century suit for men, 'rational dress' for women). It was the period of the *flaneur*, the *Yellow Book*, *Des Essientes*, Isadora Duncan, Albert Einstein, Edward Gordon Craig, Oscar Fingal O'Flaherty Wills Wilde, Alfred Jarry, Konstantin Stanislavski, Emilie Flöge, Aubrey Beardsley, Isadora Duncan, Georges Melies, Jean Cocteau, Guillaume Apollinaire, the Ballets Russes, Hilma af Klint, the *Weiner Werkstatte* and *l'Art Nouveau...* As well as major break-throughs in fundamental science (Planck's *Quanta* hypothesis, Einstein's *Relativity*, Freud's *Psycho-analysis*, Roentgen's *X-Rays* etc), as well as breakthroughs in the technological media-arts (colour-photography, the movies, animation, mass-publishing, sound recording, wireless telegraphy, radio etc).

The elegant description (at last) of *consciousness* by William James in 1890, and Freud's *Interpretation of Dreams* (1899) raised issues of how we think (in a *stream of consciousness* and how we may be affected by a *dynamic unconscious*), and how our allusive thought-streams work, ideas that were radically different from the 'Gutenberg effect' (the simple cause and effect logic of Print, and rational dissertation, described much later in the 20th century by Elizabeth Eisenstein and Herbert Marshall McLuhan); and consequently its impact on writers, artists, musicians, the dance, the theatre, the ballet, film-makers, film-theorists (indeed virtually the entire span of culture). The 'stream' of our thinking, our ad-libbed conversation, our inspirations, our chit-chat, our 'brain-storms', our verbal inspirations - and our creative processes in art, in music improvisations, in making collage, in montage - contextually editing film - and in the stand-up's flow of wit, all these aspects of the cultural upheaval of modernism, interrogated and deepened and contextualised by a parallel upheaval in cognitive researches (Freud: *Interpretation of Dreams*, Jung *the Collective Unconscious*, Wertheimer: *Gestalt Psychology*, etc) laid the foundation for Modernism.

First I want to look at some literary examples of '*stream of consciousness* writing', focussing on Dos Passos *USA* (1930-1937) and Joyce's *Finnegan's Wake* (1922-1939)

I want to go on to examine the 20th century arts of *collage* and *photo-montage* and their extension in time in *film-montage* and space in *multi-screen non-linear creations*. The processes of research, selection, cropping and glueing of collage ingredients are akin to the stream of consciousness in writing, in conversation. A similar process of selection or choice of imagery, the cropping of images and printed words, and the building of a collage work towards collage as a means of expressing your thoughts, observations, feelings, emotions, memories..

(see David Lodge: *Consciousness and the Novel* 2002 - "[the richest record we have of human consciousness](#)" Harvard University Press)



In his *The Principles of Psychology* (1890), the philosopher and psychologist William James outlined his definition of the common-to-all experience of ourselves - of our consciousness:

**“Consciousness, then, does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly as it presents itself in the first instance. It is nothing jointed; it flows. A 'river' or a 'stream' are the metaphors by which it is most naturally described. In talking of it hereafter, let us call it the stream of thought, of consciousness, or of subjective life”.**

William James 1890

Kenneth Pope and Jerome Singer: “Introduction: The Flow of Human Experience”

“The stream of consciousness - that flow of perceptions, purposeful thoughts, fragmentary images, distant recollections, bodily sensations, emotions, plans, wishes, and impossible fantasies - is our experience of life, our own personal life, from its beginning to its end. As scientists, we may approach the subject for the joy of discovering how it works. As clinicians, therapists and social engineers, we may study it in order to reduce human suffering. But simply as people, we are drawn to it precisely because it is that portion of our being at most familiar and most mysterious.” (Kenneth S. Pope and Jerome Singer (eds): *The Stream of Consciousness* 1978)

As artists, we attempt to tap into this *stream of being* to reveal more of how and why we exist, how and why we think, and of how and why we help create narratives, coherent chains of reasoning, descriptions, images and ideas for telling our stories, organising our views, our insights, our visions, and our protests about the world we perceive. And of course as teachers or mentors, how we rationalise or represent this flow - and the learning experience about it - and the thrill of it - to others.

We attempt to direct our life-stream to examine if we are having individual thoughts, and/or how far we are being influenced by others (as described in their writing, their philosophies, their autobiographies, their conversations, their art, their poetry, or expressed in their being - our experience of them as people, as interlocutors, as friends, as objects of affection or correlation or love (or the opposite). We need to examine all these aspects of our inner life, to check the veracity of how we think, how we feel, how we live, how we work, how we relate to others... This stream of experience that embraces a wide spectrum of consciousness (that includes being conscious, semi-conscious, alert and conversing, free-thinking, fantasising, hypnagogic waking dreams, auto-noetic time-travelling, day-dreams, or nocturnal dreaming, hallucination, in spiritual musings, spiritual awareness, and what we call bliss, or ecstasy. There's also that experience of what the psychologist Csikszentmihalyi calls 'Flow' and others call 'Form' (that feeling of total concentration and complete immersion in an activity that seems to satisfy our intellect, our emotions, our sense of meaning - all at the same time).

I've always been fascinated by the stand-up's *modus-operandi*, which must be close or akin to the direct tapping into their *stream of being*, perhaps mitigated by context, by audience, by current news. I remember I was with C.P Lee at one of his theatrical gigs at the Angel, and we were joined by Johnny Cooper Clarke (someone C.P. knew well), and how quickly I was lost in the combined flow of Mancunian common hipster vernacular, and shared cleverness, observations, quips, asides, puns, metaphors, comments, stories, etc that was the result of this intermingled and shared *modus operandi*. Lately this, the art of Wit, and the stand-up comedian, has been associated with AD/HD condition - a condition considered a gift by many comedians...



# The Modernist Stream

## Modernism and the Stream of Consciousness

The impact of James' definition of consciousness, I will argue, triggered a period of radical re-appraisal - by philosophers, neuro-scientists and artists (including visual artists and writers) of creativity itself. How might this have happened? Well first of all, such an insight would have raised several - perhaps hundreds of questions - especially those regarding the nature of creativity itself: how do we get ideas? Why are we creative? How do inventions come about? What is creativity - the act of bringing something new into the world? These kind of questions, faced anew in the light of James' definition of *how we think*, would have been of special interest to any creative person, and even more especially to the members of *La Bande a Picasso* - that group of artists, intellectuals, poets, playwrights and critical thinkers, that both Picasso and Gertrude Stein entertained at *Le Bateau Lavoir*, and at Stein's own *Atelier*, at the numerous *Vernissage* or private views she held. The *Bande* included an inner circle - of Andre Salmon, Guillaume Apollinaire, Georges Braque and Maurice Princet, and a wider peripatetic group that included Jean Cocteau, Alfred Jarry, Andre Derain, Henri Matisse, the dealer Vollard, and the Steins - all of them busy speculating in the early 1900s, what would a new art for a new century look like, what would it say? Their conversations, their arguments, their boisterous repartee, the cut and thrust of debate included the hot sciences - stories of the fourth dimension, of space and time, and of relativity - the impossibility of a fixed perspective, the nature of perspective itself - a dogma for artists since the Renaissance. All these issues, and of course, the spectacular simulated 'rides' of the *Exposition Universelle* of 1900, the current exhibitions of their own Picasso - the Cezanne retrospective, the paintings of Derain and Matisse, fresh from their summer expedition to Collioure - and the revelations of the pre-cinema movie-shows and the centime Nickelodeons with their Mutoscopes, Kinetoscopes and flick-book entertainments so *au courant* in the capital city of their birth. The informed babble of their discourse - shouted loud the song of their quest for new solutions, new ways of appraising these new revelations - all created a stream of ideas - a combined stream of consciousness that became the bedrock of Fauvism, Cubism, Futurism and Abstraction - the new arts of the Modern.

Imagine this as a generational phenomenon - a megastream of consciousness happening all over Paris, as the poets, painters, intellectuals - and mere *flaneurs* - debated the astonishing rapidity of centennial cultural upheaval as sudden insights and innovations became headlines, and magazine articles and topics of conversation - and otherwise dominated the realworld social media of the time. Imagine the bubbling swell of this combined consciousness especially amongst *La Bande a Picasso*, where it was amplified by the huge egos and combined world-class talents of Apollinaire, Jarry, Matisse, Derain and Braque, and given gravitas and clout by Gertrude Stein and Alice Toklas, and fiscal credibility by Ambrose Vollard. Might this torrent of creative consciousness not have underpinned, catalysed and cascaded Cubism and Fauvism upon the expectant and thirsty for change culture of Paris and Montmartre?

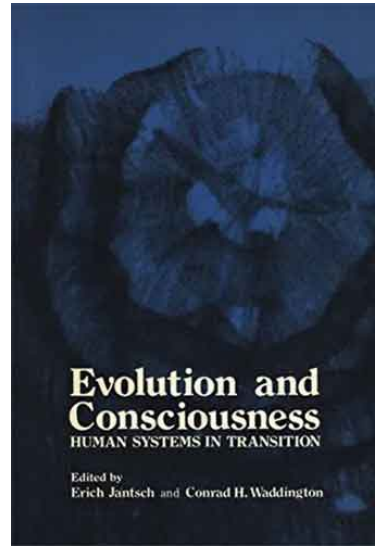
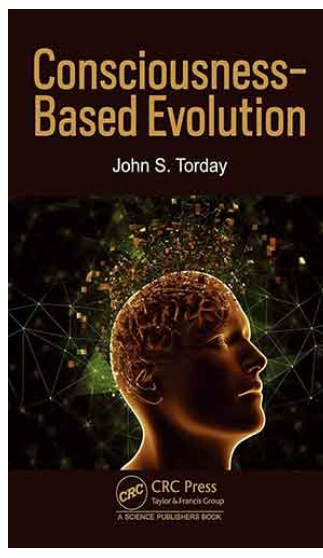
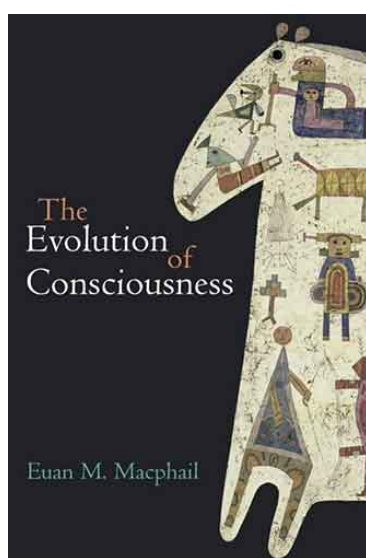
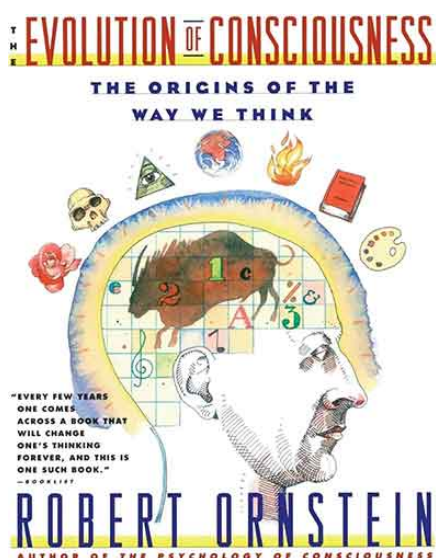
The evidence is circumstantial I confess - but what circumstances! When else had the cultures of science, art and technology collided together like this? And you would cite the Renaissance I know, where the adoption of Moorish perspective and German moveable typeface print technology had stolen God's own viewpoint and made it the possession of monocular man, and Calvinist man too, and set in train all the chains of repercussions noted by Marshall McLuhan and Elizabeth Eisenstein.

quotes on consciousness

"The study of the origin and evolution of consciousness presents several problems. The first problem concerns terminology. The word consciousness comes from the Latin term *conscientia* that means "knowledge shared with others." However, the term consciousness also refers to several other aspects involving both its levels (sleep, coma, dreams and waking state) and contents (subjective, phenomenal and objective). A second issue is the problem of other minds, namely, the possibility to establish whether others have minds very like our own. Moreover, human consciousness has been linked to three different forms of memory: procedural/implicit, semantic and episodic. All these different aspects of consciousness will be discussed in the first part of the chapter. In the second part, we discuss different neuroscientific theories on consciousness and examine how research from developmental psychology, clinical neurology (epilepsy, coma, vegetative state and minimal state of consciousness), neuropsychology (blindsight, agnosia, neglect, split-brain and ocular rivalry), and comparative neuropsychophysiology contribute to the study of consciousness. Finally, in the last part of the chapter we discuss the distinctive  
Imagine of human consciousness and in particular the ability to travel mentally through time, the phenomenon of joint intentionality, theory of mind and language".(Origin and evolution of human consciousness. (Fabbro et al: *Progress in Brain Research* 2019)

"We are living in a culture entirely hypnotized by the illusion of time, in which the so-called present moment is felt as nothing but an infinitesimal hairline between a causative past and an absorbingly important future. We have no present. Our consciousness is almost completely preoccupied with memory and expectation. We do not realize that there never was, is, nor will be any other experience than present experience. We are therefore out of touch with reality." Alan Watts

"There have been various attempts to apply Darwinian evolutionary theory to an understanding of the human condition within psychology and the social sciences. This paper evaluates whether Darwinian Theory can explain human consciousness. Starting with a brief definition of phenomenal consciousness and the central features of evolutionary theory, the paper examines whether random variations in the genome that confer a selective, reproductive advantage can explain both the emergence of consciousness and its varied forms. To inform the discussion, the paper reviews what is known about the conditions for consciousness within the human mind/brain, understood in both structural (neural) terms and functional terms (in terms of human information processing), and concludes that "random variations in the genome" provide no explanatory mechanism for why some neural activities (but not others) are accompanied by consciousness. The paper then evaluates the many functional advantages that have been proposed for various forms of phenomenal consciousness once they emerge, and concludes that, on close examination, phenomenal experiences themselves do not carry out the information processing functions attributed to them, which challenges the Darwinian requirement that they could only have persisted (once emergent) if they enhanced reproductive fitness. The paper turns finally to what can be said about wider distribution of consciousness in non-humans, contrasting discontinuity theories with continuity theories. Discontinuity theories argue for a critical functional transition that "switches on consciousness" while continuity theories argue for a gradual transition in consciousness from unrecognisable to recognisable. All theories accept that there is an intimate, natural relationship of conscious experiences with their associated material forms. Consequently, as the material forms evolve, their associated experiences co-evolve—suggesting an indirect mechanism by which the emergence of species-specific forms of consciousness can be influenced by Darwinian evolution. It also allows a non-reductive understanding of human consciousness within the social sciences." (Max Velmans: *The Evolution of Consciousness* 2012)









## intro to stream of consciousness in writing..

"...*stream of consciousness* is a narrative mode or method that attempts 'to depict the multitudinous thoughts and feelings which pass through the mind' of a narrator."

(J. A. Cuddon, *A Dictionary of Literary Terms*, Penguin Books, 1984), pp. 660–1).

"While many sources use the terms *stream of consciousness* and *interior monologue* as synonyms, the *Oxford Dictionary of Literary Terms* suggests that 'they can also be distinguished psychologically and literarily. In a psychological sense, stream of consciousness is the subject matter, while interior monologue is the technique for presenting it'. And for literature, 'while an interior monologue always presents a character's thoughts 'directly', without the apparent intervention of a summarising and selecting narrator, it does not necessarily mingle them with impressions and perceptions, nor does it necessarily violate the norms of grammar, or logic – but the stream-of-consciousness technique also does one or both of these things.'" (*Oxford Dictionary of Literary Terms* 2009)

"Human consciousness... can best be understood as the operation of a ... virtual machine implemented in the parallel architecture of a brain that was not designed for any such activities. The powers of this virtual machine vastly enhance the underlying powers of the organic hardware on which it runs." (Daniel Dennett: *Consciousness Explained* 1994)

The idea that the brain acted like a computer had been broached as far back as 1950 by Alan Turing, and in 1988 the MIT AI professor Marvin Minsky described how the hardware (the 'wetware') of the brain could possibly run several 'programs' simultaneously in what he called '*A Society of Mind*' (Minsky: *The Society of Mind* 1988).

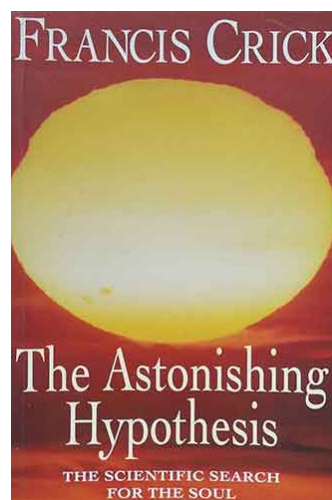
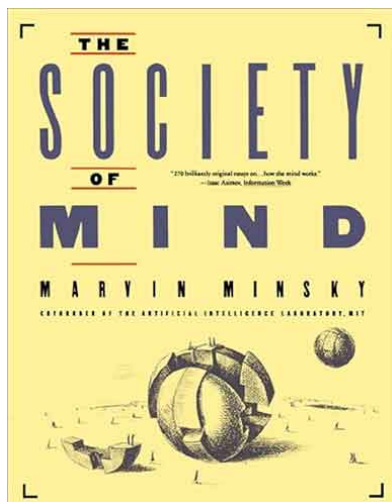
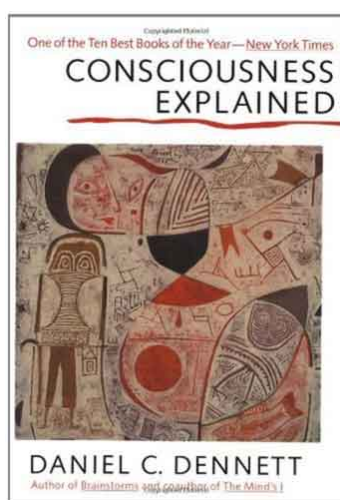
"The functions performed by the brain are the products of the work of thousands of different, specialized sub-systems, the intricate product of hundreds of millions of years of biological evolution. We cannot hope to understand such an organization by emulating the techniques of those particle physicists who search for the simplest possible unifying conceptions. Constructing a mind is simply a different kind of problem—of how to synthesize organizational systems that can support a large enough diversity of different schemes, yet enable them to work together to exploit one another's abilities." |Minsky, M: *Logical vs. Analogical or Symbolic vs. Connectionist or Neat vs. Scruffy*. In: *Artificial Intelligence at MIT, Expanding Frontiers*, Patrick H. Winston (Ed.), Vol 1, MIT Press, 1990.)

Summarised by Push Singh of MIT Media Lab: "*The Society of Mind* summarises a lifetime of work by a founder of and perhaps the most influential single individual in the field of Artificial Intelligence. It provides the first articulation of a computational theory of mind that takes seriously the full range of things that human minds do. In this article we could only examine a small fraction of the full Society of Mind theory, and we encourage the reader to go back to the book and read it cover to cover. The Society of Mind is more than just a collection of theories—it is a powerful catalyst for thinking about thinking. Minsky encourages the reader to ponder questions about the mind that they may never have thought to ask, and provides hundreds of examples of how one might start down the road towards answering such questions. In our experience it has been useful to return to the book once each year, as it is written at level of abstraction where each reading brings out new ideas and reflections in the mind of the reader.

It remains a curious fact that the AI community has, for the most part, not pursued Society of Mind-like theories. It is likely that that Minsky's framework was simply ahead of its time, in the sense that in the 1980s and 1990s, there were few AI researchers who could comfortably conceive of the full scope of issues Minsky discussed—including learning, reasoning, language, perception, action, representation, and so forth. Instead the field has shattered into dozens of subfields populated by researchers with very different goals and who speak very different technical languages. But as the field matures, the population of AI researchers with broad perspectives will surely increase, and we hope that they will choose to revisit the Society of Mind theory with a fresh eye. (Singh: *Examining the Society of Mind* 2003)

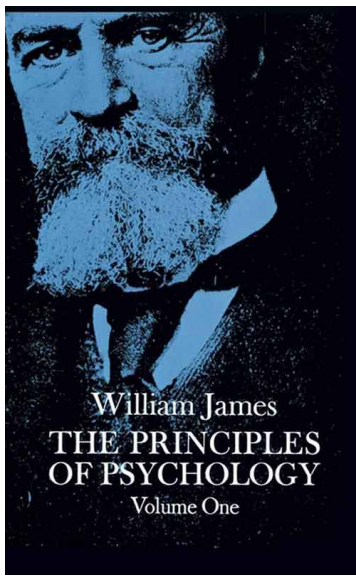
The theory itself has not stopped developing. The Society of Mind represents a snapshot in time of Minsky's ideas, and he will soon publish a sequel, *The Emotion Machine* [9], that will describe the many ideas that Minsky has had about the mind since the late 1980s. However, we predict that *The Society of Mind* will still be read decades from now, when other AI books have long become outdated, and that it will continue to inspire and challenge future generations. And in time, we expect that the fundamental hypothesis of the book will be finally proved:

What magical trick makes us intelligent? The trick is that there is no trick. The power of intelligence stems from our vast diversity, not from any single, perfect principle." [2, Section 30.8]



These three important books on Consciousness, all published late 1980s to early 1990s, marked a revival of scientific interest in consciousness after the interregnum of Behaviourism that had limited studies of the Mind to known neural correlates. A collection of essays on consciousness, edited by Roy Ascott: *Art, Technology, and Consciousness* 2012; and *Telematic Embrace: Visionary Theories of Art Technology and Consciousness* 2003, included papers by artists.





Edited by Kenneth S. Pope and Jerome L. Singer

## The Stream of Consciousness

Scientific Investigations into the Flow of Human Experience



# U.S.A.

THE 42<sup>nd</sup> PARALLEL  
NINETEEN NINETEEN  
THE BIG MONEY

ALL THREE VOLUMES COMPLETE AND UNABRIDGED IN ONE

## John Dos Passos

"Alone among U.S. writers, John Dos Passos has taken as his subject the whole U.S.A. and attempted to organize its chaotic, high-pressure life into an understandable artistic pattern. To find an equivalent for his nationalism one must look abroad to Tolstoy's *War and Peace*, to Balzac's *Comédie Humaine*, to James Joyce's *Ulysses*."—*Time*



# Ulysses [excerpt]

**James Joyce, 1882 - 1941**

## *Molly Bloom's closing soliloquy*

...and Gibraltar as a girl where I was a Flower of the mountain yes when I put the rose in my hair like the Andalusian girls used or shall I wear a red yes and how he kissed me under the Moorish wall and I thought well as well him as another and then I asked him with my eyes to ask again yes and then he asked me would I yes to say yes my mountain flower and first I put my arms around him yes and drew him down to me so he could feel my breasts all perfume yes and his heart was going like mad and yes I said yes I will Yes. (James Joyce: *Ulysses* 1922)

The examples cited in these following few pages give some idea of the literary style of *stream of consciousness* - it seems to go with the feeling of being instantaneously recorded, a kind of *automatic writing* favoured by the surrealists, a flow written with little or no post-editing - perhaps with no editing at all. These are our many attempts to inject the flavour of our mode of thinking - its use of instantaneity, juxtaposition, the fusion of ideas, the synaesthetic feelings and sensations, constantly shifting attention, interjection of memories, emotions, associations. For me John Dos Passos in his *America* trilogy, illustrates the range of stream of consciousness best suited to describing the helter skelter, the range and speed of capitalist industry and brokerage - and the pace of life experienced by many - in the 'Roaring Twenties' replete with potted biographies of movers and shakers - and trade unionists, left-wing rebels, episodic portraits, news synopses, cuttings from posters, headlines, press correspondence, mixed with adverts, street-signs, graffiti - in other words from every image/signal/message device, plus Dos Passos' personal experience and the projected thoughts and feelings of his characters and subjects.



## examples from Dorothy Richardson, Thomas Wolfe, Virginia Woolfe's Orlando, Dos Passos...

**Dorothy Richardson is widely credited with writing the first stream of consciousness novel:**

"It was a fool's errand.... To undertake to go to the German school and teach ... to be going there ... with nothing to give. The moment would come when there would be a class sitting round a table waiting for her to speak. She imagined one of the rooms at the old school, full of scornful girls.... How was English taught? How did you begin? English grammar ... in German? Her heart beat in her throat. She had never thought of that ... the rules of English grammar? Parsing and analysis.... Anglo-Saxon prefixes and suffixes ... gerundial infinitive.... It was too late to look anything up. Perhaps there would be a class to-morrow.... The German lessons at school had been dreadfully good.... Fräulein's grave face ... her perfect knowledge of every rule ... her clear explanations in English ... her examples.... All these things were there, in English grammar.... And she had undertaken to teach them and could not even speak German.

Monsieur ... had talked French all the time ... dictées ... lectures ... Le Conscrit ... Waterloo ... La Maison Déserte ... his careful voice reading on and on ... until the room disappeared.... She must do that for her German girls. Read English to them and make them happy.... But first there must be verbs ... there had been cahiers of them ... first, second, third conjugation.... It was impudence, an impudent invasion ... the dreadful clever, foreign school.... They would laugh at her.... She began to repeat the English alphabet.... She doubted whether, faced with a class, she could reach the end without a mistake.... She reached Z and went on to the parts of speech." (Dorothy M. Richardson: *The Pointed Roofs* 1915. Courtesy of Project Gutenberg)

This

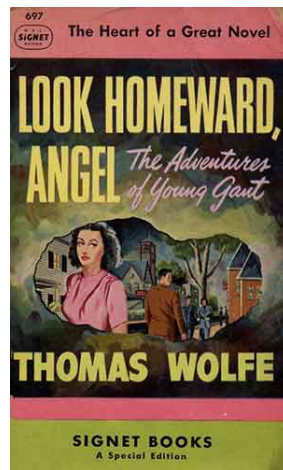
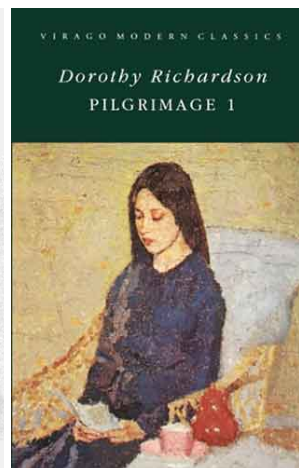
"An Englishman named Gilbert Gaunt, which he later changed to Gant (a concession probably to Yankee phonetics), having come to Baltimore from Bristol in 1837 on a sailing vessel, soon let the profits of a public house which he had purchased roll down his improvident gullet. He wandered westward into Pennsylvania, eking out a dangerous living by matching fighting cocks against the champions of country barnyards, and often escaping after a night spent in a village jail, with his champion dead on the field of battle, without the clink of a coin in his pocket, and sometimes with the print of a farmer's big knuckles on his reckless face. But he always escaped, and coming at length among the Dutch at harvest time he was so touched by the plenty of their land that he cast out his anchors there. Within a year he married a rugged young widow with a tidy farm who like all the other Dutch had been charmed by his air of travel, and his grandiose speech, particularly when he did Hamlet in the manner of the great Edmund Kean. Every one said he should have been an actor."

(Thomas Clayton Wolfe: *Look Homeward, Angel: A Story of the Buried Life*.1929)

"Orlando's fathers had ridden in fields of asphodel, and stony fields, and fields watered by strange rivers, and they had struck many heads of many colours off many shoulders, and brought them back to hang from the rafters. So too would Orlando, he vowed. But since he was sixteen only, and too young to ride with them in Africa or France, he would steal away from his mother and the peacocks in the garden and go to his attic room and there lunge and plunge and slice the air with his blade. Sometimes he cut the cord so that the skull bumped on the floor and he had to string it up again, fastening it with some chivalry almost out of reach so that his enemy grinned at him through shrunk, black lips triumphantly. The skull swung to and fro, for the house, at the top of which he lived, was so vast that there seemed trapped in it the wind itself, blowing this way, blowing that way, winter and summer. The green arras with the hunters on it moved perpetually. His fathers had been noble since they had been at all. They came out of the northern mists wearing coronets on their heads. Were not the bars of darkness in the room, and the yellow pools which chequered the floor, made by the sun falling through the stained glass of a vast coat of arms in the window? Orlando stood now in the midst of the yellow body of an heraldic leopard. When he put his hand on the window-sill to push the window open, it was instantly coloured red, blue, and yellow like a butterfly's wing. Thus, those who like symbols, and have a turn for the deciphering of them, might observe that though the shapely legs, the handsome body, and the well-set shoulders were all of them decorated with various tints of heraldic light, se quill in the ink."

(Virginia Woolf: *Orlando A Biography* 1928 - Courtesy of Project Gutenberg, Australia)

The novelist David Lodge, in his *Consciousness and the Novel*, analyses the various means that authors deploy in writing about how their characters think, of which 'stream of consciousness' is probably the most complete, encompassing as it does not only the literary, narrative thoughts of the character, but their feelings, their memories, their sensations, the impact of qualia - the sensations of seeing colour, experiencing pain, joy, regret, nostalgia, the sublimity or pain of touch (etc). According to Lodge, there seems to be no doubt (in Literary criticism) that the Novel is the most successful means we currently have to convey the experience of Being, and that the 'style' now known as *Stream of Consciousness* is the most successful in achieving this.





1. Episode ONE (27 pages, from 003 to 029)

Full FW Text	FW Line		
FW003			
riverrun, past Eve and Adam's, from swerve of shore to bend	1		
of bay, brings us by a commodius vicus of recirculation back to	2		
Howth Castle and Environs.	3		
Sir Tristram, violer d'amores, fr' over the short sea, had passen-	4		
core rearrived from North Armorica on this side the scraggy	5		
isthmus of Europe Minor to wielderfight his penisolate war: nor	6		
had topsawyer's rocks by the stream Oconee exaggerated themselfe	7		
to Laurens County's gorgios while they went doublin their mumper	8		
all the time: nor avoice from afire bellowsed mishe mishe to	9		
tauftauf thuartpeatrick: not yet, though venissoon after, had a	10		

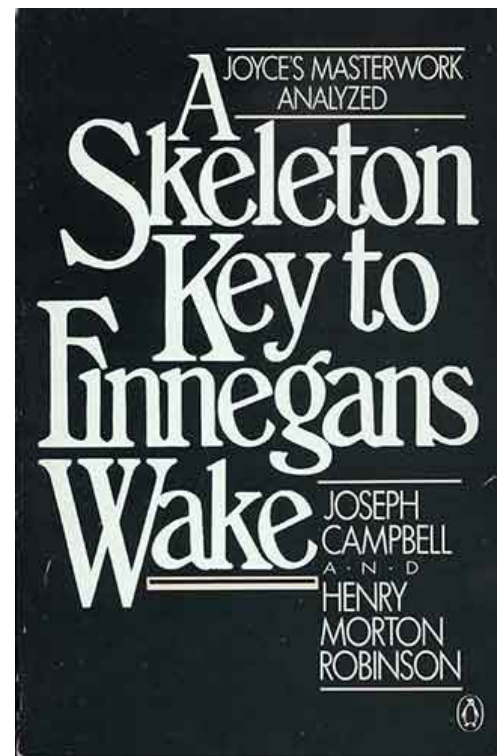
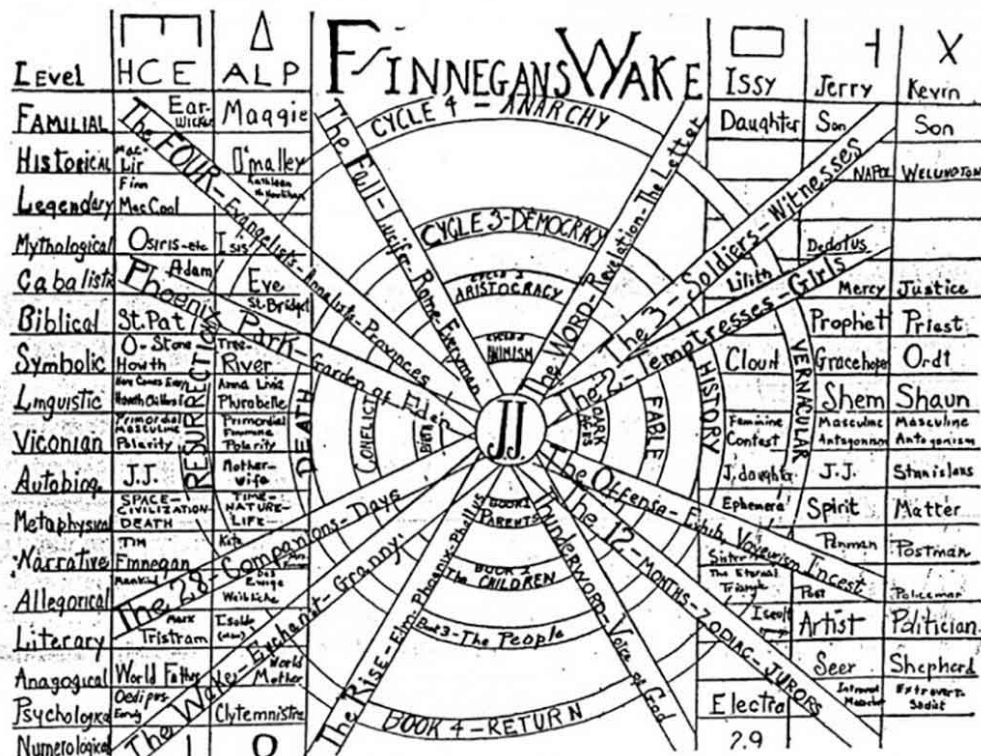


http://editura.mtlc.ro

Bucuresti 2014

James Joyce: *Finnegans Wake* (1939) in 2014. lines 033 to 029 as linearised by Contemporary Literature Press.

This remarkable, perhaps ultimate, (and perhaps unreadable) multi-lingual modernist stream of consciousness novel, even considering that it benefitted from the mythographer Joseph Campbell's *A Skeleton Key (to Finnegans Wake)* a few years after publication, and an explanatory diagram by Lazlo Moholy-Nagy in 1946 too. But perhaps the most useful cognitive tool is the linearisation by the Contemporary Literature Society (sample above). In the first page you get Howth Castle, just south and east of Dublin, where *Portrait of the Artist as a Young Man* is set, and the Arthurian cycle (Sir Tristram, North Amorica) as well as local vernacular, multi-lingual puns and metonyms adding to the intense richness of Joyce's unique experiment.



Lazlo Moholy Nagy: *diagram of Finnegans Wake* 1946 (above right:) Joseph Campbell + Morton Robinson: *A Skeleton Key to Finnegans Wake* 1944)



BODY FOUND LASHED TO BICYCLE  
FIND BOMB CLOCKWORK

*Tin Lizzie*

"Mr. Ford the automobileer," the featurewriter wrote in 1900,

"Mr. Ford the automobileer began by giving his steed three or four sharp jerks with the lever at the righthand side of the seat; that is, he pulled the lever up and down sharply in order, as he said, to mix air with gasoline and drive the charge into the exploding cylinder. . . . Mr. Ford slipped a small electric switch handle and there followed a puff, puff, puff. . . . The puffing of the machine assumed a higher key. She was flying along about eight miles an hour. The ruts in the road were deep, but the machine certainly went with a dreamlike smoothness. There was none of the bumping common even to a streetcar. . . . By this time the boulevard had been reached, and the automobileer, letting a lever fall a little, let her out. Whiz! She picked up speed with infinite rapidity. As she ran on there was a clattering behind, the new noise of the automobile."

For twenty years or more,

ever since he'd left his father's farm when he was sixteen to get a job in a Detroit machinshop, Henry Ford had been nuts about machinery. First it was watches, then he designed a steamtractor, then he built a horseless carriage with an engine adapted from the Otto gasengine he'd read about in *The World of Science*, then a mechanical buggy with a onecylinder fourcycle motor, that would run forward but not back;

at last, in ninetyeight, he felt he was far enough along to risk throwing up his job with the Detroit Edison Company, where he'd worked his way up from night fireman to chief engineer, to put all his time into working on a new gasoline engine,

(in the late eighties he'd met Edison at a meeting of electriclight employees in Atlantic City. He'd gone up to Edison after Edison had delivered an address and asked him if he thought gasoline was practical as a motor fuel. Edison had said yes. If Edison said it, it was true. Edison was the great admiration of Henry Ford's life);

and in driving his mechanical buggy, sitting there at the lever

jauntily dressed in a tightbuttoned jacket and a high collar and a derby hat, back and forth over the level illpaved streets of Detroit, scaring the big brewery horses and the skinny trotting horses and the sleekrumped pacers with the motor's loud explosions, looking for men scatterbrained enough to invest money in a factory for building automobiles.

He was the eldest son of an Irish immigrant who during the Civil War had married the daughter of a prosperous Pennsylvania Dutch farmer and settled down to farming near Dearborn in Wayne County, Michigan;

like plenty of other Americans, young Henry grew up hating the endless sogging through the mud about the chores, the hauling and pitching manure, the kerosene lamps to clean, the irk and sweat and solitude of the farm.

He was a slender, active youngster, a good skater, clever with his hands; what he liked was to tend the machinery and let the others do the heavy work. His mother had told him not to drink, smoke, gamble or go into debt, and he never did.

When he was in his early twenties his father tried to get him back from Detroit, where he was working as mechanic and repairman for the Drydock Engine Company that built engines for steamboats, by giving him forty acres of land.

Young Henry built himself an uptodate square white dwelling-house with a false mansard roof and married and settled down on the farm,

but he let the hired men do the farming;

he bought himself a buzzsaw and rented a stationary engine and cut the timber off the woodlots.

He was a thrifty young man who never drank or smoked or gambled or coveted his neighbor's wife, but he couldn't stand living on the farm.

He moved to Detroit, and in the brick barn behind his house tinkered for years in his spare time with a mechanical buggy that would be light enough to run over the clayey wagonroads of Wayne County, Michigan.

By 1900 he had a practicable car to promote.

\* \* \*

**John Dos Passos: 'Tin Lizzie' (the Henry Ford sketch-bio) page-spread from *The Big Money* - part three of the USA trilogy 1936.**

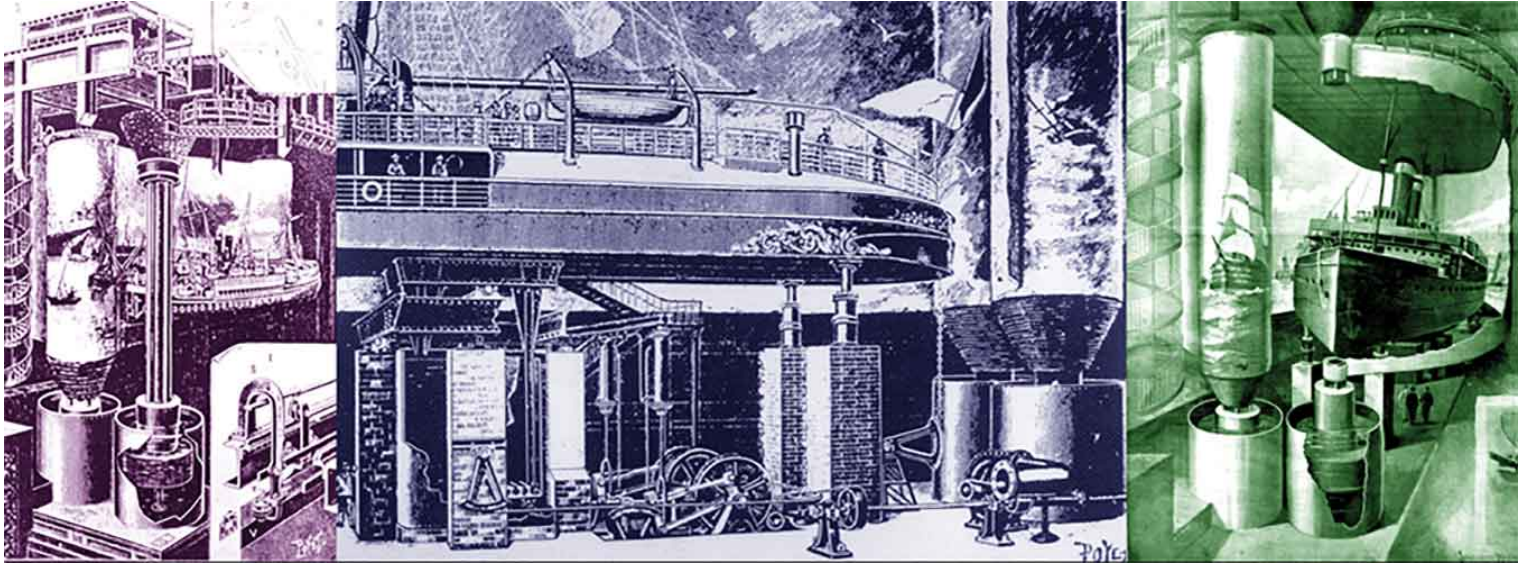
Dos Passos' whole three-part novel follows episodically several key-characters who personify the drive of the decade (*The 'Roaring Twenties'*) - the engineer-entrepreneurs, the monopoly capitalists, the anti-capitalist protesters, the unionists, and other, otherwise 'ordinary' folks as they are impacted by this race to wealth and riches and the discovery of the power of stocks and shares as the money markets became tools or traps for the rich and the middle-class alike, and a new mythology for the poor. The increasing disparity between rich and poor - in education, health, outlook and means - and the increasing power of money - and stock gambling - is pointed-up. The sketch-biographies of the real movers and shakers - including Henry Ford, Fred Winslow Taylor, Thomas Edison, William Randolph Hearst, J.P. Morgan, Isadora Duncan, Rudolph Valentino, Orville and Wilbur Wright, - in contrast, Dos Passos features sketch biographies of the socialist Eugene Debs, the radical economist Thorstein Veblin, and the labour unionist Joe Hill - and Dos Passos enlivens these sketches with his 'camera-eye' technique - a montage of thoughts, observations, emotions, and his frequent 'Newsreels' - contextual summaries of headlines, article excerpts, echoing Dziga Vertov's *Kino-Pravda* (cine-truth) montage technique of the same period. Dos Passos holds his tale together with episodic fictional biographies of characters representative of Twenties 'types', altogether providing a kaleidoscopic literary montage of America in the Twenties and early Thirties, often using the *stream of consciousness* technique to reinforce the eye-witness tone of his writing. It's the *immediacy* and *immersion* of Dos Passos' response to the speed of change as America industrialises with Fordism that reinforces his eye-witness, journalistic style.



## Cubism and Stream of Consciousness

The non-linear-perspective that Picasso and his avant-garde contemporaries were searching for - to express the modernity of the 20th century, emerged in all kinds of ways, many of them in Montmartre, around the cluster of shantytown studios near Picasso's studio at the *Bateau Lavoir*. Matisse and his colleagues, including André Derain, Maurice de Vlaminck and others were by 1905 establishing what became known *Les Fauves* - radically challenging realistic colour and perspective. Georges Braque, inspired and influenced by Paul Cezanne, followed him in the attempt 'to make something more solid out of impressionism' and the lightning-rod that was Picasso during this period, was exploring, in his pink and blue periods, and in the ever-flowing welter of his conversations and repartee with his *la Bande à Picasso*, the impact of the sciences on avant-garde painting - especially the impact of the fourth dimension and the relativity of space/time, and what this all implied for the artist.

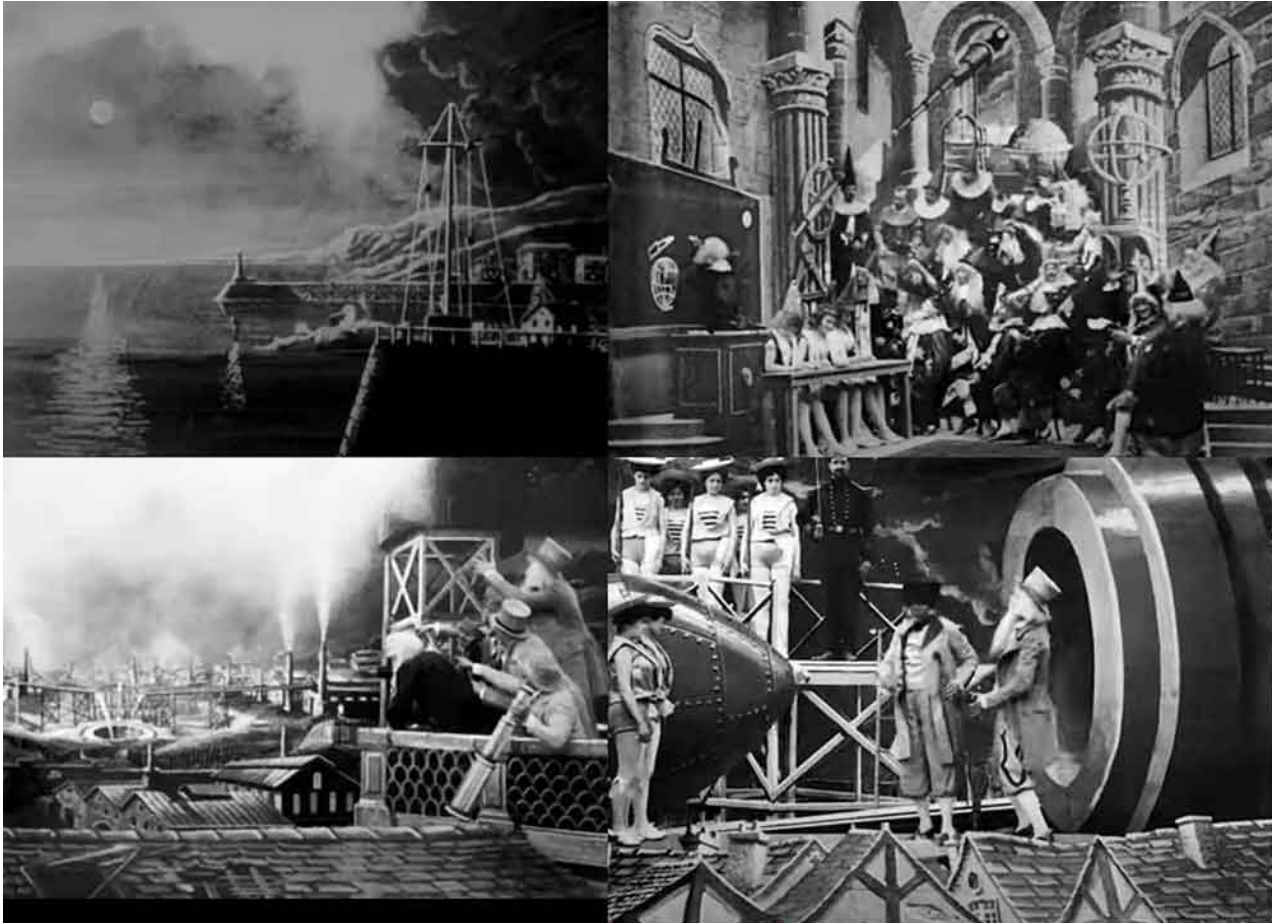
Perhaps the impact of James's description of the *stream of consciousness*, came with the cumulative impact of his conversations with *la Bande* and others, his experiences watching early short films at twice-a-week movie shows, his experiences at the important retrospective exhibitions (of Cezanne, Van Gogh, Vollard's show of Picasso himself) and the massive impact of the simulations at the *Exposition Universelle of 1900*.



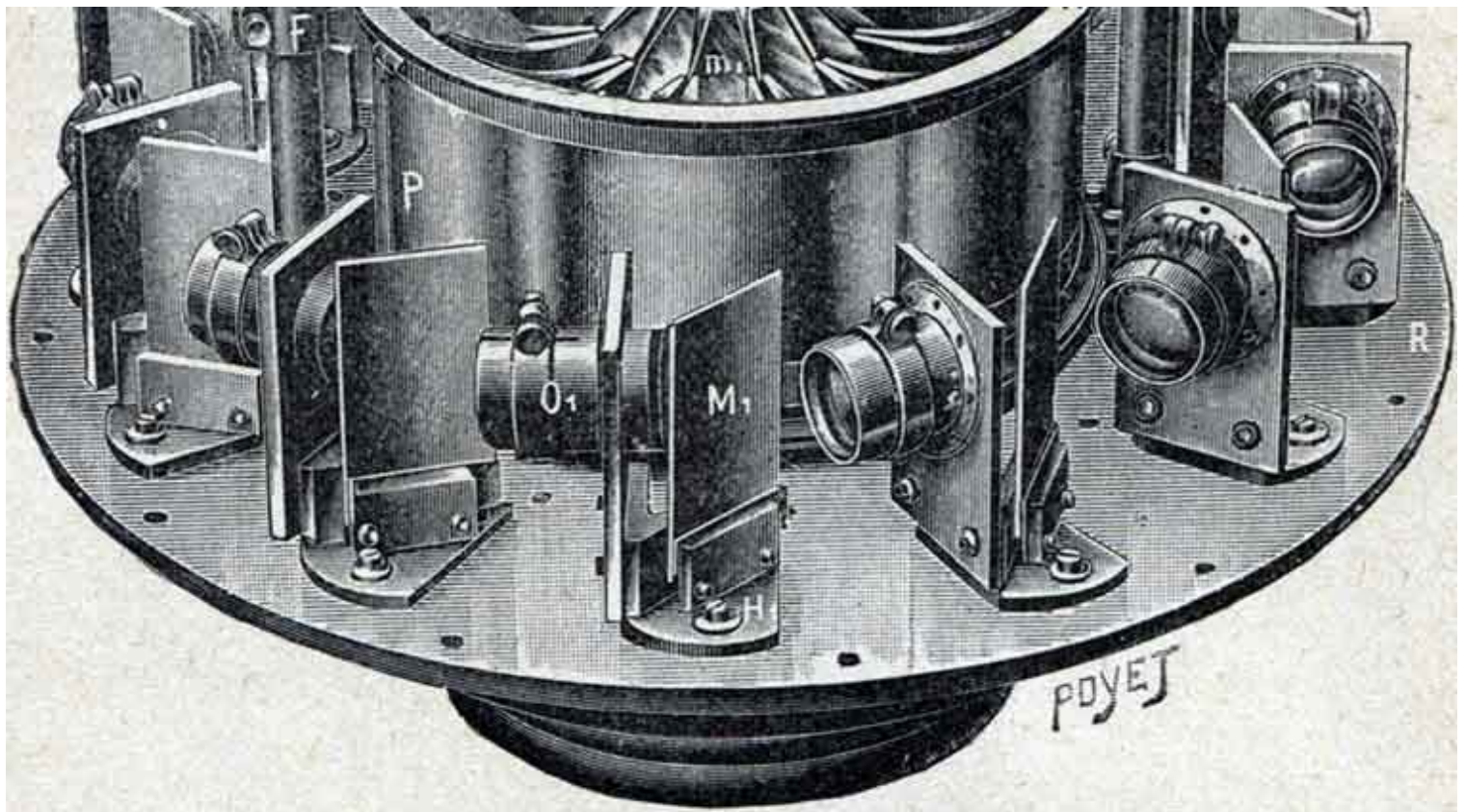
(top): Hugo d'Alesi: *Mareorama* a large-scale travel simulation ('ride' entertainment) at the *Exposition Universelle 1900* - a simulated sea voyage from Marseilles to Constantinople...

(bottom) Georges Melies: frames from *Voyage a la Lune 1902*, showing typical mix of points of view, framing, perspectives, relative image size etc

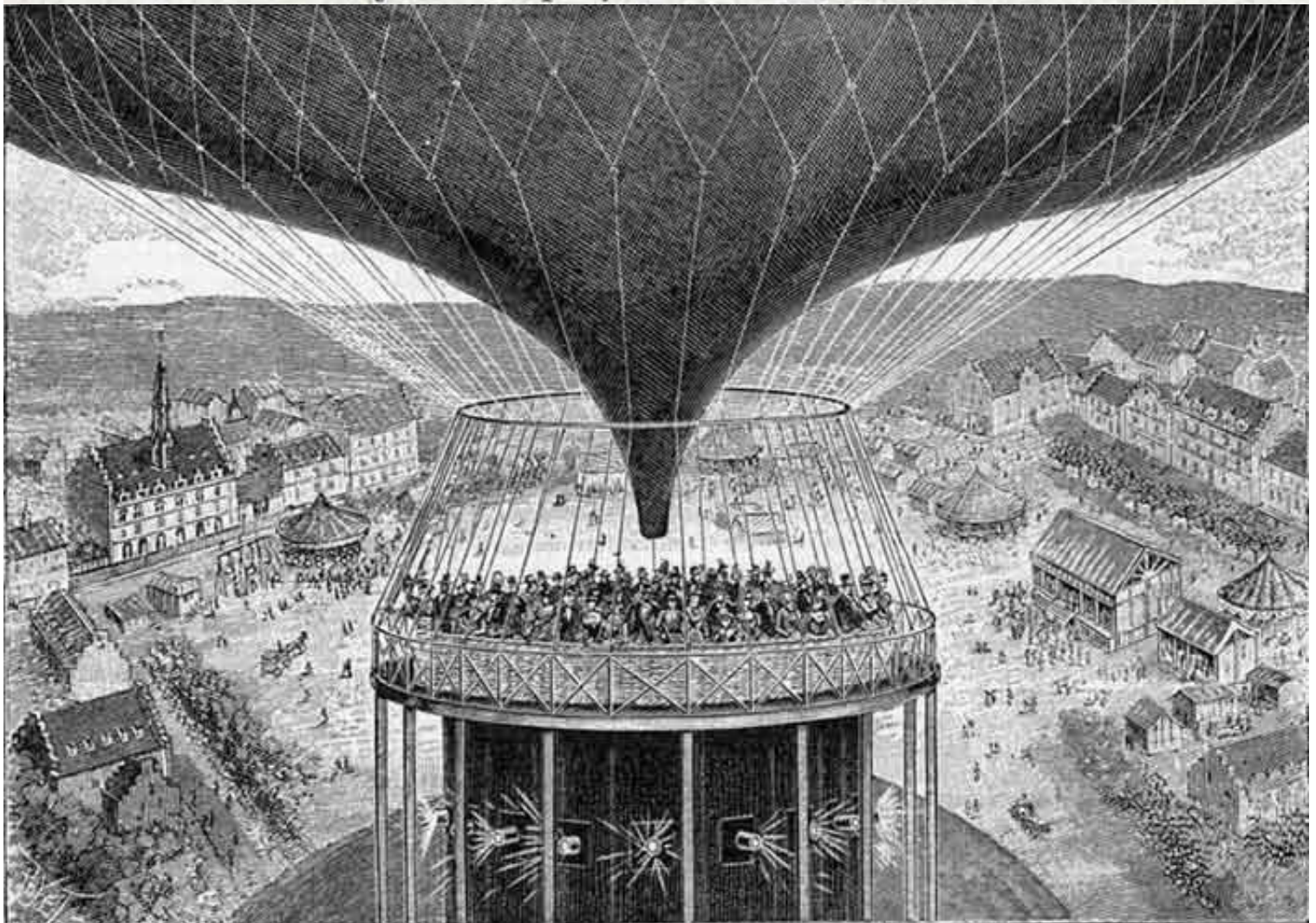
These are just some of the visual delights that Picasso, Braque and their friends would have experienced in the two years after Picasso's arrival in Paris in 1900





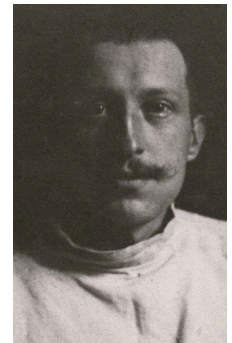
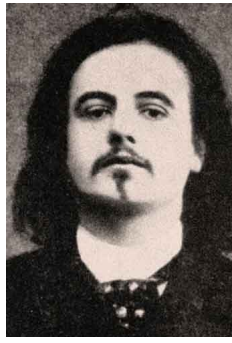


Systeme optique du Photorama.



(top) Lumiere's: *Photorama Systeme Optique* 1900 + (bottom) Raoul Grimoin Sanson: *Cineorama* 1900. Two very similar innovations in 'ride' entertainments at the Paris *Exposition Universelle*. The new media were converging art and technology in very new ways, kick-started by these simulations - providing immersive, sense-defying (virtual) entertainment experiences right at the beginning of the 20th Century, preparing our sensoria for mixed-media streams of simulated, augmented or 'virtual' experiences...

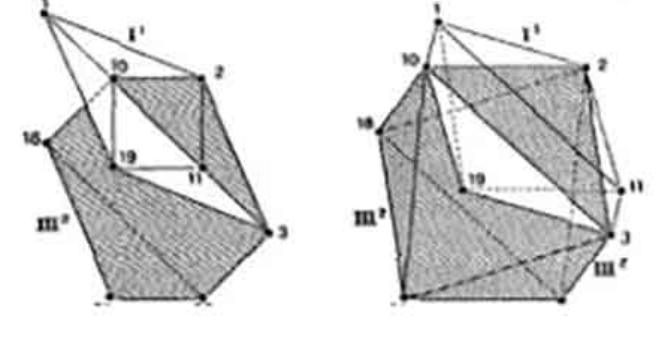
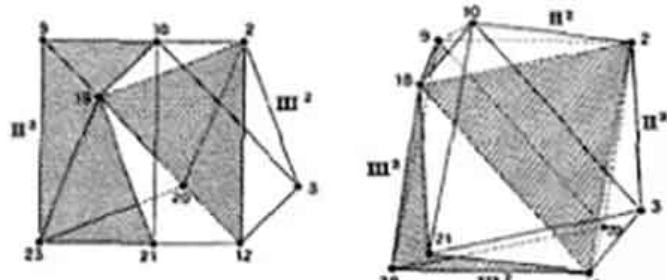
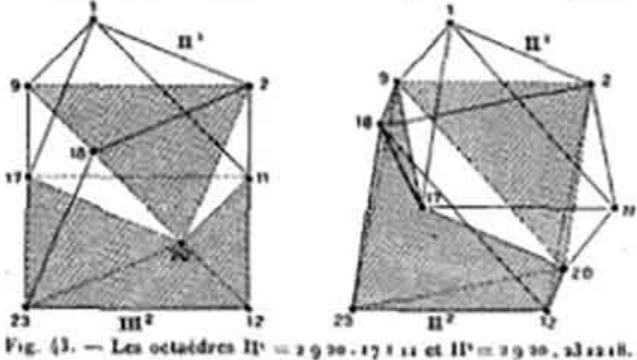
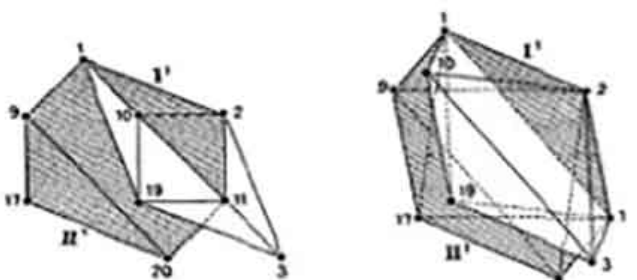




**La Bande a Picasso:** top: the core *bande*: Guillaume Apollinaire, Max Jacob, Andre Salmon. bottom: other *Bande* participants: Jean Cocteau, Alfred Jarry, Georges Braque, Paul Eluard, Andre Derain. This was the group of poets, critics, painters, intellectuals, playwrights and painters who irregularly engaged at the rambling shacks and squalid studio apartments of *Bateau Lavoir*. And of course they discussed, and focussed upon, the hugely exciting cultural revolutions of their time: the ongoing upheavals in the fine arts - the work of their own Picasso (first exhibited in Paris by Vollard 1901), the painters Matisse, Derain, Braque, their idol Cezanne, and recent exhibitions of Gauguin, Cezanne, Van Gogh; the great collection of African and Oriental art at the Trocadero, and the recent *Exposition Universelle* with its techno-media marvels, as well as discussing the breakthroughs in early 20th century science, especially the implications of Einstein's relativity and Minkowski's space/time for artists. This influential, intellectual, widely informed *bande* kept the inquisitive Picasso abreast - indeed ahead of - events, balanced by the loving wisdom of Fernande Olivier, his lover, and the keenly observant writer, collector and *saloniere* Gertrude Stein... (most useful books are: John Richardson: *A Life of Picasso 1907-1917: The Painter of Modern Life* 1997 + Dominique Kalifa: *The Belle Epoque* 2021 + Sue Roe: *In Montmartre Picasso, Matisse and Modernism 1900-1910* 2014 + Gertrude Stein: *The Autobiography of Alice B. Toklas* 1933).



During this first decade of the Twentieth century, Picasso was immersed, not only in his experimental drawing and painting, but also in the tumult of his love affair with the beautiful Fernande Olivier, and the realtime stream of news, ideas and speculations from his contemporaries, his admirers and friends (like Ambroise Vollard, Gertrude and Leo Stein), and his intellectual and inspiring colleagues in *La Bande a Picasso*. According to Picasso's biographer, John Richardson, "[Guillaume Apollinaire was undoubtedly the star](#)" of the close-knit inner circle. "[To quote Gertrude Stein, "he was extraordinarily brilliant and no matter what subject was started, if he knew anything about it or not, he quickly saw the whole meaning of the thing and elaborated it by his wit and fancy carrying it further than anybody knowing anything about it could have done, and oddly enough generally correctly."](#) In the often ribald, staccato and satiric rapid-fire conversational flow of evenings with *La Bande*, enhanced with scurrilous mimetic impersonation of the characters of the day - often members of their wider circle. This engaging, intense and immersive flow of ideas expressed the torrent of subjects emerging in these formative years - the impact of the brand new 'movies' (see Staller: *A Sum of Destructions: Picasso's Cultures and the Creation of Cubism* 2001), Picasso's love of the American newspaper comic-strip supplements (especially, according to Gertrude Stein, *The Katzenjammer Kids*) and the impact of the widespread coverage of Einstein, Planck, and Minkowski on Relativity, Light Quanta, multidimensional Space/Time and the 4th dimension (see Arthur J. Miller: *Einstein Picasso: Space, Time and the Beauty that causes Havoc* 2001) these meaty subjects, relayed in articles, news items and books by and on great polymaths like Henri Poincare, and Henri Bergson, compounded with the technological breakthroughs of the motor car, wireless telegraphy, the motion-capture experiments of Marey and Muybridge, the discovery of x-rays, radio-activity, the invention of psycho-analysis and studies of primitive mythology - and ideas about consciousness - all *au courant* motifs of the imagist torrent of enthusiastic speculation among *la Bande* - these constitute an interwoven stream of conversation and discourse from which Picasso and Braque especially began their explorations of *Cubism* (1908-1912), and their invention and exploration of collage and decoupe in this period. You can perhaps imagine the multiple streams of consciousness flowing through the *Bateau Lavoisier*, fuelled with wine, pastis, hashish, opium, cocaine and other mind-expanding substances (see also John Richardson: *A Life of Picasso Vol 2 1907-1917* 1996). Imagine if you can, the pataphysician playwright Alfred Jarry (*Ubu Roi* - 1896) rapping with the mathematically-minded Maurice Princet and the hyper-loquacious Apollinaire on Hermann Minkowski's revelations in Esprit Jouffret's *4d space...* (Jouffret: *Traité élémentaire de géométrie à quatre dimensions* 1903)



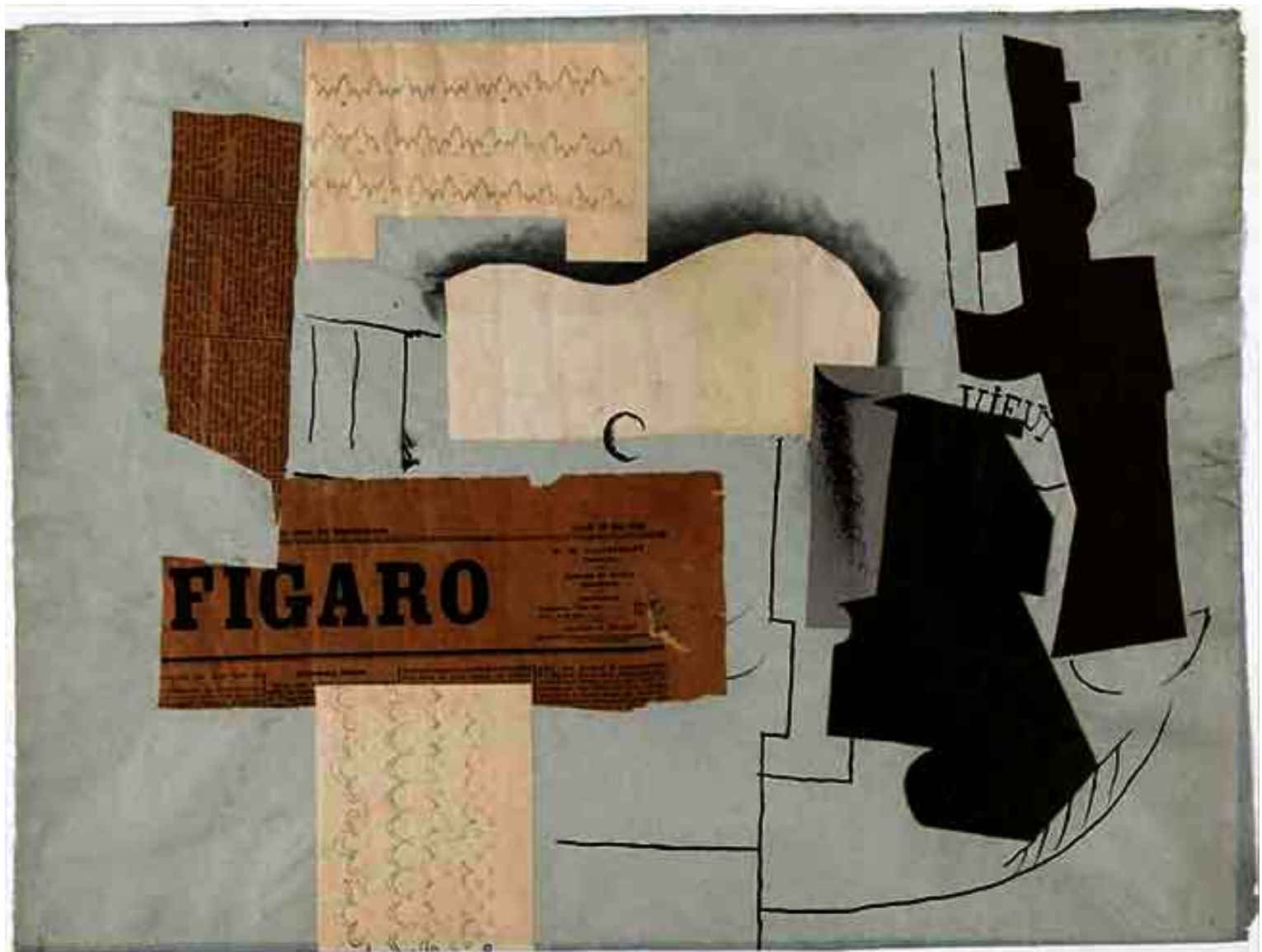
Figures 42 à 46. - Les couples d'octaédres

Drawings from Jouffret's book on the geometry of space/time given to Picasso by Maurice Princet in 1905. The rapidity and diversity of the images, ideas, conversations, experiences, and the wealth of new media - of comics, film, posters, animations, simulated 'rides' and events of the vast Paris Exposition, the illustrated newspapers, magazines, the new colour photography, the new fashions of Poiret, of the street girls and show-girls of Montmartre, of the gas and electric lighting, combined with the impact of his own exhibitions, and retrospective shows of Van Gogh, Cezanne, Oriental and Tribal Art, must have accumulated and collided in Picasso's mind, and in the group mind of his friends in Montmartre providing a real life buzz - a locational stream of thought affecting the temper and the timbre of his mind, just as he saw what Matisse and Derain had produced at Collioure, in the Pyrénées-Orientales - on the Mediterranean, and spurred him on to find his own answer to the question of what kind of art was needed to express and reflect this vibrant period...





Georges Braque: *Viaduc a l'Estaque* 1908 + Pablo Picasso: *Factory, Horta de Ebbo* 1909 + (below) Picasso: *Bottle Vieux Marc, Glass and Newspaper* 1913. These works indicate something of the evolution of Cubism from 1908 - 1913. During 1912, both Braque and Picasso incorporated collage materials.



It is likely that a wide variety of influences, all searching for an alternative approach to Renaissance vanishing-point perspective and a new paradigm for painting as befitted the 20th century - these included adding non-art materials, like printed cloths, newsprint, beer-mats, wine labels, rubbish, etc....and these influences also included 'primitive art' the all-at-once omni-viewpoint or Gods-eye perceptions of the world



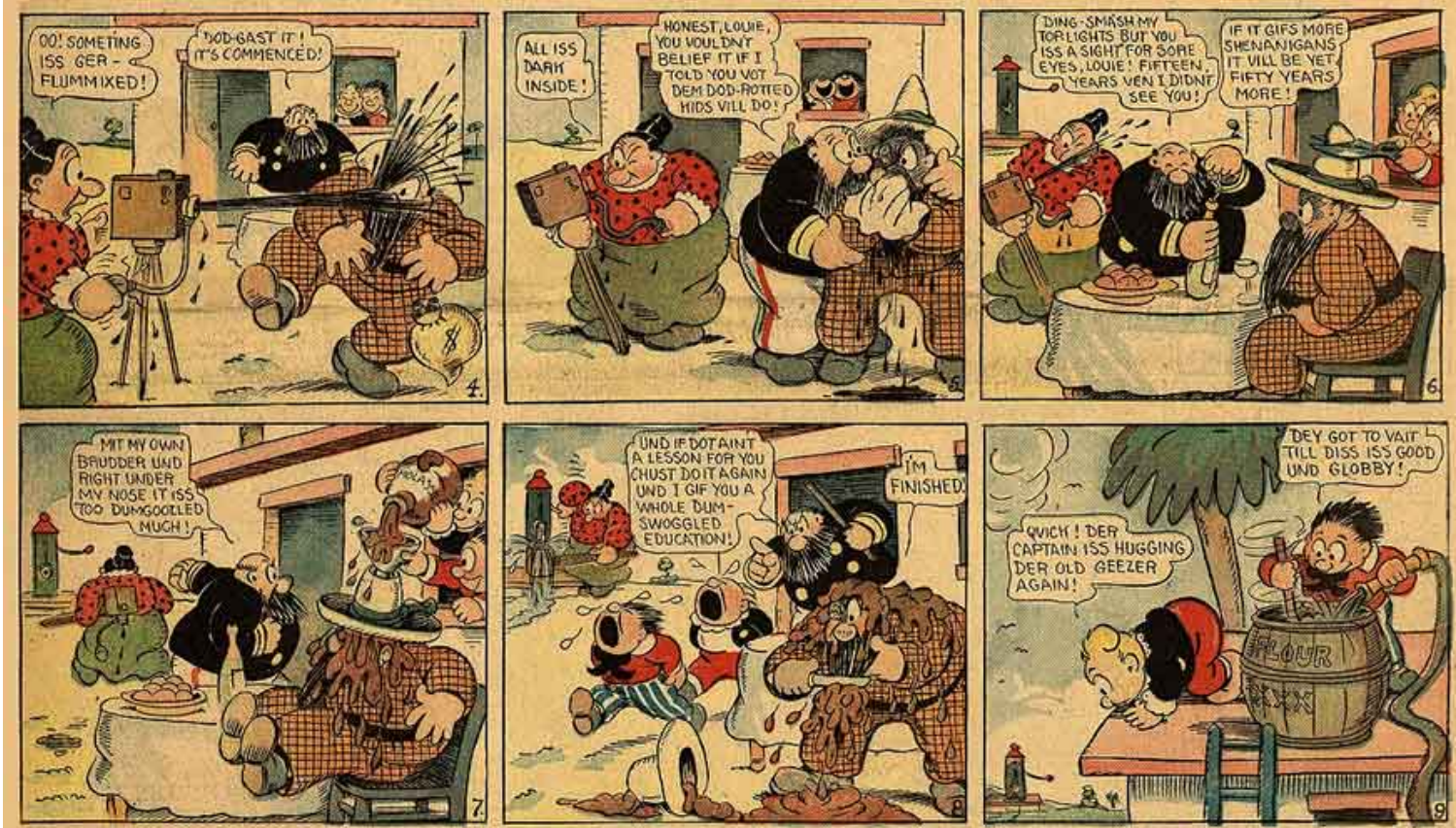
The fascination of collage - of sticking bits of wood-grain printed plastic, bottle labels, tickets and other printed ephemera - stuff found on the studio floor, in the street, torn off a roadside poster - sticking it to your oil painting - this serious art-statement you were working on, becomes a daring leap into the unknown, yet another slap in the face for art critics and dealers - and further feigned outrage for the public - all this after the perjoratives of 'impressionism', 'symbolism', 'fauvism' and now 'cubism'!!! - the general abandonment of perspective and the kind of photo-realism much favoured by artists since the Renaissance what a revelation 'the most important art statement of the 20th century. And renaissance perspective, with its artificial restriction of a monocular 'camera-eye' vision - its focus only on a personal point-of-view, the view from one eye of one person, at some arbitrary position in space and time - this version of art came to dominate painting for half a millennium - that is until the revolutionary 20th century and the fearless interventions of Braque, Picasso, Matisse, Derain and others of that generation maturing in this first couple of decades of the new century.

The abandonment of perspective immediately presented a whole new world of inspirational cultural resources, from the new breakthrough science of relativity to the re-assessment of pre-Renaissance non-human-centred art and a new appreciation and examination of how we think and how we perceive in a new 'all-at-once' cosmology... Exaggerated by the technologies of motion-pictures, simulated 'rides', animations, and discoveries of the light spectrum beyond our limited human perception - of x-rays, ultra-violet, infrared - the nature of colour as wavelength of light, the newish science of perception and its impact on reprographics and colour photography - all these formed the architectonics of the new vision.



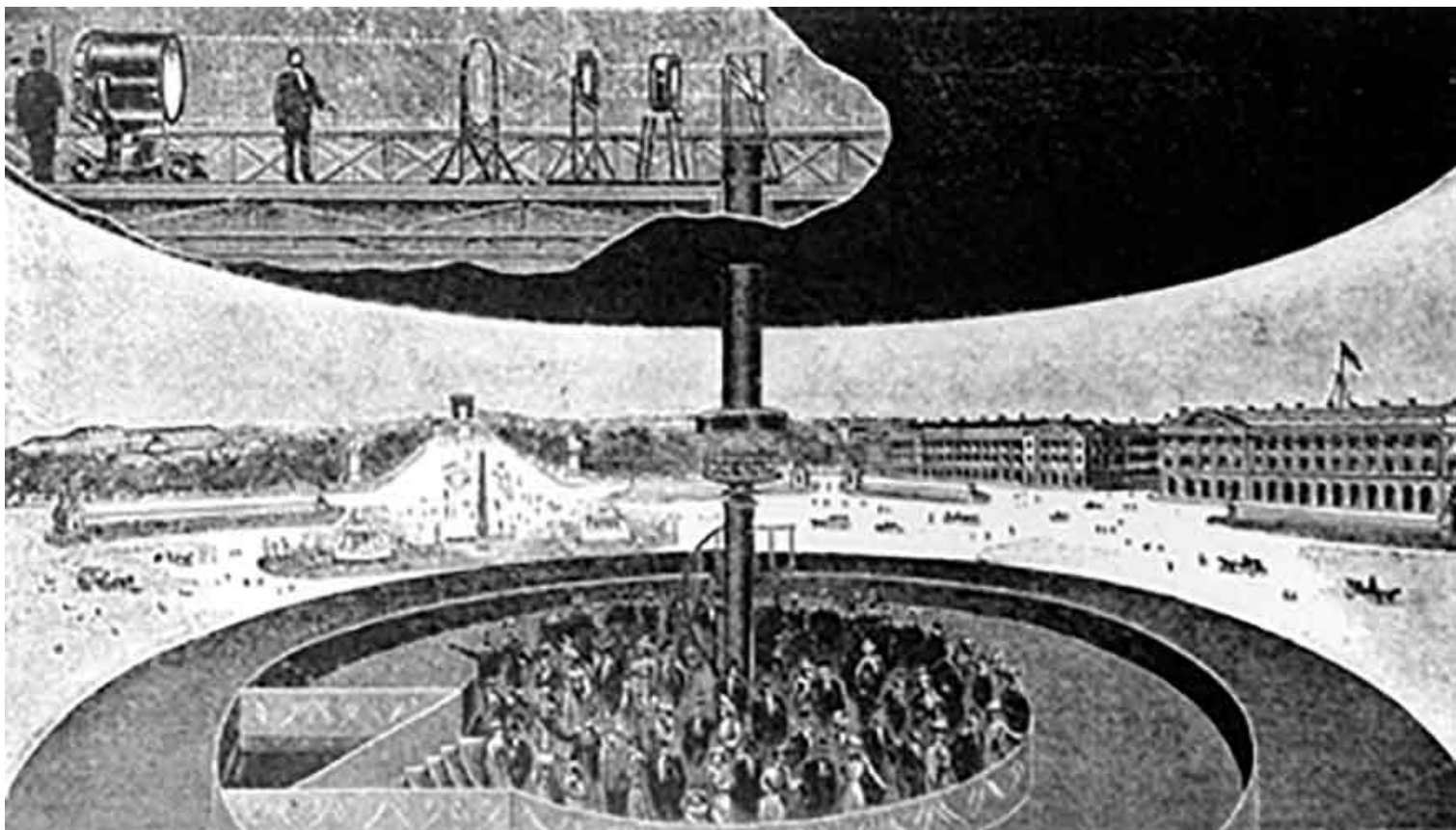
Henri Matisse: *The Red Room* 1908. Matisse studied at the *École des Beaux-Arts* in Paris, where his main inspiration was the work of his teacher, the symbolist Gustave Moreau. After his instructive meeting with Australian painter John Russell, on the lovely island of *Belle Île* in Brittany in 1896 - where he learned the new colour theory of Impressionism, and discovered the expressive work of Van Gogh - Matisse began to focus on a non-realistic, essentially painterly, saturated use of colour, and an abandonment of perspective, bringing a counter-intuitive graphic abstraction to his work. The Fauvist style that emerged owed as much to a freeing-up of the painter's consciousness as it did to a shaking-off of Renaissance rules...



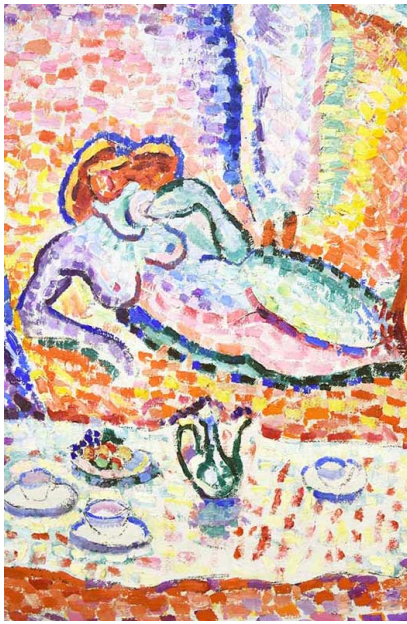


**Influences on Cubism (above: Rudolph Dirks: *The Katzenjammer Kids* - from 1877 - 1968)**

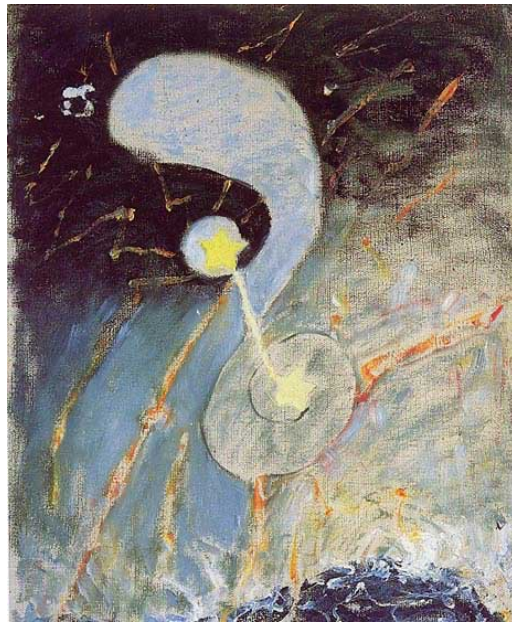
"Oh and I forgot to give you these, said Gertrude Stein, handing Picasso a package of newspapers, they will console you. He opened them up, they were the Sunday supplement of American papers, they were the *Katzenjammer Kids*. Oh oui, Oh oui, he said, his face full of satisfaction, merci, thanks Gertrude, and we left." (Gertrude Stein: *The Autobiography of Alice B. Toklas* 1933). Dirks was probably the most famous comic-strip artist in the world at this time, and the *Kids* is still the longest-running strip ever published. You can imagine how Picasso must have enjoyed the humour, the caricatures, the juxtapositions of points of view, and the comic surrealism of these coloured images. Picasso arrived in Paris two months before the Exposition closed... Below: Lumiere's *Photorama* - a simulated flight in a balloon over Paris 1900. This was just one of the simulated 'rides' you could partake at The *Exposition Universelles* in Paris. It uses a complex series of motion-picture cameras to capture a 360 degree view of Paris taken from an ascending balloon over Paris, then recreated in simulation by a matching set of movie-projectors, throwing images on a vast circular canvas for the centrally-mounted audience to immersively view...



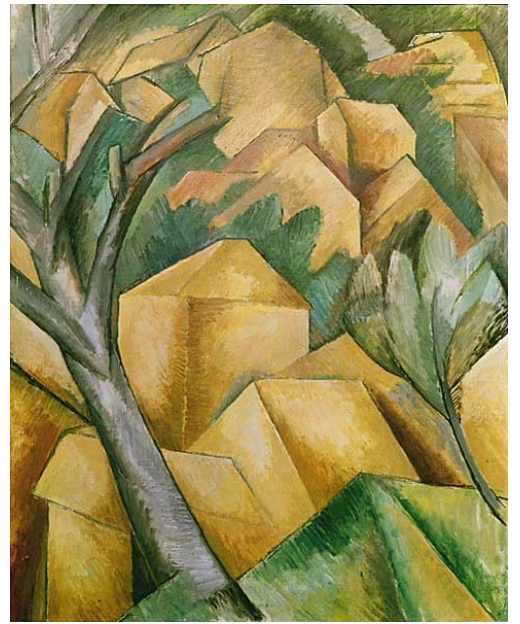




Henri Matisse: *Luxe-Calme-Volupte* 1904



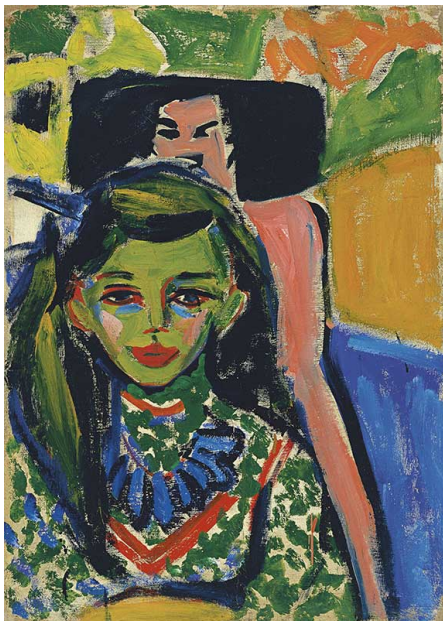
Hilma Af Klint: *Chaos-2* 1906



George Braque: *Houses at l'Estaque* 1908

This astonishing welter of ideas, new interpretations, new theories established *Relativity* and the 4th dimension (*space/time*) as the new influences of the physical sciences, and there is no doubt that artists at this time were captivated by the possibility of a similar breakthrough in the pictorial arts - effectively that the Renaissance vanishing-point perspective - the dominant influence on painting for 6 centuries or so - had to go. And that *colour* (wavelength-spectrum of light) could be explored much further than Impressionism.

The end of vanishing-point perspective was signalled by *Fauvism* (Matisse 1904); *Abstraction* (af Klint 1906); *Cubism* (Picasso-Braque 1908); *Futurism* (Marinetti 1909) - and individual artists exploring the future of art around these several different schools of new 'modernist' art.



This courageous experimentation in painting (above Ernst Ludwig Kirchner: *Franzi in front of a curved chair* 1910; and Piet Mondrian: *Evening; Red Tree* 1910). Kirchner in an expressionist false-colour oil-sketch; Mondrian at the beginning of a series of paintings gradually removing detail, so that he arrived eventually at an essence of vertical (male?) strokes and horizontal (female?) forms - and, in the 1920s, his theosophically-informed, geometrical abstract explorations on canvas. The flow of Modernism kick-started experimentation in all the arts, as we'll explore over the next pages...



## Modernist technological innovations

Arguably, the principle technological innovations driving Modernist arts through the *Belle Epoque* into the Twentieth century were **Film, Animation and Collage** (these probably had a wider impact on the general public than innovations in serious music composition and ballet, though popular music - especially ragtime, the Blues and Jazz obviously impacted directly on the modernist sensorium). **The multiplicity of motion-capture and motion-picture experiments in the last few decades of the 19th century** (of Louis le Prince, Etienne Marey, Eadweard Muybridge, Max Skladanowsky, Thomas Edison, Louis and August Lumiere, William Kennedy Laurie Dickson, etc), **following the momentous invention and success of photography in the mid 19th century, set the stage for Lumiere's and Edison's + Dickson's inventions** (see my *mediainspiratorium* web-archive for the immediate pre-history of motion picture research, optical toys and animation tools. see <https://mediainspiratorium.com>).

The comic-strip (illustrated narratives) has an even longer pre-history going back to ancient Egypt (hieroglyphs) and Mesopotamia (intaglio reliefs and bas-reliefs). And the rediscovery of the popularity of illustrated narratives in colour newspaper supplements, and in narrative cinema (after c1900) drove both the success of modern comic-strips and graphic novels, the film feature and film serial, and the animated cartoon. All these media depended upon various remediations of stories (sometimes ancient folk/ fairy-tales) and some remediated or newly-invented narrative genres (crime, pirate, horror-story, science-fiction and other penny dreadful/pulp fiction and popular-press themes.)

You could also mention the *coeval* mass-publication of *Comics* (*Dirks* 1887) and picture-postcards (Reutlinger from 1890), *colour photography* (from Lumiere's *Autochrome* 1905), the *telephone* (Bell 1876), the *phonograph* (Edison 1877), *Film* (Lumieres 1895), *wireless telegraphy* (Marconi 1894) and *radio broadcasting* (Fessenden 1906, BBC National Radio broadcasting 1922), as well as the immensely popular *film serials* (notably Louis Feuillade's *Fantomas* 1913, *Judex* 1916 and others)...

All these media technologies accelerated and enhanced communications through **Pictures, Sound and Music, and the Movies, and the experimental conception of Television** (from Campbell Swinton et al 1908), **with TV broadcasting** (from Baird's electro-mechanical television system in 1926), **with electronic TV demonstrations** (Philo Farnsworth 1928, 1934) and at the **BBC** (Schoenberg's *EMItron* 1936) - the world's first regular high-definition television broadcast.

Perhaps the most characteristically 'stream of consciousness' filmic explorations include Feuillade's *Fantomas* serials (much loved by the Surrealists) and later in the Fifties, Spike Milligan's *The Goon Show* (on radio 1951-1960), and more recently Adam Curtis' *Hypernormalisation* (2016) and other works from his *Pandora's Box* (1992) especially perhaps *Can't Get You Out of My Head* (2021) and *Russia 1985-1999: Traumazone* (2022). From the age of 13, Curtis was inspired and influenced by the great John Dos Passos' *USA* trilogy (1930-1937) a classic example of panoptic stream of consciousness literature.

Other recent films illustrating this approach include Terence Mallick's *Tree of Life* (2011) and the Daniels' *Everything, Everywhere, All at Once* (2022). The *stream of consciousness* - as an idea and as a universal experience - fits so well with the 24/7/365 streamed media experience that's become the norm for many in the last decade or so, and it's not surprising that rapid-montage, multi-screen and immersiveness are dominant techniques - I first noticed this in Spielberg's 2002 *Minority Report*. where it looks like a nightmare of personalised, AI-eye-scan generated, targeted advertising, personalised news, entertainment generated by personalised recommendation-engines. Perhaps we haven't got the eyeball-scanned personalisation, near universal metropolitan CCTV surveillance dogging Tom Cruise's character just yet (in 2023), but we got widespread CCTV, face-recognition, biometric backups and access triggers, customer profiling, targeted taste and consumer-recommendation profiles, and, as a backup, we got big Government, *Echelon*-assisted personal security-data profiling to moderate our social media...

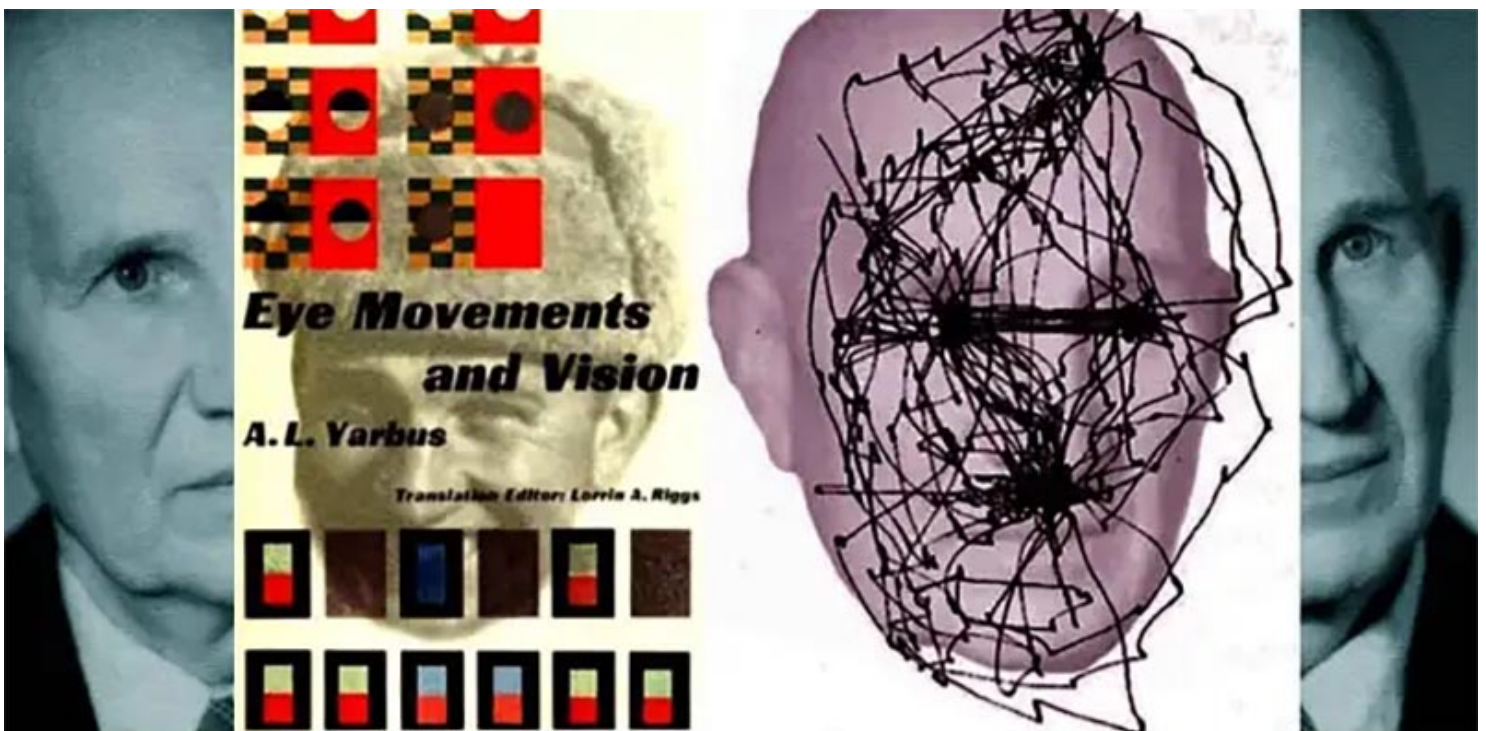


Is it not probable that the weight of circumstantial evidence concerning the kind of philosophical debate and badenage (especially Apollinaire's exaggerations, re-enactments and amplifications, and Jarry's radical *pataphysics*) at the *Bateau Lavoir*, and at Gertrude Stein's *Pavilion Atelier* (from 1903), combined with Picasso and Braque's experience of multiple-perspectives at the movies, and the experience of seeing non-Western 'primitive' art at the Trocadero, and their extrapolation of the study of Cezanne's paintings, that all these streams of input began to accrete in their mindsets to the multi-faceted, multiple perspectives and fragmented constructions of what became known as Cubism?

"Vision is not mere registration of what enters, via the gateway of our eyes, from the outside world into our inner consciousness. Understanding the act of seeing as mirroring the outside world in mental images overlooks its temporal aspect. From Berkeley to Helmholtz, from Goethe to Cezanne, new discourses based on the physiology of the sense organs lead to new conceptions of vision not only conceived of as a mental process, but as a cognitive activity. Even before Freud interpreted dreams, seeing was conceived of as accompanying our life even when we sleep. However, to understand even the stream of the sensations, we have to configure them in pictures. Since the 19th century, the media reflect about the confrontation of seeing as a diachronic activity and of perception as coded in synchronic images. The contributions to the volume investigate the opposition of the stream of sensations and the configuration of time from early illustrations of plants to the avant-gardes, from gesture to cinema, from decapitation to dance, from David Hume to Bergson and Deleuze. The main objective is a critical examination of images rendering vision in motion, without reducing them to the temporality of narrative." (publisher's notes - see Michael Zimmerman (ed): *Vision in Motion - Streams of Sensation and Configurations of Time* 2016).

In this period, of course, there was no contemporary (early 20th century) scientific study of how the eye actually works in the process of looking - I mean there was no understanding of the 'saccadic scanning' (only discovered by Alfred Yarbus in the 1960s) - the process that Hockney called 'eyeballing' in his *Secret Knowledge* (2001) - the detailed, methodical visual assessment of a subject - nor of course of the cognitive processes of filtering what we actually see before us according to our attention, the context, our unique perspective, and our memory associations of the observation.

(see: Frederick Talbot: *Moving Pictures How They are Made and Worked* 1912 + Hugo Munsterberg, *The Photoplay: A Psychological Study* 1916 + Donald Dryden: *Suzanne Langer and William James: Art and the Dynamics of Stream of Consciousness. The Journal of Speculative Philosophy* 2001); Alfred Yarbus: *Eye Movements and Vision* 1967)

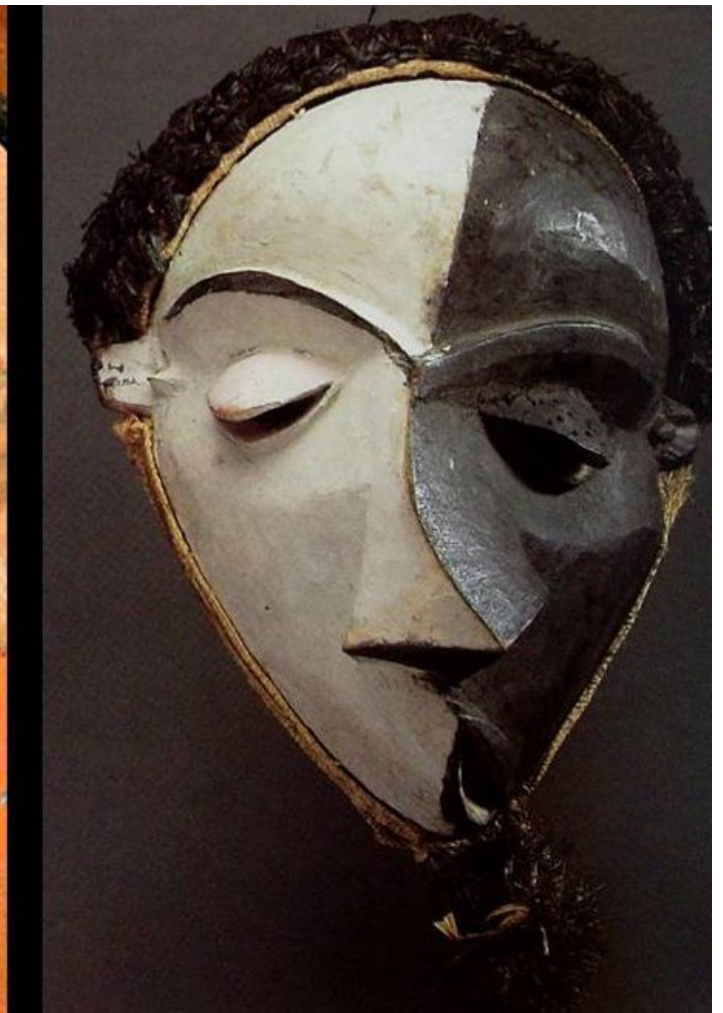
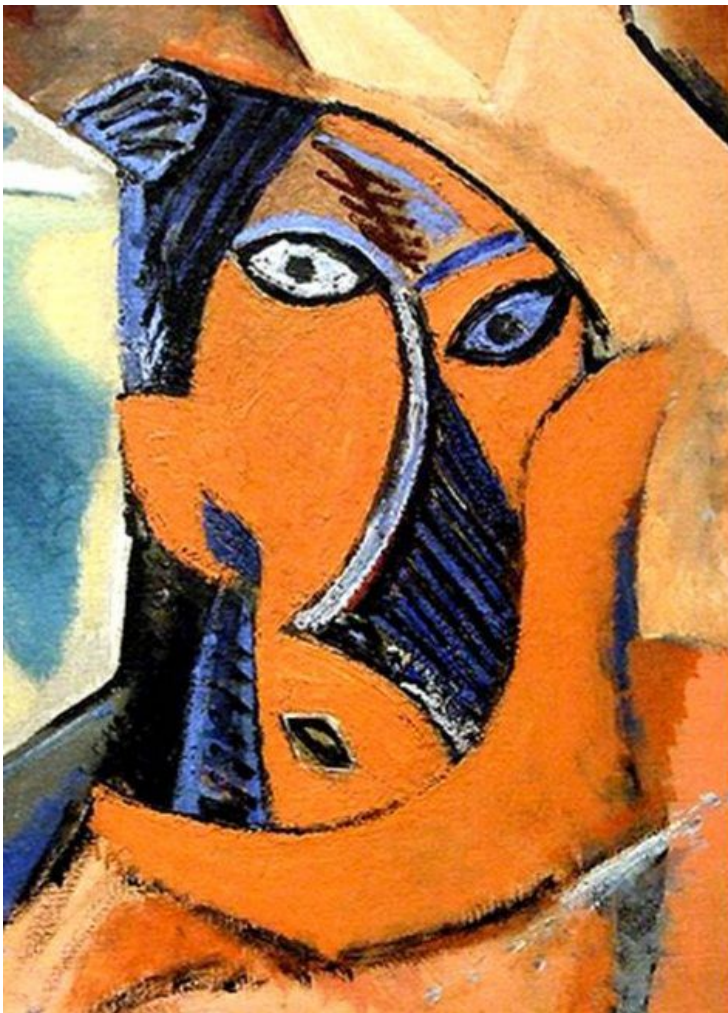






Picasso in his studio at the *Bateau Lavoir* 1908. He has discovered 'L'Art Nègre' at the Trocadero. Matisse, Derain and Vlaminck were urging Picasso's attention to these wooden carvings and their abstractions of the human figure before he began *Les Femmes d'Alger* in 1907. Other artists in his wider circle in Montmartre had begun collecting these figures and masks from sub-Saharan Africa, while Picasso himself had discovered ancient Iberian sculptured forms that had influenced *Les Femmes d'Alger*. Amadou Bal





The French scholar Amadou Bal has collected dozens of images relating to the impact of 'L'Art Nègre' on Picasso throughout his life - and is especially interesting on the *Demoiselles* period, using images like the above - comparing details from *Les Demoiselles* with masks from Gabon and elsewhere in sub-Saharan Africa. There seems to be no doubt that the shared stream of consciousness (of the artists, observers and theorists) of Modernism included the range of new thinking, new perspectives and new experiences (perhaps especially new ways of seeing) that we've summarised in these few pages - and perhaps the *Demoiselles* serves as the landmark painting of these influences. I haven't focussed enough on the developing practice of the professional artist at this time. It was a process rapidly evolving through the 19th century, accelerating after the 1840s when Daguerre and Fox-Talbot made photography a potential threat to the artist's core skills of representation. As Hockney has convincingly demonstrated (in his *Secret Knowledge* 2021), artists had been gradually absorbing technical reprographics at least since Durer, perhaps much earlier. And in the early 1800s, the thrilling experience of the *Phantasmagoria* (1800), the news of Wedgwood's *photographic* experiments (1802), the iterations of the *camera obscura*; the new invention of the *camera lucida* (1807) - and the cascade of visual toys/tools that followed: (the *kaliidoscope* (1816), the *Diorama* (1822) , the *Stroboscope*, *Phenahistoscope* and *Anorthoscopic Discs* (all 1832) - all contributed to the education of the proto-avant garde painters - like Gustave Courbet, who employed Julien Vallou de Villeneuve to photograph his model Henriette Bonnon as preparatory work on his painting *The Bathers* in 1853 (see Aaron Scharf: *Art and Photography* 1974). In 1865 Dante Gabriel Rossetti used the photographs made by John Robert Parsons of Jane Morris for his painting *The Blue Silk Dress* of 1865. Aaron Scharf compared the black and white photos of models posing to the drawing of plaster models of Greek and Roman statuary - the use of photography became common in the fin de siecle - the poster artist Alphonse Mucha took his own reference photos in his own studio in the 1890s. And from the mid 1870s the designer Christopher Dresser was developing his critical discourse on Design - a pointer to the continuing analysis of art by critics like John Ruskin (from *The Stones of Venice* 1851). Artists began a modernist professional practice - of marrying critical discourse, sketchbook studies, studio experiments, art history - with scientific insights on cognition and perception, like the Young, Helmholtz and Maxwell Theory of Colour (1861)...



The deep cognitive processes of 'professional vision' (the 'artist's eye' - described so well in Hockney's *Secret Knowledge* 2001) - is of course not merely the perceptual, indiscriminating eye of the layman, the artist's eye is capable of *critical* analytic observation - a kind of conceptual visual thinking, aided by visual sketchbook explorations and *ad hoc* studio montage constructions, typical of both Picasso and Braque's sketchbooks and studio experiments of this period - (1905-1912) as John Berger noted (in his *The Success and Failure of Picasso* 1965) this was the only period in Picasso's life when his work was indistinguishable from another artist. In what was to become part of the creative practice of Modernism, Braque and Picasso established a kind of 'common goal' - this exploration of cubism and later *papier collés* and *collage* that they developed coherently and contingently, despite often working hundreds of kilometres apart.

Between Picasso and Braque, who, working separately but in parallel, together 'provoked Cubism'. My argument here is that the stream of ideas derived from the cumulative stream of conversations at the *Bateau Lavoir*, and Stein's *Atelier*; reading magazine and book articles; seeing the recent exhibitions (Cezanne, van Gogh, African Art), experience of current work and recent paintings by Matisse, Derain, Modigliani etc), and the spectacular rides and simulations of the *Exposition Universelle*, combined with their sketchbook and studio experimentation, helped develop their parallel thinking on Cubism..



## Visual Perception and Motion Picture Spectatorship

"The ubiquity of narrative – written, verbal, cinematic – shows that the ability to achieve immersion is a fundamental property of the human mind found in cultures diverse in both time and place."

(Paul Sunderland: *The Virtual Worlds of Cinema* 2019)

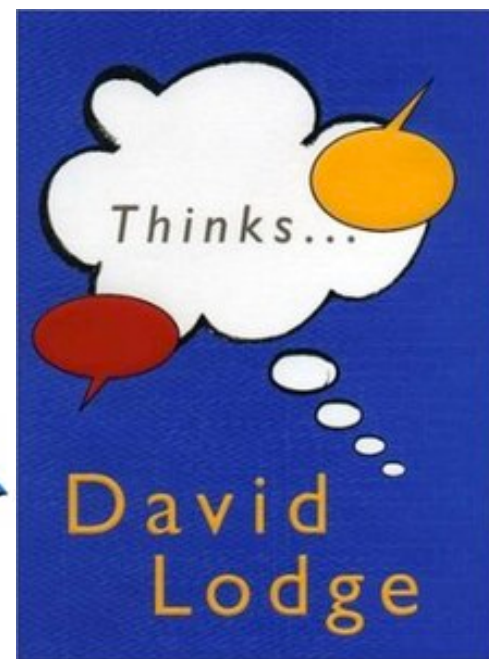
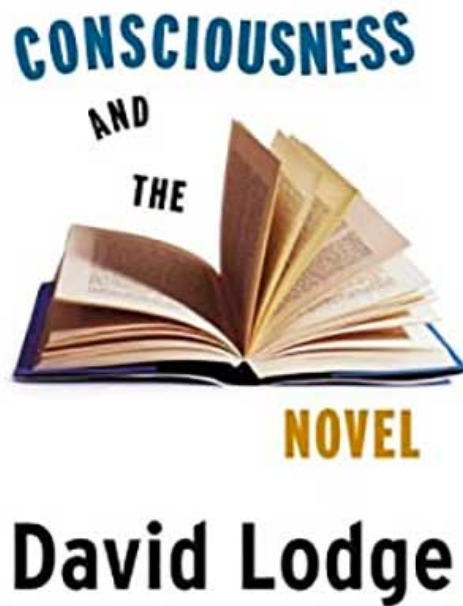
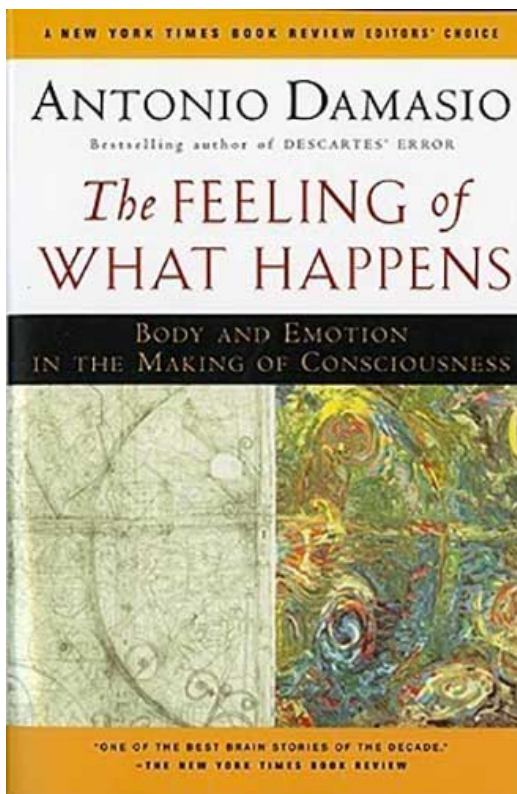
"Berger argues that Picasso was a thrillingly rebellious visionary, but only for about ten years of his long life (he lived 1881–1973). In 1907, he '*provoked Cubism*' – the italics are Berger's, indicating his view that the artist was far from being this iconoclastic movement's architect or philosopher-in-chief. But Picasso exulted in the spirit of the moment, becoming the most energetic driver of 'a revolution in the visual arts as great as that which took place in the early Renaissance'." (Henry Hitchings: *The Success of The Success and Failure of Picasso* review first published: 27 April 2023)

Henry James – William's brother – was perhaps unsurprisingly – known as the father of the psychological novel, though it was William's insight into the nature of consciousness that impacted most on 20th century 'modernist' writing. For example, Henry Miller makes several references to his own writing as a *stream of consciousness*, including one passage that I can remember but cannot find – it might be in *Sexus* – describing his act of writing in the same way that Surrealists defined automatic writing, and here he gives a flavour of the power of this autonomic force: "I didn't lack thoughts nor words nor the power of expression— I lacked something much more important: the lever which would shut off the juice. The bloody machine wouldn't stop, that was the difficulty. I was not only in the middle of the current but the current was running through me and I had no control over it whatever."

(see Henry Miller, *Henry Miller on Writing* 1964)

Braque wrote in one of his notebooks at this time (c1907): "Traditional perspective did not satisfy me. Mechanical as it is, this perspective never gave the full possession of things. It started from a point of view and did not leave it. But the point of view is one totally small thing. It is as if someone who all his life would draw profiles would come to believe that man has only one eye" and in a later interview with John Richardson:

"The whole Renaissance tradition is antipathetic to me, The hard and fast rules of perspective which it succeeded in imposing on art were a ghastly mistake, which it has taken four centuries to redress. Cezanne and after him Picasso and myself can take a lot of credit for this. Scientific perspective is nothing but eye-fooling illusionism; it is simply a trick - a bad trick - which makes it impossible for an artist to convey a full experience of space, since it forces the objects in a picture to disappear away from the beholder instead of bringing them within his reach, as a painting should." (see John Richardson 1996, quoted in Arthur Miller: *Einstein, Picasso - Space, Time and the Beauty that causes Havoc* 2001)



(above left) Antonio Damasio: *The Feeling of What Happens - Body and Emotion in the Making of Consciousness* (1999) (above centre) David Lodge: *Consciousness and the Novel* (2003) and David Lodge: *Thinks* 2001).

Both Damasio and Lodge argue for the near-tangible reality of *Qualia* - our conscious sense of pain, of feeling, smell, taste, colour; personal memories and expression in our experience of consciousness. They both also stress the importance of narrative in our experience of being. "What happens when an organism interacts with an object is, he says, "a simple narrative without words. It has characters, It unfolds in time. It has a beginning, a middle and an end. The end is made up of reactions that result in a modified state of the organism." and he continues: 'The imagetic representation of sequences of brain events, which occurs in brains simpler than ours, is the stuff of which stories are made. A natural preverbal occurrence of story-telling may well be the reason why we end up creating drama and eventually books (fiction). 'Telling stories' he says, in a striking formulation, 'is probably a brain obsession... I believe the brain's pervasive 'aboutness' is rooted in the brain's storytelling attitude.'" (Lodge quoting Damasio).

It's also true, I think, that our human ability to simulate reality - by telling ourselves, or virtually rehearsing (or simulating) our immediate future for ourselves - the likely events following an action we are about to take, enables us to predict ahead the likely consequences of such an action. This *preverbal simulation* ability means we are continually telling our-selves stories, constantly formulating our own stream of consciousness in a stream of narrative. The link between stream of consciousness and storytelling emerges in modernist literature in the first few decades of the 20th century as a *Modernist stream* - that is, the formulation of *how we think* by William James in 1890 became a tool for cultural innovation. And this Modernist stream permeated into the arts of collage, photomontage and filmic montage (contextual editing) as well. And this mission to express the Stream persisted throughout the last century and was reiterated in examples like El Lissitzky and Herbert Bayer's exhibition designs (*Pressa* 1928), Fritz Lang's *Metropolis* (1927), Louis Armstrong and Charlie Parker et al and *jazz improvisation*; John Cage and Dick Higgins *Happenings* 1948-1958), Ken Isaacs' *Knowledge Box* (1962), Stan Vanderbeek's *MovieDome* (1963), Barbara Rubin + Barry Myles: *Poetry Incarnation* (1965), Andy Warhol's *Exploding Plastic Inevitable* (1966), the Light-Shows at Expo67, and more recently in Pop Festivals, Raves, Hip Hop dance parties, and David Hockney's *Bigger, Closer* exhibition - the trend towards immersive, multimedia, interactive environments - reflects the modernist stream as interpreted by the avant garde and the counter-culture, up to the present day.



Orson Welles: *Citizen Kane* 1941. The flow of biographical scenes in the first half of the movie, with Kane's life recapped in a rapid montage of scenes from throughout Kane's life (with editing by Robert Wise) and the rapid-fire kaleidoscope of Kane's backstory - as scripted by Welles and Joseph Mankeiwicz - presents a *visual stream of consciousness* - a pace of visual storytelling that stamps *Citizen Kane* with the genius of Welles - and the conscripted talents of Mankeiwicz (co-writer), Greg Toland (cinematographer), Robert Wise (editor) and Bernard Hermann (music).

"*Citizen Kane* is by no means a conventional, run-of-the-mill movie. Its keynote is realism. As we worked together over the script and the final, pre-production planning, both Welles and I felt this, and felt that if it was possible, the picture should be brought to the screen in such a way that the audience would feel it was looking at reality, rather than merely at a movie.

Secondly — but by no means of secondary importance — was Welles' concept of the visual flow of the picture. He instinctively grasped a point which many other far more experienced directors and producers never comprehend: that *the scenes and sequences should flow together so smoothly that the audience should not be conscious of the mechanics of picture-making*. And in spite of the fact that his previous experience had been in directing for the stage and for radio, he had a full realisation of the great power of the camera in conveying dramatic ideas without recourse to words." my italics (Greg Toland: *Realism for Citizen Kane. American Cinematographer Feb 1941*)

Welles' and his production-team's ability to arrange, design, construct and produce this flow, involving a seamless integration of non-linear narrative, production design (set, costume and location design), lighting cinematography, acting and 'choreography' to achieve the seamless flow that Toland describes is of course one of the reasons why *Citizen Kane* is recognised as one of the greatest masterpieces of film ever produced. Before settling on the Kane film, Welles had fleshed-out treatments for Conrad's *Heart of Darkness*, developing the idea of a first-person' treatment. At the time, the shorthand used to describe this seamless experience of the *camera as audience*, is 'the subjective camera' - "what it is, in fact is a literal translation of the *First Person Singular technique of the radio programmes*" (that Welles had made for his Mercury Theatre) - they would be attempts to put the viewer into the film in a first-person position.



In his excellent biography of Welles, Simon Callow refers to the Welles' fascination with the idea of the 'subjective camera' (in the first volume of his biography of Welles: *Orson Welles The Road to Xanadu* 1995). This has a double-meaning in the context of Eisenstein's *Method* contextual editing - the subjective camera refers directly to the 'inside' life and the thought-stream attention - both of the characters portrayed, and by transposition, the viewers themselves. In his *American Cinematographer* article reviewing his own work on *Kane*, Greg Toland - the DOP - tells us of some of the extensive creativity and technical innovation by Toland, Mankiewicz and Welles - and the rest of the creative team of skilled technicians and artists who worked on this ground-breaking film.

there's also an excellent 75th anniversary promo of Greg Toland's analysis of this flow on vimeo:  
<https://vimeo.com/860279126>



"A great deal of the expense (of Welles' treatment for *Heart of Darkness*, the movie he planned at first, before he finally worked on *Citizen Kane*) was due to the particular requirements of the 'subjective camera' in order to preserve the continuity crucial to the notion. Welles wanted to maintain enormously long takes over considerable distances. The only solution to this problem was the elaborate technique of *feather wiping*: the camera is locked-off at the end of a shot; the next shot resumes at the same place, and the camera moves off again." (Simon Callow: *Orson Welles The Road to Xanadu* 1995 my inserts in brackets) In the meantime, the scene and set - and the actors may have changed, but the illusion that we are watching a continuous take - a stream of awareness and experience - of the story, and this would engage and entrap the viewer in a seemingly continuous, flowing *first-person point of view* (realised a few years later (not very successfully) by Robert Montgomery in his *Lady in the Lake*, 1947). The seamless flow of experience was conjured in more recent work, such as Adam Curtis' intricate *Hypernormalisation* 2016, and indeed Danny Boyle's *Free Your Mind - The Matrix Now* of 2023, and several others we will mention later in this article.



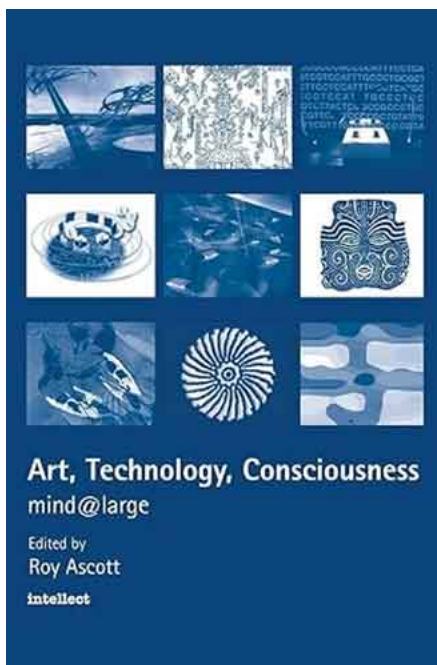
Danny Boyle: *Free Your Mind - The Matrix Now* 2023. Boyle very successfully achieves a stream of consciousness-like effect all the way through this ingenious film, wherein he entwines dance and theatre, set-design and special effects, choreography and cinematography, costume-design, computer-graphics, and lighting - all spiced with his re-interpretation of the Wachowski's 1989 vision (*The Matrix*) of the fusion of real-life and digital-life, and our lives now in the fraught 2020s where this fusion is amplified: where news is 24/7/365 and the multi-channel media bombards us with several hundred streamed and broadcast digital channels of vision, sound, and data. Where we walk around with our screen in our hand, with ear-phones locking us in, with CCTV recording our every movement, where we seamlessly mix SMS messaging, voice-mail, video-mail, video chat, virtual reality, augmented-reality, gameplay on-screen, on tablet and in adverts, in digital video-adverts, mixing voice-recognition and biometrics with fake-news, chat GPT generated news-videos, with the gut-reality of wars in Gaza, the Ukraine, Yemen, Somalia, Persian Gulf, protests all over the world, the stupidity of politicians, the Republican party, the Democratic party, Conservative party, Labour party, and all other parties vainly applying old solutions to brand-new problems, the just and fair-to-all decisions nearly always understood by the people, and almost invariably blundered by the 'leaders' - always that struggle between the obvious right solution (good for all of us, good in terms of justice, fairness and empathy) and the bleats, sneers and grunts of the selfish, greedy, megalomaniac and pompous 'ruling class', the richest corporations and individuals owning more than 99.9% of us do. We struggle in the clutches of last century's economic rigours - where is the *universal basic income* funded by the vast wealth of privatised industries and services...What the Fuck? Why do we put up with this?



According to the English psychologist Kenneth Craik (1914–1945), one of the fundamental properties of the mind consists in the ability to represent the world in order to simulate the possible effects of one's behaviour (Craik, 1943). And perhaps this pre-thought, pre-conscious (or *stream of unconsciousness*) provides the potential 'ammunition' or vocabulary for such simulations. The older we get, the more we have to draw upon personally (for such simulations), and if there is such a thing as the Jungian collective unconscious, we can draw upon these 'pan-sapiens-memories' too. Perhaps this broadened 'experience' counts as 'wisdom' in preliterate cultures? And consider the preliterate devices of the Virtual (ie in thought only) *Theatres of Memory* and other mnemonic devices explained so well by Frances Yates in her *The Art of Memory* (1966) exploring how we categorised, stored and retrieved our memories before literature. In both these cases, recent AI approaches based upon Large Language Models provide a kind of digital equivalent of the 'collective unconscious', drawing as they do, upon the vast resources collected by us over the last 60 years or so in multimedia digital forms on the Internet and World-Wide Web. And of course, the patterns of similarity in form and content in LLMs, create 'attractors' (or what Jung called 'archetypes') as analysed by the mythographer Joseph Campbell in his *Masks of God* tetralogy (1962-1968).

"However, the term *consciousness* also refers to several other aspects involving both its levels (sleep, coma, dreams and waking state) and contents (subjective, phenomenal and objective). A second issue is the problem of other minds, namely, the possibility to establish whether others have minds very like our own. Moreover, human consciousness has been linked to three different forms of memory: procedural/implicit, semantic and episodic. All these different aspects of consciousness will be discussed in the first part of the chapter. In the second part, we discuss different neuroscientific theories on consciousness and examine how research from developmental psychology, clinical neurology (epilepsy, coma, vegetative state and minimal state of consciousness), neuropsychology (blindsight, agnosia, neglect, split-brain and ocular rivalry), and comparative neuropsychophysiology contribute to the study of consciousness. Finally, in the last part of the chapter we discuss the distinctive features of human consciousness and in particular the ability to travel mentally through time, the phenomenon of joint intentionality, theory of mind and language".(Origin and evolution of human consciousness. (Fabbro et al: *Progress in Brain Research* 2019)

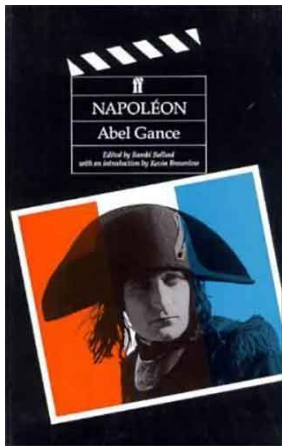
The rapid development of 'neuropsychophysiological' research into consciousness, have been supplemented by insights from contemporary avant-garde artists, cyberneticists and visionary engineers - the kind of fora for discussions on consciousness supervised and edited by cyber-artist Roy Ascott (Ascott: *Art-Technology-Consciousness* 2000), containing useful essays on digital and bio-art, post-humanism, awareness of conscious experience, approaches to a physics of meaning, the bicameral mind, towards a physics of subjectivity, etc.



Roy Ascott: *Art-Technology-Consciousness* 2000. These 'not strictly scientific' approaches cast a much wider net over the dense subject of consciousness - focussing on innovative philosophical approaches, and creative-practice innovation, considering VR and AR, simulation tools,, digital memory, bio-digital approaches, evolutionary algorithms, quantum-mechanical models, the use of new media in installation, music, sound and vision, amplifying conscious experience (et cetera). They are catalysts for triggering insight and new perspectives - tools for evoking and provoking innovation and change. I was at Ascott's inaugural professorial lecture in Cardiff c1996, and he presented a broad prospectus, covering innovations in digital art, the scope of digital communications, and the cybernetic expansion of consciousness studies. It's most refreshing to find great thinkers exploring the real, experienced sensory qualia, at last. As Roy Ascott and David Lodge have shown, artists and other non-scientists can shine a considerable light on consciousness, and especially upon the *qualia* of our experience - the colour, taste, smell and feel of human experience, as well as the awe, love and pain of common life. artists interpret *what it's like to be human*.

## Collage, Photo-Montage, Filmic Montage and Multi-screen (spatial-montage)

There is a correlation in the first two decades of the twentieth century between the 'invention' of *collage* in fine-art (Braque and Picasso 1911-1912), its evolution as photo-montage by the DADAists and Russian Constructivist artists (Hausmann, Hoch, Heartfield, Rodchenko, Klutssis etc 1918-1923), and its temporal extension in contextual editing or filmic montage (Eisenstein, Kuleshov, Pudovkin, Vertov 1910-1929). In the late 1920s, two directors explored the visual-stream of images in new directions: in Abel Gance: *Napoleon* (1927) - the linear, single-frame film is spatially expanded to enclose 3 screens, side by side, generating an immersive wide-screen experience for the viewer; and in Vertov's *Man With A Movie Camera* (1929), the rapidity of cuts and perspectival points of view enlarge the 'city' movie genre (invented in the twenties by Paul Strand and Charles Sheeler (*Manhatta* 1921) and Walter Ruttmann (in *Berlin: Symphony of a Great City* (1927), enhancing the visual-stream by (a) the allusive 'it's all here' cognitive panorama afforded the viewer and (b) the perceptual span of multi-screen, immersive presentation:



Abel Gance: *Napoleon* 1927 (top) the 1977 book by Gance edited by Kevin Brownlow, of the restoration of *Napoleon* in the 1970s, + (bottom) sample 3-screen vistas...



Gance's *Napoleon* is now primarily known through the meticulous restoration of the movie by Gance and film-historian Kevin Brownlow in the late 1970s, and the images (previous page) indicate something of Gance's creative aspirations with this ambitious film. The triple-screen configuration of some sections of *Napoleon* is the first example of a director using a format that embraces the peripheral vision of viewers, but not the first attempt to use multiple 'frames'

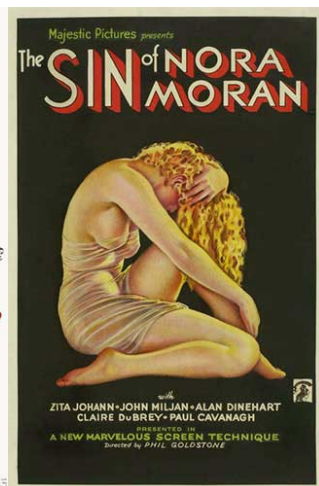
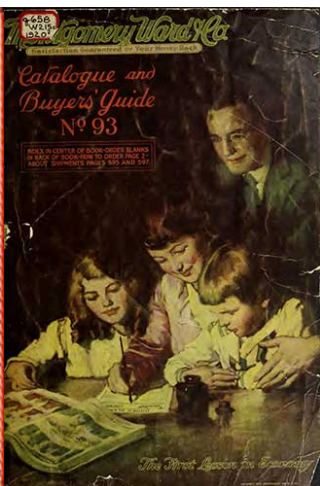
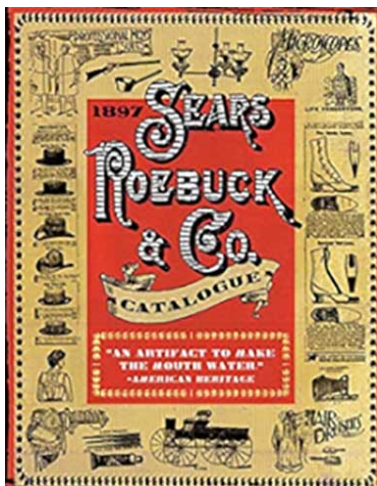


This distinction falls to the dynamic film director/producer Lois Weber and her male assistant Phillips Smiley for their 1913 *Suspense* (above), which used the triple juxtaposition of imagery to increase the narrative tension of the worried housewife (right), the threatening prowler (left), and the concerned husband (centre). This motion-picture multi-image technique, introduced in widescreen by Gance in *Napoleon*, extends the moving image like photomontage expanded the standalone photograph, providing both context and parallel synchronous narrative. The spatial, graphic spread, of still imagery exploited by the *photo-monteurs* of Dada, Constructivism and Surrealism in the teens and twenties, became part of the grammar of motion-pictures thanks to Weber and Gance in the same period.

So the flow of images, equated with the *stream of consciousness* in its intended effect on audiences. The screen-image flow, in its multi-screen/multiframe iterations (in Gance's *Napoleon* for example), graphically spread out and expanded not just the peripheral vision of the audience, providing a more immersive and inclusive experience, but the *contextual* cognitive experience - the intellectual montage which audiences are invited to engage with - to experience a wider intellectual identification with the narrative stream...

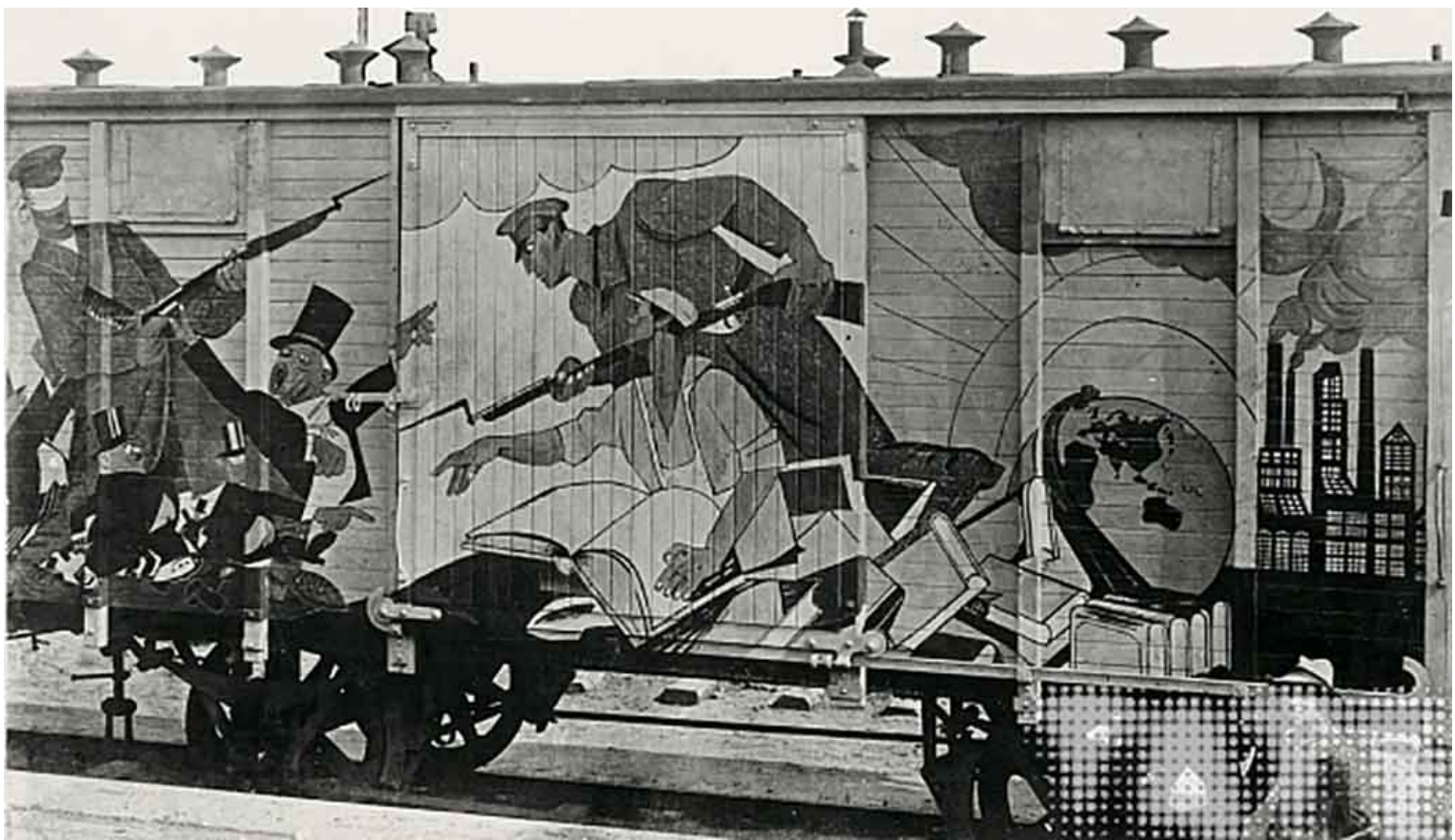


Francis Bruguere: *Rosalinde Fuller* 1925. Photo-Secessionist and Constructivist artists like Bruguere, and Gustav Klutsis, began to respond to the multi-image, multi-perspective paradigm in the 1920s, just as zeitgeist writers (including Joyce, Woolf, Wharton, Wolfe, Dos Passos etc) began to explore *stream of consciousness* narrative, so visual artists, in the USA and perhaps especially in revolutionary Russia, took the very (communications and marketing) tools of 'consumer capitalism' and subverted them to their own or to socialist - ends. So, just as we see the processes of the analysis, rationalisation and standardisation of advertising and marketing, so we also see alternative visions and applications of what became known later as 'graphic design' (then called 'commercial art'). New 'modern' typefaces (like *Futura* by Paul Renner 1927), new applications of photo-montage, new technologies of Print, Display and poster-art, and inventions like Agit-Prop Trains, Immersive exhibition-designs (El Lissitzky: *Pressa* exhibition 1928), psychological advertising, kino-Pravda, coherent branding (corporate identity), billboard posters, market research, direct-mail, consumer credit-schemes, mail order catalogues, radio, magazine and newspaper advertising, 'Madison Avenue', and mass-marketing: the new 'graphic design' (oddly, especially as exploited in Europe and the USSR), created wholly new paradigms of spatial, pictorial and textual communications...



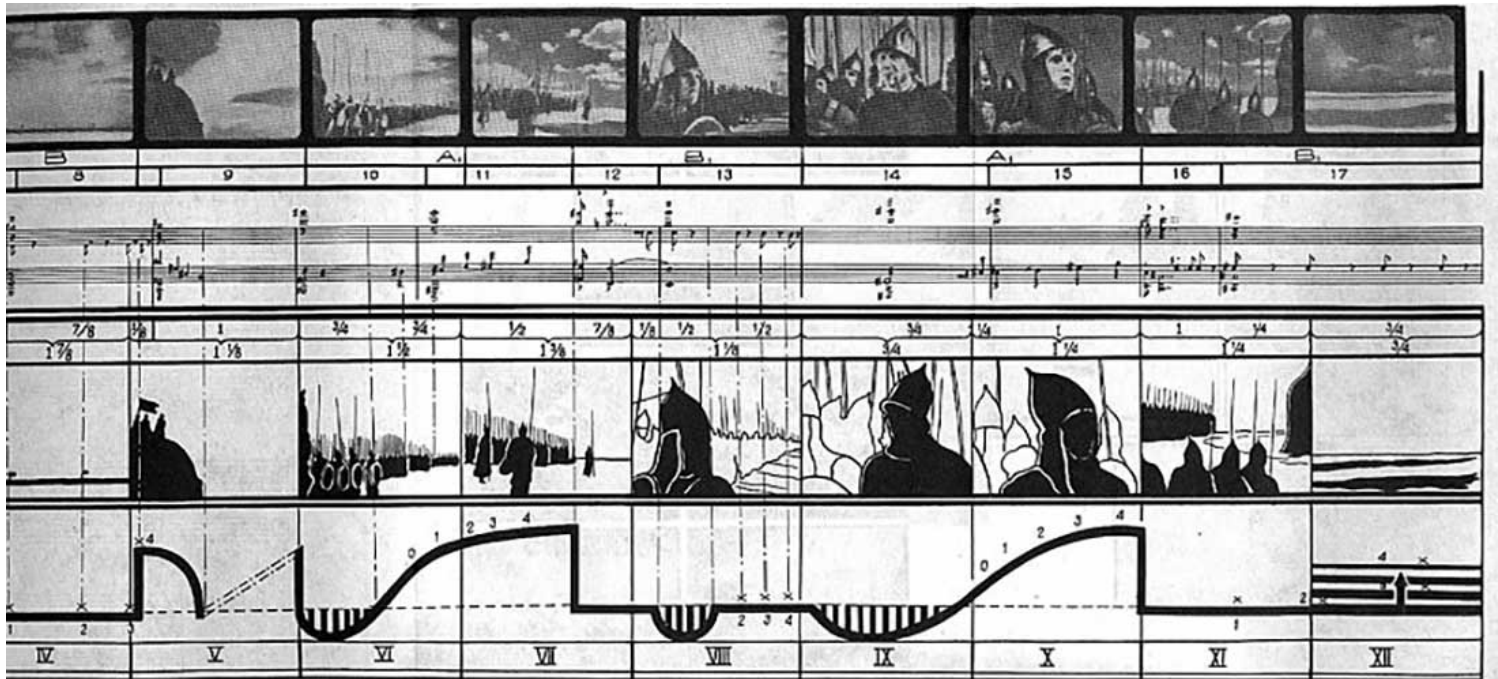
American publicity graphics in the Twenties - strangely conventional in the face of the vast socio-economic changes in that decade, while Europe (the Bauhaus especially) and the USSR were breaking entirely new ground in visual communications)





(top) Alexandr Medvedkin + Dziga Vertov: *Agit-Train* c1920 + below: Gustav Klutskis (Klucis): posters for *Moscow Spartakiada* 1928. The revolutionary photo-graphics of Klucis, Rodchenko, the Stenburgs and others, including those advertising the USSR State Industries (many devised by Mayakovsky and Rodchenko) and the civil war propaganda and agitation (*Agit-Prop*), made great use of the new Cyrillic display fonts, and the dynamic upward-thrusting aspirational diagonal layouts that became a *motif* of the Bolshevik Revolution and the 'Reds' in the subsequent civil war.





Sergei Eisenstein: detail of fold-out art-paper gatefold in *The Film Sense* (1943). I bought an original wartime copy of this book - text printed on cheap paper, but with this exceptional landscape gatefold inserted (printed on glossy art paper - an unusual addition to a wartime publication). It was a retrospective analysis in the form of a multimedia storyboard of Eisenstein's *Alexander Nevsky* - the battle on the ice sequence - the very first of such 'synesthetic storyboards'.

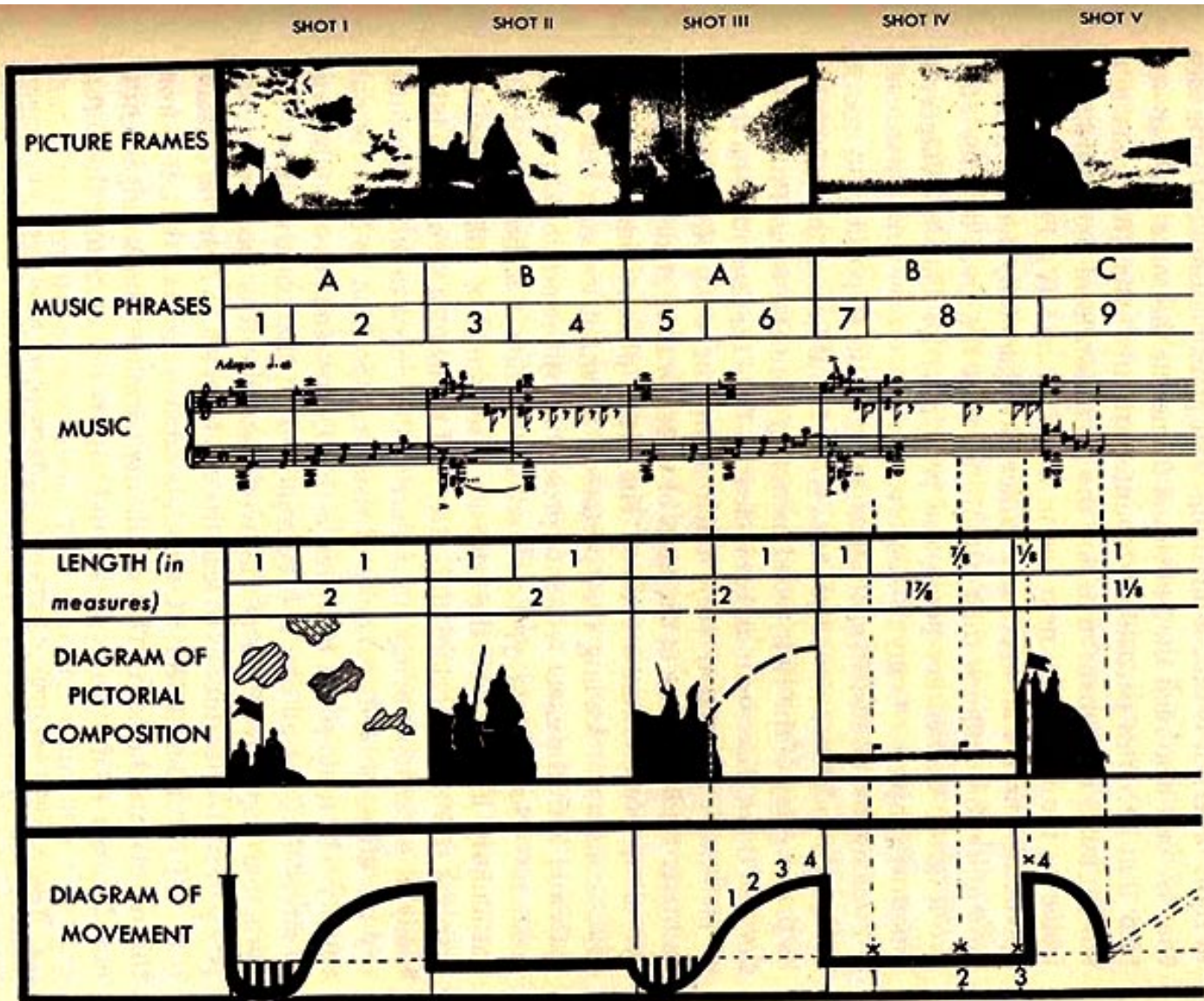
The integration of picture-frames, music phrases, music, pictorial composition, camera movement establishing Eisenstein's thesis of the correlation or correspondence of the movement of music, and the movement of the eye over the lines of the plastic composition' - a further example of his consideration of film as a total or composite medium, and of his constructivist approach to film-making.

## "Intellectual montage"

In his later writings, Eisenstein argues that montage, especially intellectual montage, is an alternative system to continuous editing. He argued that "a montage is a conflict" (dialectical) *that new ideas arise from the collision (composition) of his sequences in the montage*, and that none of the images in the edited sequence is inherently endowed with the new ideas. A new concept is born explosively. His understanding of the montage thus explains the Marxist dialectic. Concepts akin to intellectual montage emerged in the first half of the 20th century, such as Imagism in poetry (especially Pound's ideogram) and Cubism's attempt to integrate multiple perspectives into a single painting. The idea that related concrete images create new (often abstract) images was an important aspect of early modernist art. Eisenstein associates this with non-literary 'writing' in pre-literate societies, such as the continuous use of ancient paintings and images, and is therefore 'contradictory'. The pictures are interrelated, and their collision gives rise to the meaning of the "letter". Similarly, he calls this phenomenon dialectical materialism. Eisenstein argued that the new meanings that emerge from conflict are the same phenomenon seen in the course of historical events of social and revolutionary change. He used intelligent montages in his feature films (such as *The Battleship Potemkin* and *October*) to depict the political situation surrounding the Bolshevik Revolution. He also believed that intellectual montages represented how everyday thought processes occur. In this sense, montages are powerful propaganda tools because they actually form thoughts in the viewer's mind. The intellectual montage follows the tradition of the ideological Russian proletarian cult theater, which was a means of political agitation. Eisenstein's film *Strike* contains a cross-cut edited sequence between the slaughter of a bull and a police assault on workers. With it he created the cinematic trope of the battered worker = slaughtered bull. The effect he wanted to create was not simply to show images of people's lives in the film, but more importantly to shock the viewer into understanding the realities of their own lives. Therefore, this kind of filmmaking has a revolutionary impetus. Eisenstein discussed how a perfect example of his theory is found in his film *October*. The film contains a sequence in which the concept of "God" is tied to a hierarchical structure, and various images with political authority and divinity implications are compiled together in striking order, ultimately associating the concept of God with a block of wood. He believed that the sequence would automatically reject all political class structures in the viewer's mind." (Soviet

**Montage Theory** in *Encyclopedia, Science News & Research Review* Reference Source: Wikipedia, The Free Encyclopedia <https://academic-accelerator.com/encyclopedia/soviet-montage-theory>)





We're getting to the point here: the flow of meaningful images and motion-clips in Eisenstein's montage films is an example of the film-maker evoking a *flow* or *cascade* of ideas - an *intellectual montage* - in the viewer's mind. Ideas like this - both the *synesthesia* (the multimedia/multi-sensual approach) and the *montage of ideas* - underpin later efforts in creating multimedia, multi-screen presentations and performances in both analogue and digital media... I will contend that this 'intellectual montage' is an expression of a suggestive stream of consciousness for the viewer...

In the late 1940s, the elderly Eisenstein reflected upon, and attempted to systematise his theories on *intellectual montage* and produced his last (sadly unfinished) work - a thesis in development from 1932 to 1947 he called *Metod* (*Die Methode* 1947), and around this time, we have a flurry of related key books and papers on information-management and communications, including the computing pioneer Vannevar Bush: *As We May Think* and *Memex* (1945) - the first glimpse of what became known as *hypertext* and *hypermedia* as Theodor Holm Nelson called it in the early 1960s; Norbert Weiner's *Cybernetics* (1947) and Claude Shannon's *Mathematical Theory of Communication* (1949). Though these discussions had been coming to a head before the War - in the 1930s, with major theories of centralised, global information and library archives (and a world encyclopedia): Paul Otlet: *Traite de Documentation + The Mundunium* (1934), and H.G. Wells: *The World Brain* (1938), and the idea of a systems theory had been discussed in depth by Alexander Bogdanov: *Tektology* (*Tektologia Universal Organisation Science* 1912-1917), and in media-technology terms, the 1940s marked the development of the digital computer (from Turing 1936 Zuse 1940) and the transistor (1926 - 1947) - the two founding technologies of modern digital media. We were *en route* to the digital media revolution of the 1980s/1990s, and the streaming media innovations of the 2000s. It seems that the whole drive of 20th century Modernism, the way ideas and thinking itself were the inspiration and the catalyst for our cultural evolution - by mid-century we had begun to develop the intellectual tools - the ideas, the understanding of systems - even the idea of ecosystems, and the information-technology and processing technology (digital computers, transistors, even robotics) ready for our exo-genetic evolution as a planetary streamed thinking, streaming media species.





# СЕРГЕЙ ЭЙЗЕНШТЕЙН | МЕТОД SERGEJ EISENSTEIN | DIE METHODE

Band 1

HERAUSGEGEBEN UND KOMMENTIERT VON OKSANA BULGAKOWA

PotemkinPress

Oksana Bulgakowa (ed) Sergei Eisenstein: *Metod (Die Methode)* 1947

I just love the idea of 'Intellectual Montage' - what happens in the juxtaposition of two or more ideas, signalled to the user/viewer via contextual film montage in this case. This idea was independently explored by the Anglo-Hungarian intellectual Arthur Koestler in the 1960s (Koestler: *The Act of Creation* 1964), it was put succinctly as something like: 'innovation is the result of the bisociation of two or more previously and apparently unconnected matrices of information'. Koestler applied this to scientific discovery, to art, and to the art of humour or wit - so for example, *Cubism* is a result of the bisociation of Relativity, vanishing-point perspective and Cezanne, *Futurism* is the result of the bisociation of Speed, Motion Pictures and Étienne-Jules Marey. In humour, the joker sets up a situation, drawing the listener/viewer into expecting a certain outcome, which the teller subverts by adroitly switching to an alternative matrix: "Mummy, mummy, what's a werewolf? Mummy: 'Shutup and Comb your face'" (early Sixties Sick humour). Eisenstein intuits the mechanism behind this bisociation and *Metod* marks his quest to explain and sytematise this. *Metod* then, is an attempt to provide a theory of bisociation - an explanation of the *Aha!* revelation - the often sudden perception of the newly conceived relationship, described by Koestler, in art, science and humour as the Ah!, Aha! and "Ha ha" responses...



## Correlations between Stream of Consciousness and Collage Creation

In the context of collage and montage creation and the *stream of consciousness* in writing and conversation, there are several parallels that can be drawn. These parallels highlight similarities in the creative processes and the flow of ideas. (Here are some key parallels from a prompt courtesy of ChatGPT-4 edited by my *italicised comments*):

**1. Unconstrained Expression:** Both collage/montage creation and the stream of consciousness allow for unrestricted expression. In collage and montage, artists can freely select and combine various materials without strict rules or limitations. Similarly, the stream of consciousness in writing, improvisation and conversation involves the spontaneous and uninterrupted flow of thoughts, ideas, sense-impressions and memory associations.

**2. Nonlinear Narrative:** Collage/montage and the stream of consciousness often embrace a non-linear narrative structure. Collage/montage artists arrange and juxtapose different elements in a way that may not follow a traditional chronological or logical order. Similarly, the stream of consciousness in writing and conversation can involve a meandering and non-linear progression of thoughts, reflecting the natural flow of the mind. (*Visually 'successful' collage is however mitigated and guided by the artist's innate sense of balance, harmony, scale and spatial distribution*)

**3. Fragmented and Layered Composition:** Collage often involves the use of fragmented and layered elements, creating a sense of depth and complexity. Similarly, the stream of consciousness in writing and conversation can incorporate fragmented thoughts, memories, and associations, resulting in a multi-layered composition of ideas. (*This is especially notable in the artist's use of dissimilar source materials - news-cuttings, corrugated card-board, beer-mats, matchbox labels, tissue-paper etc*)

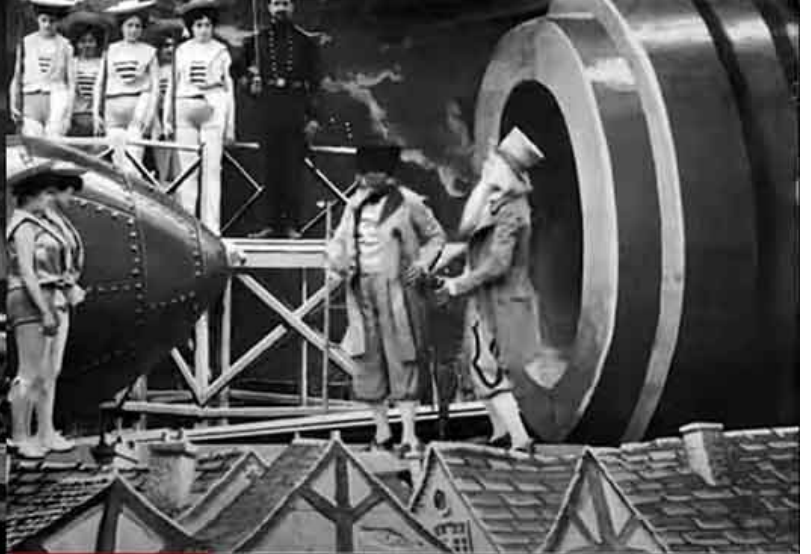
**4. Intuitive Decision-Making:** Both collage/montage creation and the stream of consciousness rely on intuitive decision-making processes. Collage/montage artists make choices based on their instincts, emotions, and aesthetic preferences when selecting, cropping, and arranging materials. Similarly, the consciousness in writing and conversation involves spontaneous and instinctive choices in the selection and organisation of words and ideas.

**5. Personal Expression and Interpretation:** Collage/montage creation and the stream of consciousness allow for personal expression and interpretation. Collage/montage artists infuse their own experiences, emotions, and perspectives into their work, creating unique compositions. Similarly, the stream of consciousness in writing, *improv* and conversation reflects an individual's thoughts, feelings, and personal associations, offering a glimpse into their inner world. (*this may be reflected in the individual's spiritual sense of the world.*)

By recognising these parallels, we can appreciate the artistic and expressive qualities of both collage creation and the stream of consciousness in writing and conversation.

(this is from a query of ChatGPT4)

Finally, psychologists and philosophers agree that the *stream of consciousness* expresses or deals with a *pre-speech level of consciousness* (Alfred Korzybski 1948). It describes the unedited *potential content* of speech or expression. In collage/montage the germ of ideas that emerge in the process of searching, acquiring and incorporating the raw collage/montage materials. *These materials may then be cropped, cut-out, vignettted and incorporated in the developing piece according to the aesthetic decision-making of the artist, and the construction of whatever ideas or connotations he or she wishes to communicate to the target audience...*



**Georges Melies: selected frames from first few minutes of Melies: *Voyage dans la Lune* 1902**  
If we take this as an example of the kind of short films that Picasso and Braque would have seen in this period (I know its the most famous early film) then even here, in this otherwise 'conventional' film (static camera, fixed lens), the cuts from one scene to another, the limited range of distance shots (long-shot to medium close-up), and the mix of perspectives, the rapidity of switching these camera-views - over the several minutes of the film, I am suggesting that even seeing 3 or 4 of these short films per week could (maybe *would*) have had a profound effect on the sensibility of these two artists - who are not only profoundly, professionally and expertly interested in questioning the continuing validity of 'vanishing-point' representations of reality, and actively looking for a new vision for painters, but also aware of the philosophically revolutionary notions of relativity and the '4th dimension' of Hermann Minkowski (having seen the diagrams included in Esprit Jouffre's book on the geometry of this multi-dimensional space/time - see next page).

**Quote from Braque here from Gertrude Stein and John Richardson**

It's hard to describe exactly how a professional artist looks at (forensically sees) the world. As students we were taught to draw in the dark, to draw the space between things - that would help subvert the logical half of our brain from insinuating that 'it' knows best ('you know what a cup looks like, don't you? So pay no attention to what your eyes are telling you' - but we don't know what the space between things looks like, so we have to look more carefully). Hockney: **"We don't all see the same way at all. Even if I'm sitting looking at you, there is always the memory of you as well. And a memory is now. So someone who's never met you before is seeing a different person. That's bound to be the case. We all see something different. I assume most people don't look very hard at anything."**

(see also: David Hockney: *Secret Knowledge* 2001 + Betty Edwards: *Drawing on the Right-hand Side of your Brain* 1979)

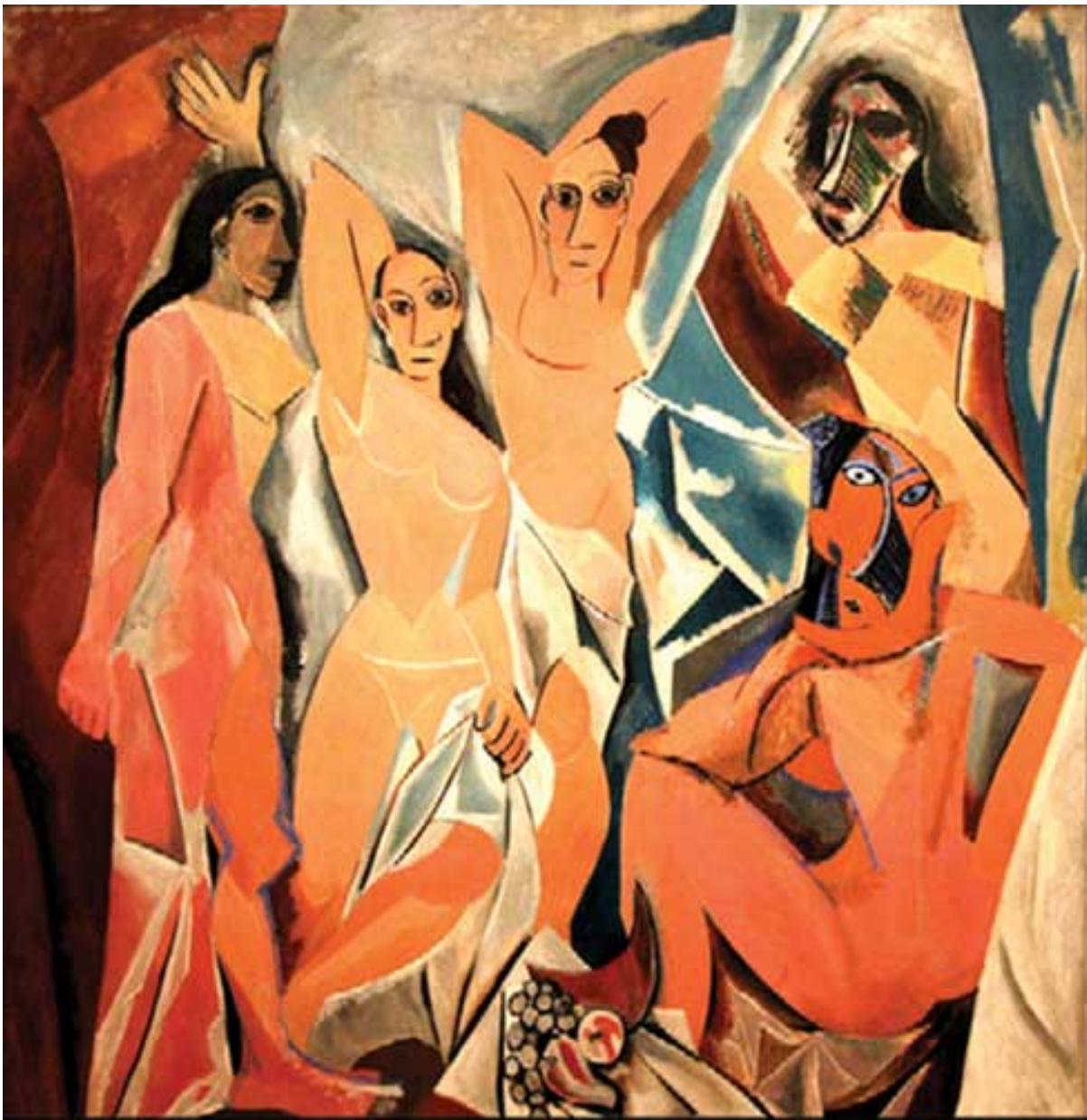




Kurt Schwitters

**Kurt Schwitters: *Merz Blauer Vogel* ('Blue Bird') 1922.** Here you can see the formal, aesthetic harmony and balance in Schwitters' collage - each component selected, positioned and set-in-place to provide a colour harmony, a compositional balance, unifying the diverse selection of Merz (rubbish) that he has retrieved from the studio-floor, the street, the cafe, the ad hoardings, yesterday's discarded newspapers, the tickets, receipts and other printed ephemera that mark our progress through the modern city...and through life. The words on Schwitters' collage might be strung together to mean "Isn't this just lovely and normal? they're my everything", or "she means everything to me" perhaps the masked woman in the torn newspaper photograph? Do you think the newspaper components were already browning and faded when he made this collage? Schwitters liked the idea of *Merz* - a nonsense word he connoted with Dada - using rubbish to make art in a defeated, inflation-ridden and devastated Berlin in the early 1920s, where traditional art materials were not available (the director Robert Weine devised painted sets and props - and painted 'lights' too for his *Cabinet of Dr Caligari* (1920) at this time).





Pablo Picasso: *Les Femmes d'Alger* 1907 The *Alger* was a brothel in Barcelona much frequented by Picasso and his fellow art-students. This painting shocked and dismayed Gertrude Stein and many of *La Bande à Picasso*



Leopold-Emile Reutlinger: *Portrait postcards*. very cleverly mixed tinted half-tone photo-portraits of stage and music-hall celebrities with period graphic backgrounds and the postcard became a vehicle for reprographic innovation...



**This courageous experimentation in painting** (above Ernst Ludwig Kirchner: *Franzi in front of a curved chair* 1910; and Piet Mondrian: *Evening; Red Tree* 1910). Kirchner in an expressionist false-colour oil-sketch; Mondrian at the beginning of a series of paintings gradually removing detail, so that he arrived eventually at an essence of vertical (male?) strokes and horizontal (female?) forms - and, in the 1920s, his theosophically-informed, geometrical abstract explorations on canvas. The flow of Modernism kick-started experimentation in all the arts, as we'll explore over the next pages...



The correlation of using pictorial 'concept maps' in design long preceded the theoretical statistical network analysis much of which was triggered by the advent of internet and web-based social networks from the 1980s onwards. From top left: **Fashion Colour boards**, takes a central colour theme for the season coming up, and visually explores a range of colour options, extensions and variations of that theme, using photographs, illustrations, Pantone-swatches and other visual devices to explore and to map the potentials. Colour themes are usually established by a 'strange consensus' of dye-manufacturers, fashion editors, fashion commentators and critics, and designers, design-historians and researchers, and colour boards are used by designers very early in the process of fashion-design.



**Fashion 'Mood' boards** (left middle) are pictorial concept-maps that attempt to explore, to capture, and to examine what fleeting glimpses of the zeitgeist are being explored by contemporary designers, taste arbiters, hipsters, influencers and street-fashion cognoscenti. These are compiled by designers very early in the design-process - it's an initial 'mapping' process. Mood boards are used in other design disciplines too - indeed they probably began with architects and interior designers early in the 20th century.



**Crime Investigation boards** (left bottom) I'd like to imagine that this (nowadays, seemingly indispensable) investigation tool was coeval with 'Bertillonage' - Alphonse Bertillon's use of anthropometrics in criminal investigation and the invention of 'mugshots' in the period 1879 -1912 - but there's no evidence for this. Concept mapping was formally investigated by the American educationalist Joseph Novak in the 1970s, though I guess the use of 'spider-maps' and 'radial tree'-diagrams of inter-relationships had preceded this - for example we have examples of a radial-tree organisational chart from 1924, and examples of information/logical diagrams going back to at least the 12th century (see Ramon Llull: *Ars Magna*). Visual diagrams reveal possible connections and inter-relationships between real-world facts and trends...



## Collage - the back story

The practice of collage, often mixing paintings, photography and mass-printed ephemera became a genteel hobby in the second half of the 19th century (vis the number of surviving collages on folding screens used to demarcate areas of a room), as practitioners like Princess Alexandra adorned her watercolours with her family photographs (*Design with Flowers* 1865) and created albums of her European tours (*Norwegian Cruise Album* 1893), but the use of collage in fine art became a *modus operandi* of Modernism from around 1908 (Braque and Picasso 1907-1912).

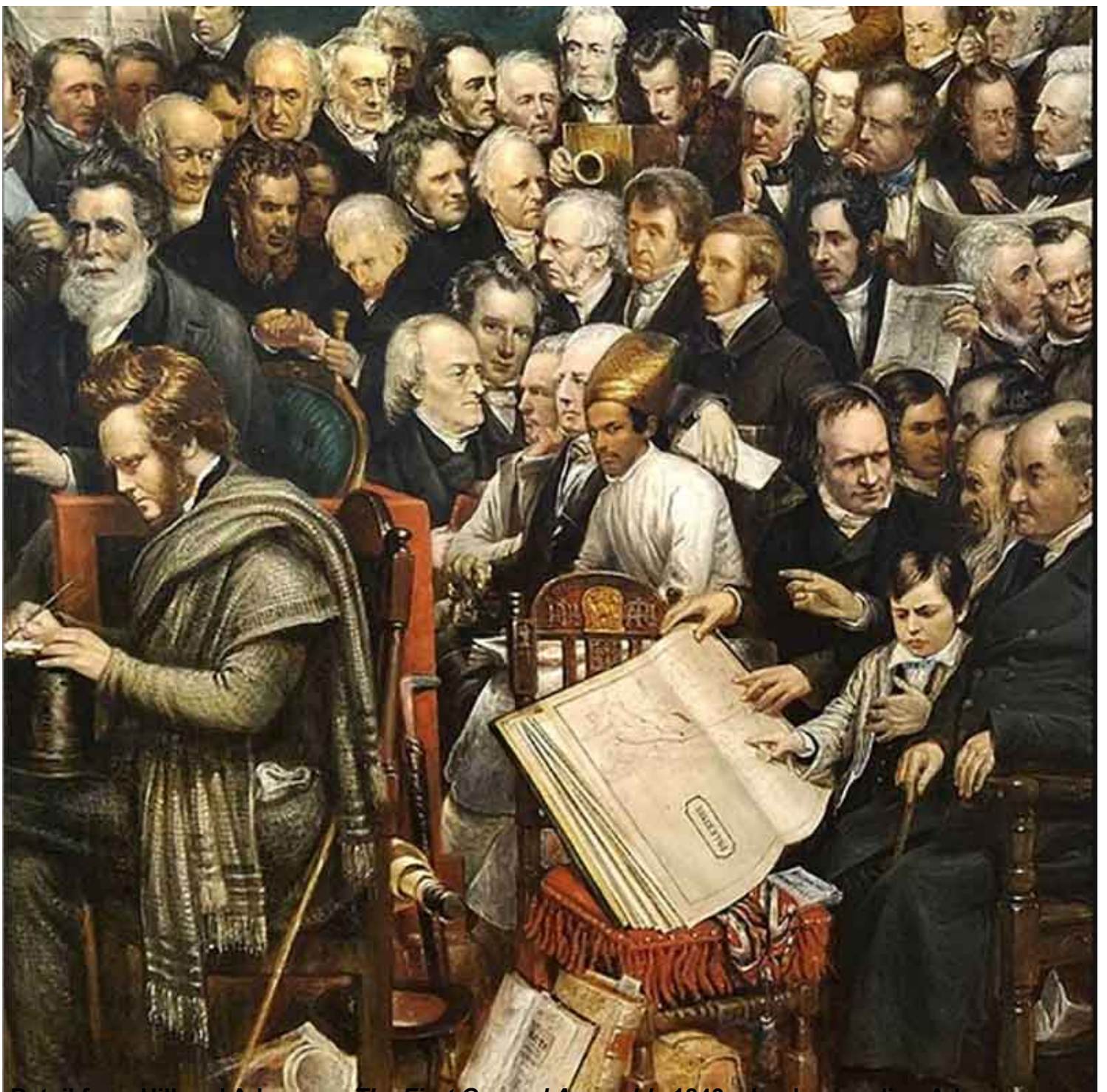
Dawn Ades, in her book *Photomontage* (1976) covers the birth and evolution of collage and photomontage most thoroughly, but there are a couple of very interesting early 19th century examples that she doesn't mention. The very earliest, perhaps the first in a strand of what became known as *Pictorialism* (Peach Robinson, Oskar Rejlander c1857). The first example, is David Octavius Hill and Robert Adamson's *The First General Assembly of 1843* - a painting, created by Hill, from a huge montage of individual portraits made by Adamson (see below and next page for a detail). The apparent fluency of this hybrid medium, combining a traditional medium (oil on canvas) with a brand new technical medium (*the photograph from c1839*), announces two things: a kind of pictorialist practice ('art-photography') made famous a decade or so later by Henry Peach Robinson and Oskar Gustave Rejlander, and a brand new hybrid medium - a distinctly proto-modernist medium.



David Octavius Hill and Robert Adamson: *The First General Assembly of the Free Church of Scotland signing the Act of Separation and Deed of Demission* 1843.

The experimentation in art and media stretched throughout the 19th century- before and after the momentous breakthrough of photography. By the end of the century, the Pictorialist movement was central to avant-garde photography, and halftone reproduction in print was commonplace (this photo-mechanical process meant that the practise of manually engraving (copying) a photographic image fell into disuse. This allowed a much greater use of photographs in print - in newspapers like the *New York Daily Graphic* which published its first 'halftone' 'A Scene in Shantytown' in March 1880. Though the *Illustrated Canadian News* had started using monochrome half-tone as early as 1869, so like the experimentation in creating the motion-picture, various techniques were used in perfecting the half-tone. Ives patented his technique in 1881, and this became the dominant reprographic technique for the next few decades. It's interesting that after the Maxwell/Young/Helmholtz *Trichromatic Theory of Colour Vision* (from c1805 to c1861), artists began using *Impressionist* and eventually *Pointillist* techniques in their painting - by the 1890s, effectively using dots to simulate the mix of colours in nature. In this same decade, the printing of full-colour images using Cyan, Magenta and Yellow with an overprint of black (called CMYK in the trade) also used screens that produced a half-tone (dot) screen for each colour. When printed in registration, this produced a full-colour print. Thus scientific theory, media technology and art converged to introduce full-colour images to the broader public in the pre-Modern 1890s, setting us up for a revolution in publicity, advertising and marketing - and in publishing generally, children's illustrated books in particular...



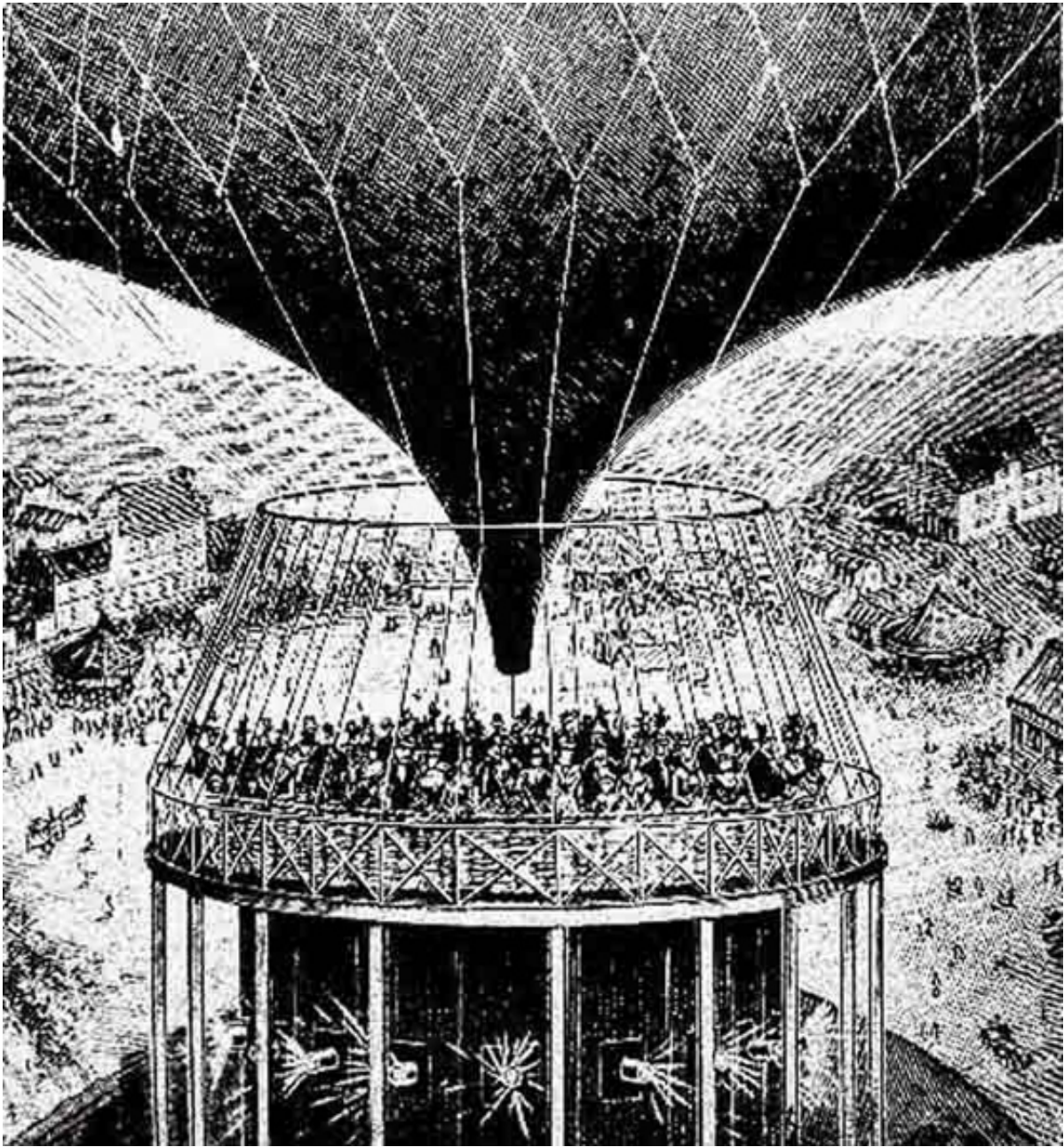


Detail from Hill and Adamson: *The First General Assembly 1843*, clearly revealing Adamson with his Sliding Box 10x8" plate camera (centre top), and Hill's sketchbook can be seen just behind him. The detail also reveals the disparate perspectives, cropping and posing of the individuals making up the massive group composition. The disparities show especially in the scaling and size of the heads throughout the detail. The other factor of interest is that in the portraits (taken individually) only a few of the participants are actually looking at the camera, nor indeed, are they looking at a common point of interest. I assume Octavius Hill was presented with a pile of individual portraits, and that he and Adamson cut-out the figures and montaged them together - the detail above clearly shows this possibility. Then I assume that Hill worked from this montage in creating his finished painting - which was completed in 1866, 23 years after the Assembly took place. Adamson died in 1848, so the individual portraits he made just spanned 5 years or so. Did they complete the presumed collage of all the portraits in this time? Or did Hill use another technique (such as sketching the entire First General Assembly just relying on individual portraits for reference? We don't know, but I think the collage approach is probable, and if so, it would make *The First General Assembly* a landmark innovation in hybrid-media. The 'realist' artist Gustave Courbet, in his *Bathers of 1853* clearly used Julien Vallou de Villeneuve's photographs of Henriette Bonnon as reference for his painting, so the practice was growing by mid-century (see Aaron Scharf: *Art and Photography* 1968).



Thus began the seamless flow of media into intermedia, (mixed media, hybrid media, multimedia etc) as new communications and imaging technologies appeared throughout the century (with Brewster's *Kaliedoscope* 1816, Wollaston's *Camera Lucida* 1819, Niepce's *Heliographs* 1827, Plateau's *Phenakistoscope* 1832, von Stampfer's *Stroboscope* 1832, Daguerre's *Daguerreotype* 1838, Fox-Talbot's *Calotype* 1839, Herschel's *Cyanotype* 1842, Corot's *Cliche-Verre* 1854, Disderi's *Carte de Visite* 1854, Rejlander *combination-prints* 1857, Linnet's *Kineograph* flip-book 1868, Dubosq's *Grimatiscope* 1870, Nadar's *Aerial Photographs* 1870, Crooks Tube 1875, Vertillon's *photo ID* 1879, accelerating in the last two decades with Demeny and Marey's *multi-print motion-capture* 1882, Ives's *half-tone* 1882, Seurat's *Pointillism* 1884, Eakins and Muybridge's *sequential motion-capture* 1887, Renaud's *Theatre-Optique* 1887, Le-Prince's *Motion-pictures* 1888, Freise-Green's *motion magic lanterns images* 1889, Reutlinger's *pictorial post-cards* 1890, Loie Fuller's *Serpentine Dance* 1892, Muybridge's *Zoopraxiscope* 1893, Edison and Dickson's *Kinetoscope* 1894, Bowditch's *multi-overprint portraits* 1894, Lumiere's *Kinora* 1895, Lumiere's *Cinematography* 1895, Lumiere's *Arrival of a Train* 1896, Alice Guy Blache: *Cabbage-Patch Fairy* 1896, Casler and Dickson's *Mutoscope* 1898, Lubin's *Rooftop Film Studio* 1899, Blackton's *Enchanted Drawing* animation 1900...)

Resulting in the fabulous mechanical-motion-image simulations of the 1900 Paris *Grand Exposition*, with D'Alesi's *Mareorama*, Lumiere's *Photorama-Lumiere*, Grimoin Sanson's *Cineorama* - all 1900, and by this time modernist media had enchanted the public and the critics alike...the first immersive expo-size simulations of travel experiences...



Raoul Grimoin Sanson: *Cineorama* 1900. This is a flight simulation on a grand scale. Three years before the first powered aeroplane flight, Grimoin Sanson used a synchronised set of 70mm movie-cameras (!) to shoot from a balloon ascending over central Paris and in his simulation, a synchronised set of radially-mounted projectors to project these images onto the surrounding circular screen. Comfortably seated in the central 'basket', the audiences were treated by the immersive illusion of ascending and descending in a balloon over their city....This and the other 'ride' simulations at the Paris Exposition in 1900, broke entirely fresh cultural ground, effectively mechanising Daguerre's *Dioramas* and *Panoramas* from the early 19th century. Huge simulators like these, combined with the 'Nickelodeon' style peep-shows of the *Mutoscope*, *Kinetoscope*, *Phenakistiscope*, (and others), and the screened projected film-shorts shown in halls, bars, cafes etc would have given the Cubists ample opportunity for seeing the 'movies' during this formative period...











## AI and stream of consciousness

In the new generation of AI tools based upon Large Language Models - (including ChatGPT, Google Bard and Microsoft Bing Chat etc), - and the huge success of ChatGPT and Large Language Models in tapping into the *digital collective unconscious* of the world of stored data on the WWW - presents us with a massive extension and re-versioning of our Jungian collective unconscious.

The idea for chat-based learning was explored in 1966 by Joseph Weizenbaum with his expert-system *Eliza* - a Rogerian-psychiatrist trained *chat-bot* - the world's first interactive, computer-based chat -'companion'. Techniques of Machine-Learning have vastly improved since the 1960s, the latest generations of Chat-bots stem from OpenAI (an organisation created by a group of researchers and entrepreneurs including Elon Musk and Sam Altman, formed in 2018) - who have also developed *Dall-E* an AI *text to visual art* generator.

The artificial stream of consciousness generated by GPT are based upon Large Language Models (LLM) - "Large language models are AI systems that are designed to process and analyze vast amounts of natural language (and other data, music, coding etc) and then use that information to generate responses to user prompts. These systems are trained on massive data sets using advanced machine learning algorithms to learn the patterns and structures of human language, and are capable of generating natural language responses to a wide range of written inputs. Large language models are becoming increasingly important in a variety of applications such as natural language processing, machine translation, code and text generation, and more." (Databricks: *Compact guide to LLM ebook*.)

Effectively LLMs tap into the huge amounts of information stored on the Web in natural languages (in English as well as a large number of languages) and use this to make responses to our queries on any subject, not just as a search engine, but as conversation, as conversational 'chat'. They build upon early 'expert systems' and research into language-translation (for a history of AI see Ray Kurzweil: *The Age of Intelligent Machines* 1990 + *The Age of Spiritual Machines* 1999). Freud described several insights into stream of consciousness in 1915 including his idea of *Free Association*, and the *Stream of Unconsciousness*, Jung added to this by stressing the likelihood and evidence for, of humans having access to a *collective unconscious* - a collective memory. "Jung believed that the unconscious was inherited from the past collective experience of humanity." (Lisa Fritscher at <https://www.verywellmind.com/what-is-the-collective-unconscious-2671571>)

According to Jung in his article *The Structure of the Unconscious* (1916), the collective unconscious is made up of an inherited collection of knowledge embedded in the deepest levels of everyone's unconscious - a kind of body-knowledge that everyone is born with and that expresses itself through the archetypes of the collective unconscious, "including:

**Anima:** Symbolized by an idealized woman who compels man to engage in feminine behaviours

**Animus:** Woman's source of meaning and power that both creates animosity toward man but also increases self-knowledge

**Hero:** Starting with a humble birth, then overcoming evil and death

**Persona:** The mask we use to conceal our inner selves to the outside world

**Self:** The whole personality; the core of the total psyche

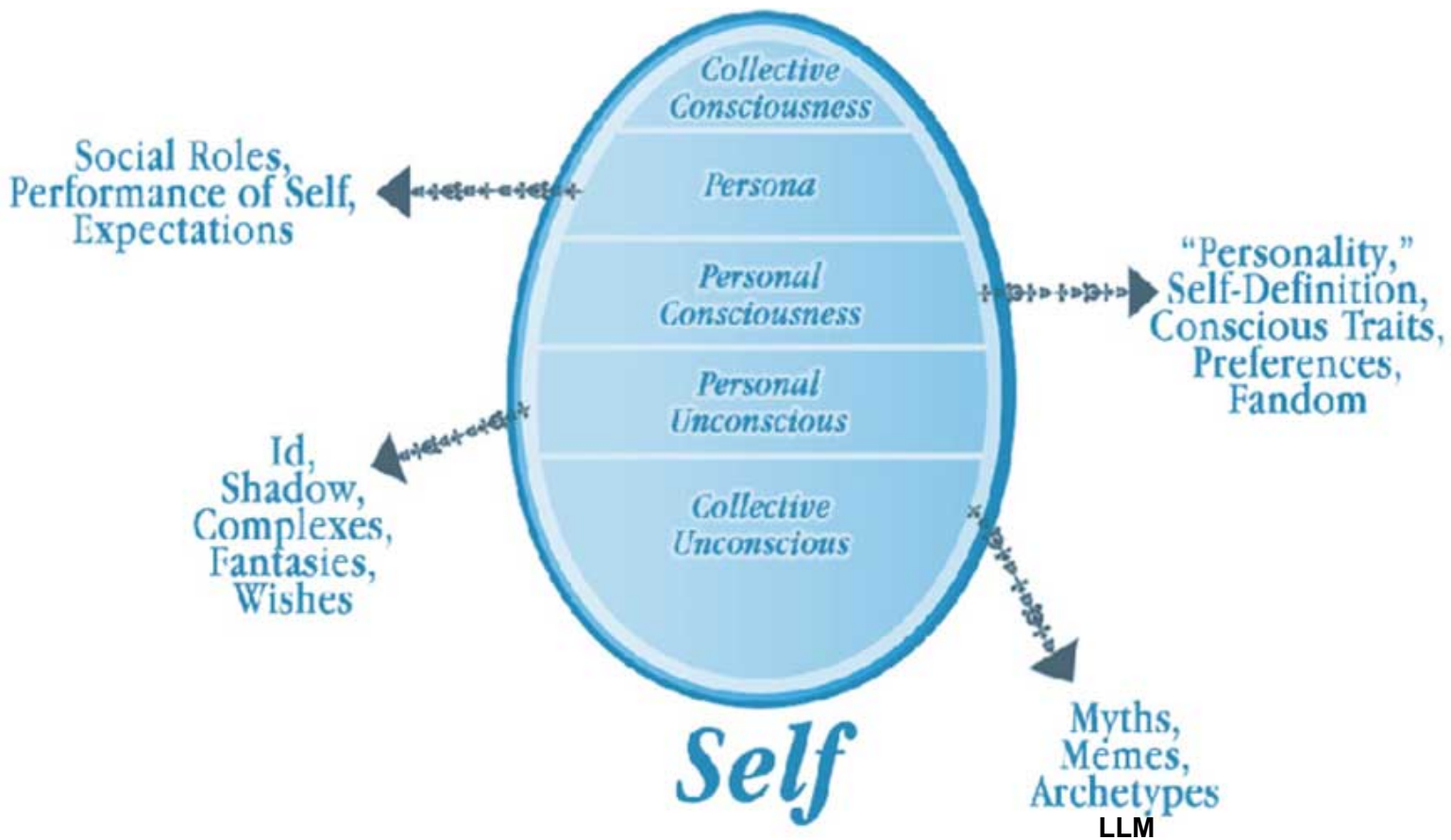
**Shadow:** The psyche's immoral and dark aspects

**Trickster:** The child seeking self-gratification, sometimes being cruel and unfeeling in the process

**Wise old man:** The self as a figure of wisdom or knowledge. For example, wizards and revered teachers." (Lisa Fritscher) "Sometimes referred to as the "objective psyche," the collective

unconscious refers to the idea that a segment of the deepest unconscious mind is genetically inherited and not shaped by personal experience. This notion was originally defined by psychoanalyst Carl Jung.

According to Jung's teachings, the collective unconscious is common to all human beings. Jung also believed that the collective unconscious is responsible for a number of deep-seated beliefs and instincts, such as spirituality, sexual behavior, and life and death instincts"...



Sarah Lynn Bowman: *diagram of Jung's concept of Self* 2017

The collective raw data of LLMs and Jung's idea of the *Collective Unconscious*. Bowman's diagram clarifies Jung's thinking on the relationship within the unifying *Self* and the collective unconscious and its expression in our conscious minds (our *Personal Consciousness*) in Myth, Faerie, and Folklore (the recurring archetypes of our collective unconscious) that also make an appearance in our individual stream of consciousness (or as Jung noted, our *stream of unconsciousness* - the underpinning repository from which we draw as our 'attention' demands. This is similar to the way that ChatGPT and other AI queries draw from Large Language Models (LLMs) of the acquired data, information, knowledge and teachings of mankind as deposited within the Internet/WWW. Our queries direct the attention of the LLM to the collected 'digital memories' and the AI chatbot formats this data in conversational natural language (or as structured code in our preferred code-language - or in the style of imagery we have specified, or the literary-style we have specified). The Chat-bot draws the 'attention' of the LLM, or *focuses* the LLM on the user's query... So in this sense, in ChatGPT and other AI Chat tools, we have created an LLM simulation of the collective unconscious (all the things we are unaware of, until our attention is drawn to it), and a tool for interrogating it.

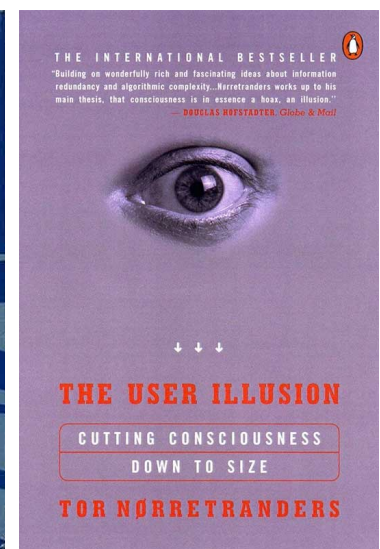
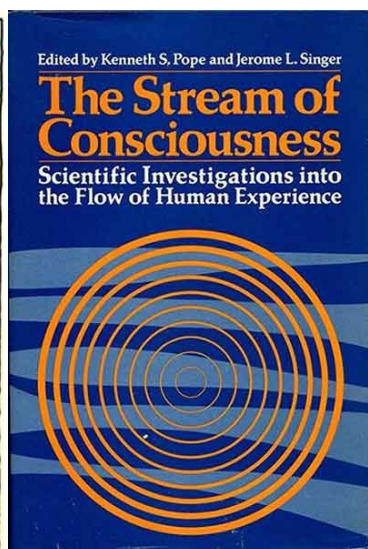
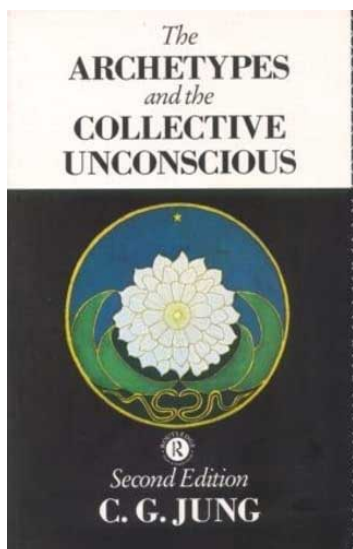
This might be a useful analogy between our 'collective unconscious' and LLM. I find it quite useful, and it's important in this article, as it is our collective unconscious and our personal unconscious that together with our conscious emotions, memories, feelings and associations - our thoughts interlinking with our memories, dreams, aspirations - that make up our personal *stream of consciousness*. That LLMs draw from a digitally stored collective 'memory' of everything that has been stored, expressed as natural language, as code or as images or sounds, essentially means that the entirety of human knowledge of every subject, plus all of our imagined explorations of what people and fictional characters are thinking (ie all our novels, our plays, our poetry, *and* our collected myths, fables, folk-tales and faerie tales) are part of the LLM knowledge-base from which are queries are answered- or at least responded too. This is undoubtedly a form of 'collective unconscious' (ie it's not available to us, until we direct it to examine or collate ('to generate') these collective digital memories for us on demand (in other words to seed or 'focus the attention' of the GPT on the stuff we want).



The relationship within our consciousness, between our conscious and our unconscious mind - and perhaps the 'collective unconscious' persuasively argued for by Carl Jung, gives you some idea of the philosophical territory we are exploring here. Then we have to consider the scientific validity of the search for the 'neural correlates' (the actual part or parts of the brain activated by or with the 'qualia' we experience (the colours, the senses of smell, sight, hearing, touch etc the emotions, pain, wellbeing etc we know we feel or experience) - which is the main hurdle for most scientists - they can't find the qualia centres in the brain, and therefore deny that qualia are real - which is nonsense of course for all of us non-scientists. As artists of course, it is a denial that our aesthetic experiences exist - that we don't experience colour, don't smell the rose, taste the peach, don't gasp with awe awe, don't feel empathy, pain, sympathy, love, angst etc). So while neurologists are looking for the *neural correlates of humanity*, we have to make a temporary, ad hoc or heuristic theory of aesthetic consciousness. To my mind (and to David Lodge's) our inner consciousness, including qualia, are best left to novelists in their description of how their characters (real or fictional) think and feel. (See: David Lodge: *Consciousness and the Novel* 2002) We can also argue for artists (painters, dramatists, actors, composers, musicians, poets, film-makers etc) having particular skills in interrogating and describing how we think and how we feel, sensorially, psychologically, and emotionally about what happens to us in everyday life and in various problems or situations we face. Frankly, if neurologists do ever discover the neural correlates of qualia and are able to describe parts of the brain that conjure the colour red for example, how will this help the average human being? Sure it will help philosophers and scientists say they have a materialistic theory of consciousness, but for us ordinary mortals, we will still look to the artists to express these experiences, or else we can delve into our own minds through careful observation, meditation, reflection, prayer, yoga or hallucinogens.

And this goes for our personal memories too. No scientific (materialist) theory can explain what happens in the brain (maybe in the hippocampus specifically) when long-term memories are called into our consciousness (ie 'remembered') by us and slotted into our minds in writing, or in conversation, in imaging, in sound, or in making pictures. Nor what happens in the torrent of stream of consciousness, nor in hypnagogic dreams or deep dreaming or visionary thinking. It's this mix of the conscious and unconscious and semi-conscious with the welter of somatic experiences of being alive, the layers of temporary memory and deep memory and the archetypes that appear from the collective memory that are iterated in folklore and myth and faerie. But artists, folklorists, poets and mythographers explore these territories, sift and sort them, explain, reiterate and represent them to us in a never-ending recycling of primordial experience nuanced with and adjusted by the present.

(see David Lodge: *Consciousness and the Novel* 2002 + Lodge: *Thinks*. 2001 Carl Jung: *Aion: Researches Into the Phenomenology of the Self* 1991 + Joseph Campbell: *Masks of God: Primitive Mythology* 1959 + Joseph Campbell: *Masks of God: Creative Mythology* 1968 + Mircea Eliade: *The Eternal Return* 1954)



The idea that our primordial narrative culture – our myths, folk stories, legends, and ancient poems – survived in oral traditions well into the 20th century was appraised by several authors in the last 100 years or so – the keynote ones for me being James George Frazer: *The Golden Bough* (1890), Vladimir Propp: *The Morphology of the Folk Tale* (1928); Robert Graves: *The White Goddess* (1948); and Albert Lord in his important *The Singer of Tales* (1960), on the more general origins and survival of myth and religion, the best collection is by the mythographer Joseph Campbell in his tetralogy *The Masks of God* (from 1962). It was Albert Lord who followed Milman Parry's journeys in Yugoslavia in the 1930s, recording poets who still recited (and reformulated) the ancient verses according to what Parry called the *Oral Formulaic Hypothesis* – essentially that the transliterations (the written forms of ancient oral verse) took only one 'snapshot' of the surviving original, and that each time these stories and verses were reiterated, the living poet transformed them by means of not just oral performance, but oral composition too. (Bob Cotton: *Grimm's Fairy Tales in MediaPlex Volume 1 1800-1900* 2018)

The verity of Jung's idea of the *Collective Unconscious* was affirmed for me by the opening passage in Joseph Campbell's *Primitive Mythology*:

"The comparative study of the mythologies of the world compels us to view the cultural history of mankind as a unit; for we find that such themes as the fire- theft, deluge, land of the dead, virgin birth, and resurrected hero have a worldwide distribution—appearing everywhere in new combinations while remaining, like the elements of a kaleidoscope, only a few and always the same. Furthermore, whereas in tales told for entertainment such mythical themes are taken lightly— in a spirit, obviously, of play—they appear also in religious contexts, where they are accepted not only as factually true but even as revelations of the verities to which the whole culture is a living witness and from which it derives both its spiritual authority and its temporal power. No human society has yet been found in which such mythological motifs have not been rehearsed in liturgies; interpreted by seers, poets, theologians, or philosophers; presented in art; magnified in song; and ecstatically experienced in life- empowering visions. Indeed, the chronicle of our species, from its earliest page, has been not simply an account of the progress of man the tool-maker, but—more tragically—a history of the pouring of blazing visions into the minds of seers and the efforts of earthly communities to incarnate unearthly covenants. Every people has received its own seal and sign of supernatural designation, communicated to its heroes and daily proved in the lives and experience of its folk. And though many who bow with closed eyes in the sanctuaries of their own tradition rationally scrutinise and disqualify the sacraments of others, an honest comparison immediately reveals that all have been built from one fund of mythological motifs—variously selected, organised, interpreted, and ritualised, according to local need, but revered by every people on earth."

Frances Gray describes the attraction of radio: "Like a bedtime story, it whispers in our ear. Without visual distraction, the smallest subtleties of the voice become apparent and seize the imagination, a snatch of song and the rustle of leaves takes on a significance impossible in the theatre or on film. As soon as we hear the word in a radio play, we are close to the experience it signifies; in fact the sound is literally inside us." (France Gray in John Drakakis: *British Radio Drama* (1981))

I have this fascination in imagining the kind of primordial campfire gathering that must have been a norm amongst our ancient (pre-neolithic?) nomadic hunter-gatherer ancestors. The fire-light, the coloured smoke of different woods, the star-light, the shifting moon-light, the shaman-performer, the stories drawn from the collective memory and wisdom of the tribe - the long mnemonics - what Albert Lord called the *Singer of Tales* - the infinite variety of the Song, the weaving together of a story relevant to those listening and participating - singing the chorus, the re-enactments of bits of the story, the miming, the jokes, the mimicry, the laughter, the dancing, the personal and tribal anecdotes, mimicry and jokes, the acrobatics, the music, the drumming, the face-making and face-paintings, body-markings, the animal and bird costumes and head-masks, the ululation, the cries of fear, of joy, the ghostly moon, flitting clouds, the shooting stars, the vast milky way, the infinitude of it all, the wild, the firelit tribal family linked together by firelight.... Is it those two million years (some 80 thousand generations) of our nomadic evolution, our portability, our family-tribal unity around the fire and the food, after the hunting/gathering - that we try to re-evolve vicariously in these multi-media performances-cum-story-telling performances? We aim at immersion, synesthesia, multiple (mixed) media, interaction (input, feedback, question and answer, interjections, amplifications, examples and extrapolation) and these have been inspirations from the earliest days of Modernism - in Jarry's *pataphysical theatre*, DADAs *Cabaret Voltaire*, the dialectic of *Agit-Trains* and *Spartakiada*...and on to *Happenings*, art-performance, Tinguely's *Homage to New York*, Isaac's *Knowledge Box*, Vanderbeek's *Moviedome*, Warhol's *Exploding Plastic Inevitable*, - and on to *Raves* and 1980s *Club* scene, and Adam Curtis *Hypernormality*, and the Daniel's *Everything, Everywhere, All at Once*...

Gender consciousness here + Oral Formulaic hypothesis

<https://iai.tv/articles/does-consciousness-have-a-gender-auid-2033>

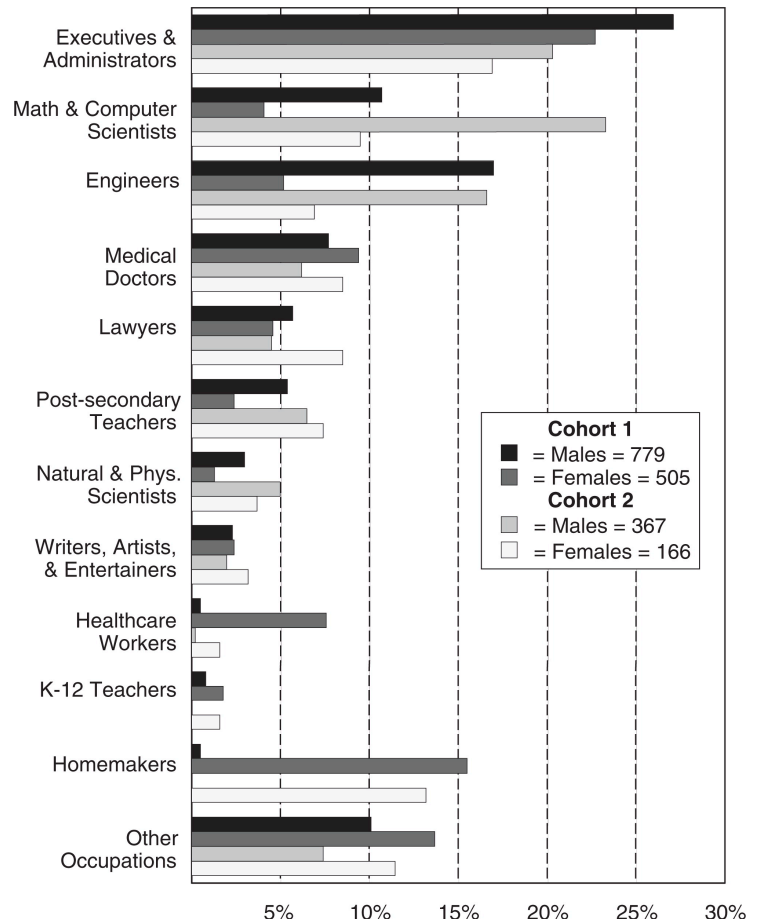
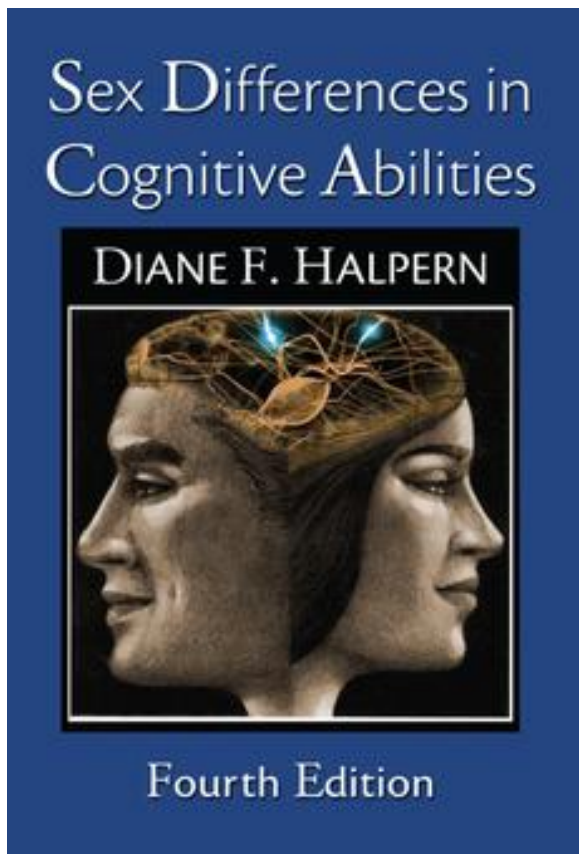
Thomas Nagel's classic paper "What is it like to be a bat?" (*Philosophical Review* 83.4, October 1974, pp.435-450)



## Gender and Body in Consciousness Studies

"In the third edition of her popular text, *Sex Differences in Cognitive Abilities*, Diane Halpern tackles fundamental questions about the meaning of sex differences in cognition and why people are so afraid of the differences. She provides a comprehensive context for understanding the theories and research on this controversial topic. The author employs the psychobiosocial model of cognition to negotiate a cease fire on the nature-nurture wars and offers a more holistic and integrative conceptualization of the forces that make people unique. This new edition reflects the explosion of theories and research in the area over the past several years. New techniques for peering into the human brain have changed the nature of the questions being asked and the kinds of answers that can be expected. There have been surprising new findings on the influence of sex hormones on cognitive abilities across the life span, as well as an increasing number of studies examining how attention paid to category variables such as one's sex, race, or age affects unconscious and automatic cognitive processes. Written in a clear, engaging style, this new edition takes a refreshing look at the science and politics of cognitive sex differences. Although it is a comprehensive and up-to-date synthesis of scientific theory and research into how, why, when, and to what extent females and males differ in intellectual abilities, it conveys complex ideas and interrelationships among variables in an engrossing and understandable manner, bridging the gap between sensationalized 'pop' literature and highly technical scientific journals. Halpern's thought-provoking perspectives on this controversial topic will be of interest to students and professionals alike. [features used for book mailer] FEATURES: \*Includes new information about sex differences and similarities in the brain, the role of sex hormones on cognition (including exciting new work on hormone replacement therapy during menopause), new perspectives from evolutionary psychology, the way stereotypes and other group-based expectations unconsciously and automatically influence thought, the influence of pervasive sex-differentiated child rearing and other sex role effects, and understanding how research is conducted and interpreted. \*Takes a cognitive process approach that examines similarities and differences in visuospatial working memory, verbal working memory, long-term acquisition and retrieval, sensation and perception, and other stages in information processing. \*Provides a developmental analysis of sex differences and similarities in cognition extending from the early prenatal phase into very old age. \*Tackles both political and scientific issues and explains how they influence each other--readers are warned that science is not value-free. \*Uses cross-cultural data and warns readers about the limitations on conclusions that have not been assessed in multiple cultures. \*Includes many new figures and tables that summarize complex issues and provide section reviews. It is a beautifully written book by a master teacher who really cares about presenting a clear and honest picture of contemporary psychology's most politicized topic" .

(taylorfrancis.com)



# The Gender Stream of Consciousness

Well, seeing as how its taken ages for neuroscientists to admit, let alone acknowledge, that the qualia of our experience do in fact exist, even if they haven't yet established their neurological roots, its not surprising that the (largely male-dominated) profession, never bothered to check whether there were any gender differences in our human streams of consciousness. Until relatively recently that is.

"This paper identifies and analyzes three constructs basic to the study of gender relations-boundaries, negotiation and domination, and consciousness. The concept of boundaries describes the complex structures- physical, social, ideological, and psychological-which establish differences and commonalities between women andmen, among women, and among men. The reciprocal processes of negotiation and domination elucidate the ways in which women and men act to support and/or challenge the existing system of gender relations. While domination describes systems of control and coercion, negotiation addresses the ways women and men bargain for privileges and resources. Consciousness assumes various forms ranging from gender awareness to feminist/anti-feminist consciousness, and is conceived as a process which develops dialectically in the social relations of the sexes. We argue that this conceptual framework produces a more sensitive and complex set of analytical tools for understanding gender relations."

(Judith M. Gerson and Kathy Peiss: *Boundaries, Negotiation, Consciousness: Reconceptualizing Gender Relations: Social Problems*, Vol. 32, No. 4 (Apr., 1985), pp. 317-331)

Of course, consciousness does have a gender - male scientists have largely ignored this rather obvious fact - that our sense of self, or everyday streams of consciousness (how we think, how we feel, how we react to being in the world - even in our own private world) - must be affected by our bodily consciousness (and all the contextual experiences, joy, disgust, memory, pleasure, bruises etc that goes with it) Gender and Consciousness are inextricably linked, so where's the research into female consciousness?

"Sex is distinct from gender; I'll explain how in a moment. So this question also can be divided in two. We can ask whether there is anything it is distinctively like to be female or male (a question about sex). And we can ask whether there is anything it is distinctively like to be feminine or masculine (a question about gender).

I think the answer to both these questions is "Obviously yes". Why yes? And why obviously?

There is something it is distinctively like to be male or female, because a crucial—and overwhelmingly obvious—aspect of what it is like to be human is bodiliness. Our consciousness of our own bodies is fundamental to nearly all the rest of our consciousness. (There are "out of body experiences", apparently; but they are exceptional.) The form of our bodies, and our awareness of our bodies from "inside them", is an essential condition of the form of our phenomenology: what it is like to be human is, in key part, what it is like to have a human body. (Notice how this point can help us with Nagel's initial question "What it is like to be a bat?", and also with Nagel's further question how facts about bodies relate to facts about consciousness. Notice too how it can't help us with those two questions.)

But male and female bodies differ, and in distinctive ways. As male and female they are typically differently shaped, e.g. in genitalia, in having or lacking breasts, in distribution of body-fat and body-hair, in size, and in musculature. They are subject to different sensibilities: females feel the cold more, males are less good at coping with sleep-deprivation. They are affected by different hormonal secretions, and on different timescales, and these different hormones have different effects on their moods and their inclinations. Very crudely, females (or most of them within a certain age-range) experience the menstrual cycle, while males (same caveat) experience... testosterone. Male and female bodies even smell different (I gather this is related to the hormonal differences)."

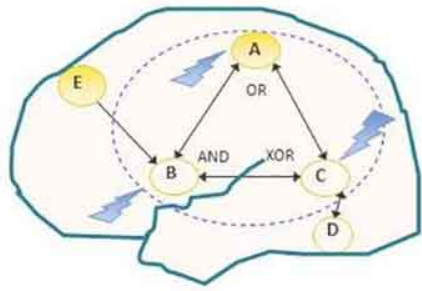
"Male and female consciousnesses differ because male and female bodies differ; but masculine and feminine consciousnesses differ because male and female political roles have differed. So there is something it is distinctively like to be masculine or feminine, because a crucial—and overwhelmingly obvious—aspect of what it is like to be human is political life.

"In sum, then: consciousness is gendered, and obviously gendered, because the political realities of what it is like to be masculine, and what it is like to be feminine, are distinctively different. Moreover, consciousness is sexed too, and obviously sexed, because the physical realities of what it is like to be male, and what it is like to be female, are distinctively different. And that is why the answer to our two questions is not just "Yes", but "Obviously yes.""

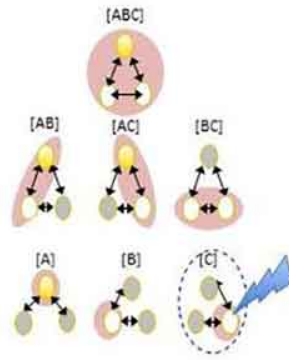
(Sophie Grace Chappell: *Does consciousness have a gender?: Consciousness is not a bloodless abstraction*. 24th January 2022 <https://iai.tv/articles/does-consciousness-have-a-gender-auid-2033>)



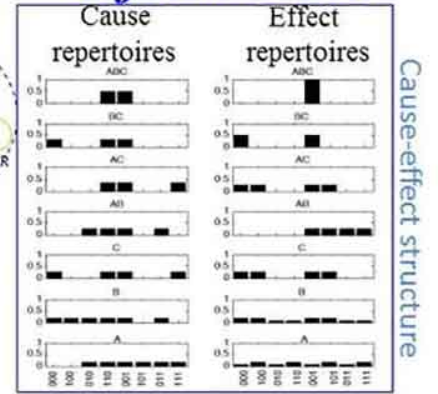
**Intrinsic existence**



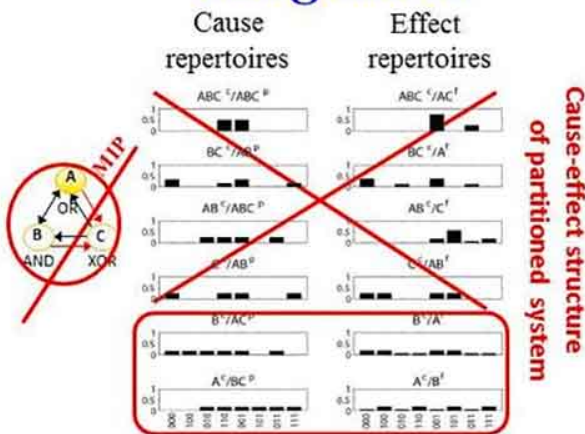
**Composition**



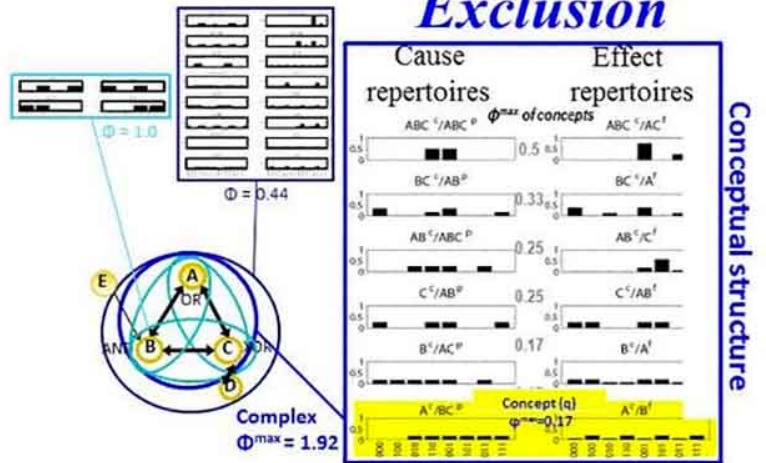
**Information**



**Integration**



**Exclusion**



$$\Phi^{\max}(\mathbf{x}_t) > 0; \text{ for any other } \mathbf{X}_t^* \text{ such that } (\mathbf{X}_t^* \cap \mathbf{X}_t) \neq \emptyset, \Phi(\mathbf{x}_t^*) \leq \Phi^{\max}(\mathbf{x}_t).$$

The latest theories of consciousness include an *Integrated Information Theory* - a mathematical 'formula' or 'equation for consciousness' - (see IIT diagram and equation above) and a *Global Neural Workspace Theory*

"Integrated information theory (IIT) starts from the essential properties of experience and translates them into requirements that any physical system must satisfy to be conscious. It argues that the physical substrate of consciousness (PSC) must constitute a maximum of irreducible, internal cause-effect power of a specific form, and provides a calculus to determine, in principle, both the quality and the quantity of an experience. Applied to the brain, IIT predicts that the spatio-temporal grain of the neural units constituting the PSC, and the relevant neural states, are those that maximize cause-effect power. Moreover, the PSC can shrink, move, split and disintegrate depending on various anatomical and physiological parameters. These predictions are testable with brain stimulation and recording experiments. The theory can explain parsimoniously many known facts about the relationship between consciousness and the brain, including its association with certain cortical structures, its breakdown in deep sleep, anesthesia and seizures, and its return in dreams." (https://onlinelibrary.wiley.com/doi/10.1002/9781119132363.ch17)

I like this theory, and it contextualises the observable responses of those fMRI tests of subjects while being scanned, playing a piano keyboard in a flow of jazz-style musical improvisation - itself a 'flow of consciousness' transcribed by the subject into music.

## **Global Neural Workspace Theory** (see next page).

"Global Workspace Theory (GWT) can be compared to a theater of mind, in which conscious contents resemble a bright spot on the stage of immediate memory, selected by a spotlight of attention under executive guidance. Only the bright spot is conscious; the rest of the theater is dark and unconscious. GWT has been implemented in a number of explicit and testable global workspace models (GWM's). These specific GW models suggest that conscious experiences recruit widely distributed brain functions that are mostly unconscious (unreportable). A large body of new findings support that view. For example, brain experiments show that while unconscious visual stimuli evoke high activity in visual cortex, identical conscious stimuli reveal an additional spread of high brain activity to frontal and parietal lobes (Dehaene, 2001). Similar results have been found for hearing, touch, pain, and sensorimotor skills (Baars, 2002). The conscious waking state supports such fast, flexible, and widespread brain interactions, while unconscious states do not (Baars et al, 2004). These findings illustrate the ability of the GW framework to suggest novel and falsifiable hypotheses." (<https://onlinelibrary.wiley.com/doi/epdf/10.1002/9781119132363.ch16>)

The 'theatre of mind' is also a very attractive idea, reminding me of Brenda Laurel's *Computers as Theatre* (1991) - a book on human-computer interface-design, and game design - both from the perspective of Laurel's own career, designing 'user-experiences' for user's interacting with computers and software - the user can be encouraged to develop a kind of *theory of mind* about how the computer and software 'works':

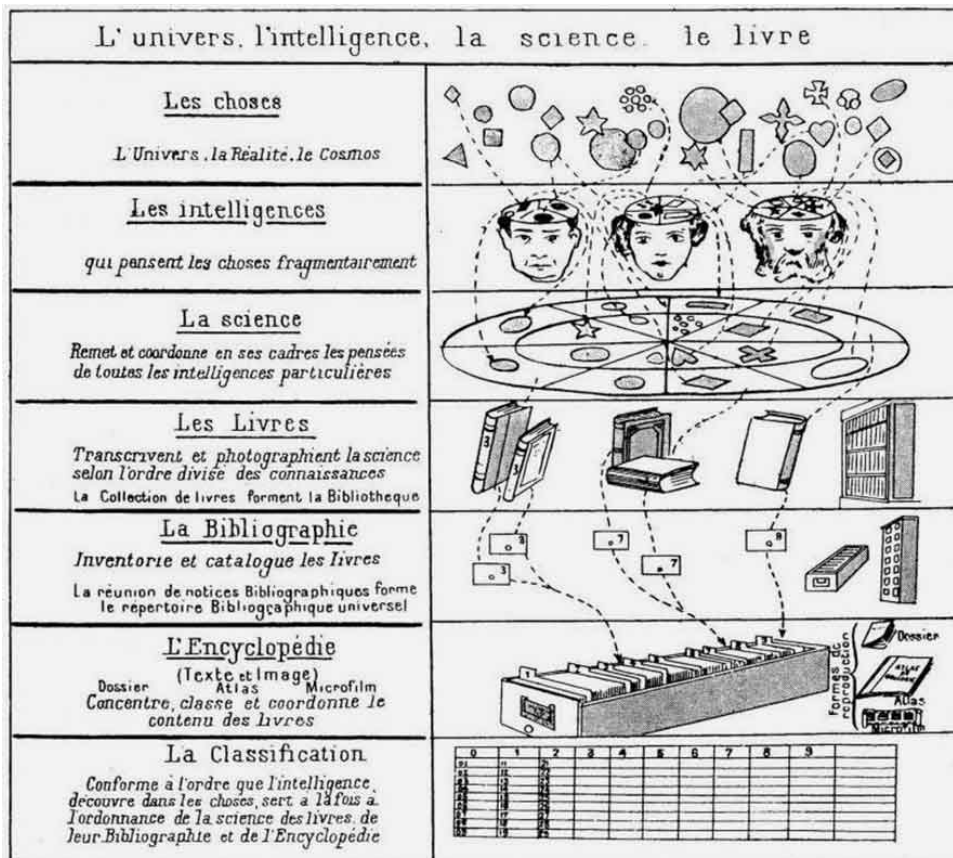
"Although Brenda Laurel has been active in User Experience for decades, her education and perspective are unique in my collection, and her impact on the field of interaction design has been significant. With a PhD in theatre from Ohio State University and experience with stage performance, Laurel has served in faculty positions at a variety of colleges and universities. Plus, she worked at Atari in the early 1980s, as well as for a variety of technology and video-game development firms. Thus, she has a very rich background in video-game design. When one considers the interaction models and incentives for video games in relation to theatre, the connection seems obvious. This gives Laurel's book *Computers as Theatre* its unique perspective." (D. Ben Woods: *Book Review: Computers as Theatre* - <https://www.uxmatters.com/>)





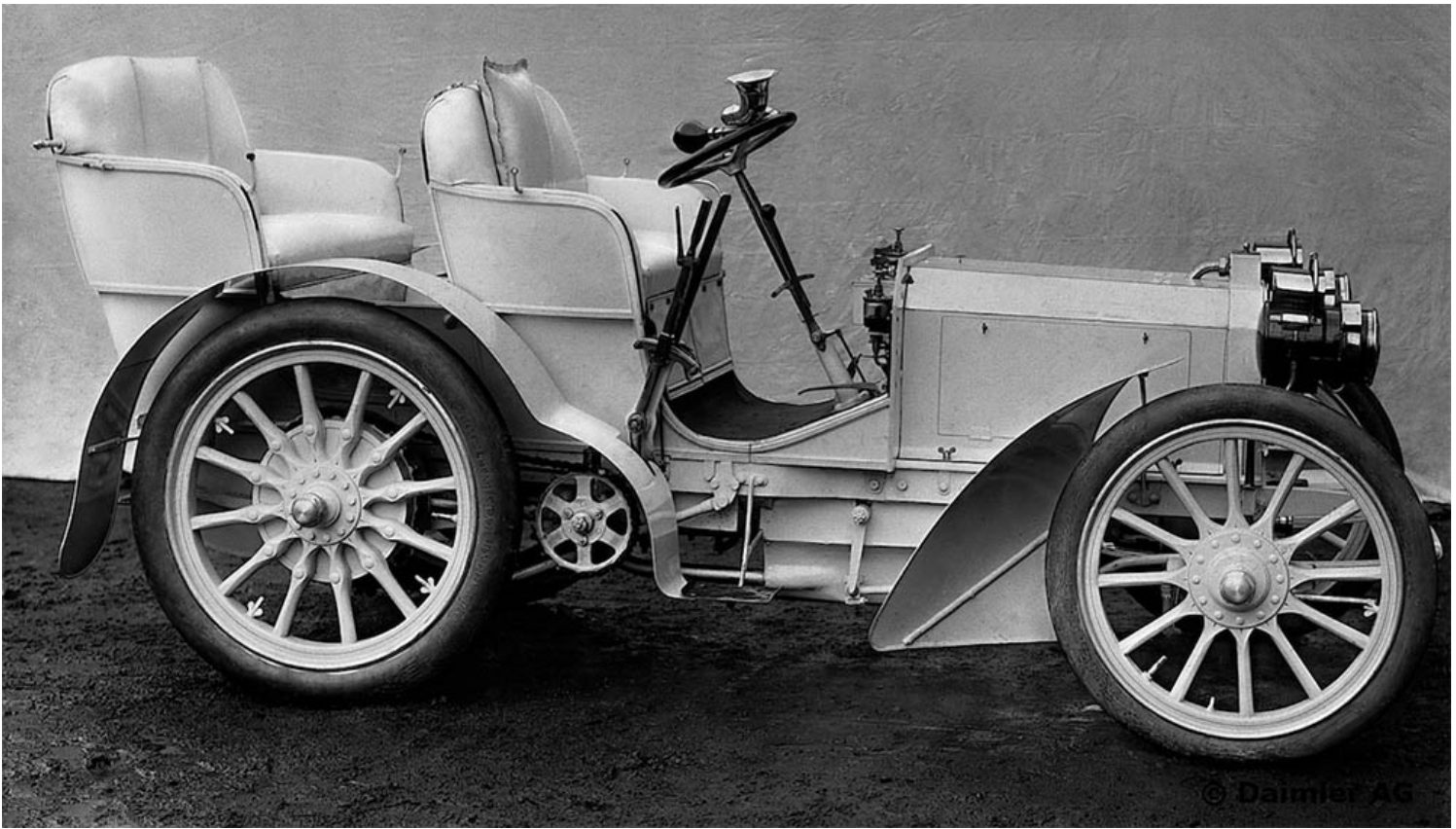
© 2010 GK Films

Georges Melies: *Twenty-thousand Leagues Under the Sea (hand-coloured)* 1907. Melies was the magician-trained creative genius of early film - in 1907 a medium only a decade old. Seeing a film was still a novel experience - the 12-25 frames per second motion, and the experimentation with editing cuts and juxtapositions still miraculously new.



Paul Otlet: *Cataloging schema for his Mundaneum* - an international world library. This was Otlet's lifelong project, refined through the following twenty years and published in 1934. as his *Traite de Documentation* for the *Mundaneum* - two years before H.G. Wells 'World ~Brain'.





Mercedes: *Rennwagen* touring automobile 1907 - Industrial product design - in its infancy in the early 20th century, exploited the advantages of recent innovations like mass production, the emerging universal standards, and design-aesthetics - led by artist-engineers and architects like Walter Gropius, Peter Behrens, and motor-designers like Carl Benz of Mercedes.



Josef Hoffman, Kolomon Moser: *Weiner Werkstätte* logotype 1903. The Vienna Workshop bridged the gap from the Arts and Crafts movement in the UK to the more industry-related Bauhaus. The grounds for 20th century industrial design (it wasn't called this until 1919) were probably laid by the design-theorist and practitioner -innovator Christopher Dresser in the 1850s - and his modernistic metalware - and his influential books pointed the way to well-designed, mass-produced products. The *Werkstätte* established exactly how this might work, and Peter Behrens began to put this into practice from 1906 as head designer for AEG, managing the 'corporate' look and feel of this dominant electrical company's products, architecture and graphic house-style or corporate identity. Modernising the craft-guild-based arts and crafts of the late Victorian age required an understanding of the current industrialisation as well as the ability to project the potential impact of uniform standards, division of labour, production-line assembly, supply-chain management (etc), and it wasn't until Henry Ford produced the first modern assembly-line (from c1913) that all this began to come together. It's interesting from the point-of-view of this essay, that the production-line became the central factor for the stream of mass-production that followed. Much later, in the 1960s, Marshall McLuhan traces the influence of Print - the production of books, with their logical arguments arranged in a sequence of sentences, as authors established their observations in a linear stream made up of uniform type. In *The Gutenberg Galaxy* (1962), McLuhan argues that the media-technology of Print was the forerunner of industrialisation - as well as the catalyst for the scientific method, specialisation, personal perspective - and much, much more...





Marcel Duchamp: *Nude Descending A Staircase No.2* 1912. Borrowing from Etienne Jules Marey, the scientist who developed motion-capture techniques of recording several phases of movement superimposed in a single print, Duchamp imports yet more science and media-technology into his art. Remarking upon the flow of images used by Marey and the Anglo-American photographer Eadweard Muybridge in their motion-studies (over the previous 30 years or so, and borrowing a cubist treatment, Duchamp synthesises the modernist movements of Cubism, Futurism and Cinema and makes an artistic statement that is truly state of the art. It was exhibited at the famous Armory Show in NY in 1914 - introducing Americans to European Modernism.

Duchamp's *Nude-Descending* awakened the cultural world to the impact of the moving image on image-making - in photography and film - the coeval birth of animation and the 'motion picture' roughly coincided with the popularisation of the comic-strip in the 1890s (significantly: Rudolphe Dirks *Katzenjammer Kids* (1894 later titled *The Captain and the Kids*, and drawn by Harold Knerr 1914-1949) The Comics, the animated Cartoons, the Movies (and Movie Serials, like ouis Feuillade's *Fantomas*, *Judex* and *Les Vampires* - from 1913) alike established the importance of representations of the moving image in Modernism. Duchamp's painting of 1912 reinforced this. While the Italian Futurists (Giacomo Balla: *Dynamism of a Dog* 1913), Natalia Goncharova (*The Cyclist* 1913) in Russia confirmed it.

Motion pictures, and expressions of Motion



Giacomo Balla: *Dynamism of a Dog on a Leash* 1912 + Natalia Goncharova: *Landscape with a Train* 1913. The dissection of Movement by Marey and Muybridge provided a mechanism for portraying movement, but its the interpretation of their techniques by artists that brings home to point.





Rudolphe Topffer: *The Story of Monsieur Crepin* (1827) + Rudolph Dirks: *The Katzenjammer Kids* (1897) + Rudolph Dirks: *The Katzenjammer Kids* 1922 + Rudolph Dirks: *The Captain and the Kids* (1963 from 1917).

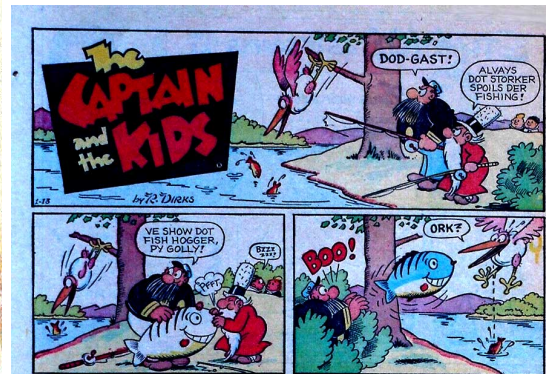
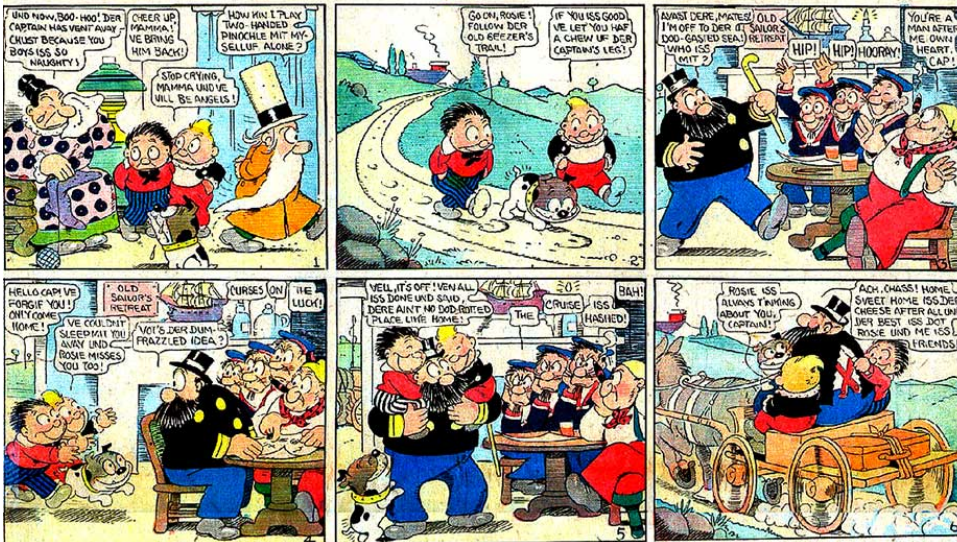
In the period of the invention of the modern comic-strip (illustrated left), the arrival of mass-media comics in newspapers in the 1890s coincided with the other dominant mass media of animation and film, and while Topffer had hand-drawn his 'frames', at first Dirks had implied his frames, it was during the first two-decades of the Twentieth century that geometrically-drawn rectangles became the norm. Perhaps this came to be as an echo of the movie-frame - each frame denoting another scene in the illustrated sequential narrative, just as 'scenes' in movies denoted a number of shots in film narrative. Dirks managed to control his copyright hold on his characters - but had to anglicise the title to do this - for decades *The Captain and the Kids* coexisted alongside the original *The Katzenjammer Kids*.



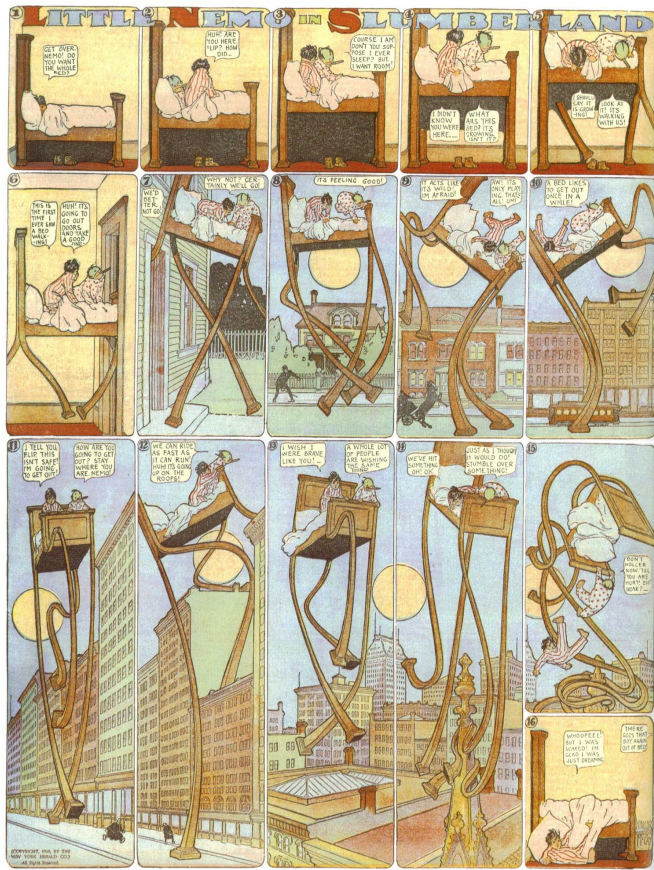
This coeval development of these dominant cultural forms (comic, cartoon, film- all based upon the iterative frame) in the late 19th and early 20th centuries established a format for illustrated narrative that is still dominant right now (in 2023), although many innovators, beginning perhaps with Winsor McCay in his *Little Nemo* strips (1905) adapted the frame to echo the content and the aesthetic, of the stories he was illustrating,



### The Katzenjammer Ki<sup>1</sup>

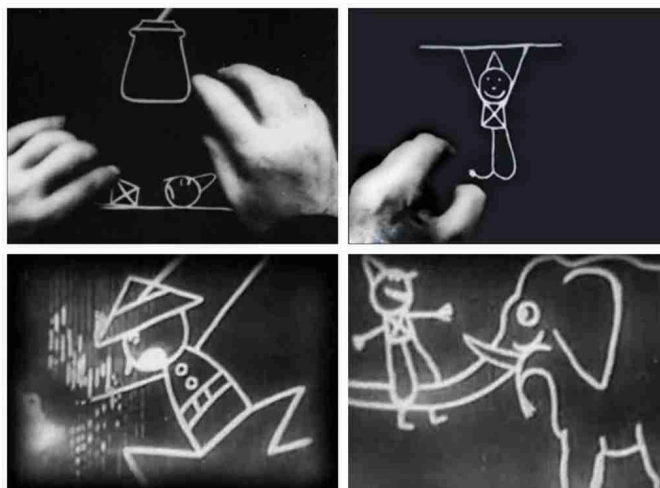






Winsor McCay: *Little Nemo in Slumberland* 26 July 1908

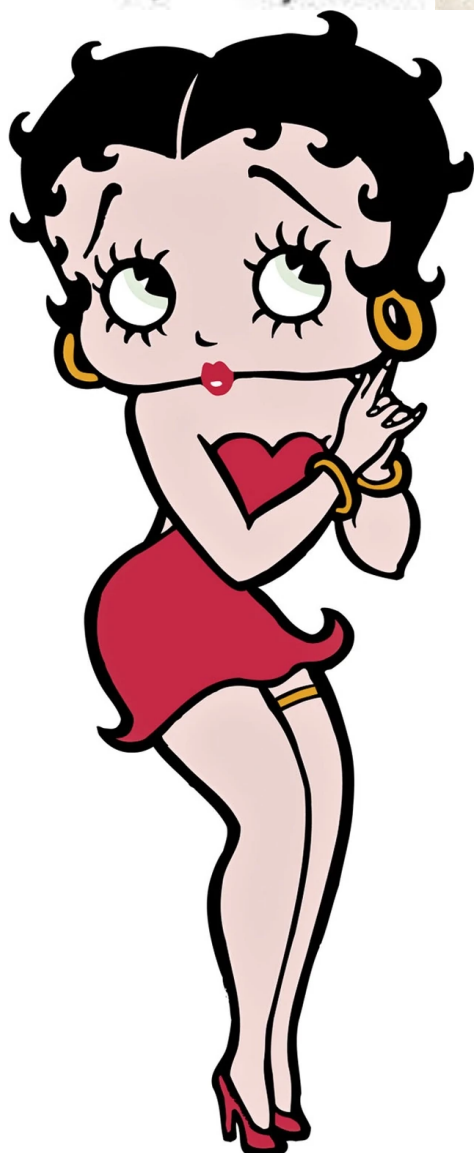
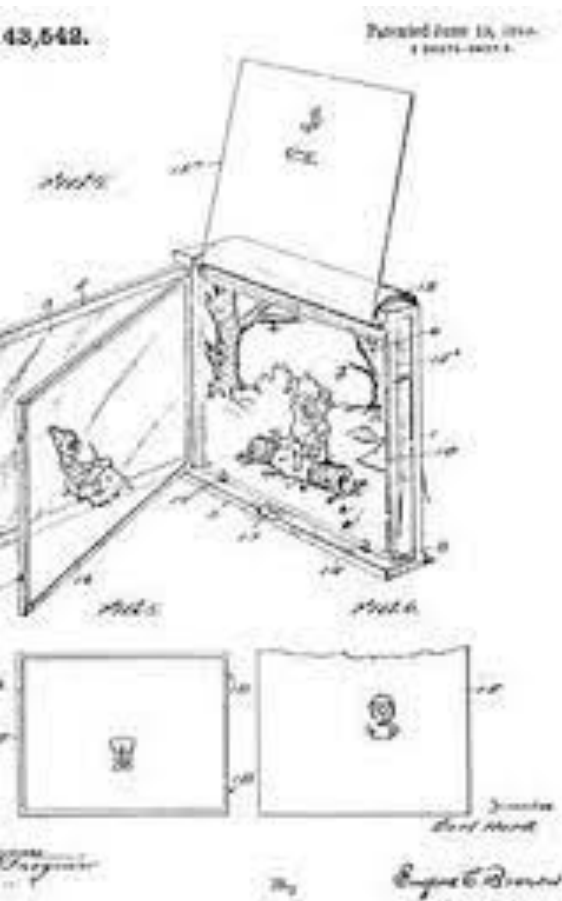
The staccato panelling in McCay's *Little Nemo* is a comic innovation referring directly to 'scenes' in the Movies, and reinforced here by his movie-like mixed perspective cityscapes - the reader's eye-camera is moving, tracking, and panning across the carefully-drawn *art-nouveau* scene. (see Scott Bukatman: *The Poetics of Slumberland* 2012). Although McCay produced an animated version of *Little Nemo* in 1911, Twenty years later Walt Disney and Ub Iwerks used cel-animation and adopted their Mickey Mouse animated cartoon with synchronised sound



(left above) James Stuart Blackton: *Humorous Phases of Funny Faces* 1906 + (right above) Emile Cohl: *Fantasmagoria* 1908

Before Winsor McCay, the earliest animators included the American pioneer James Stuart Blackton and the Frenchman Emile Cohl - produced short comic pieces like those above - often drawing live while the camera is running (so including 'live action' as well as frame-by-frame animation). These simple examples of 'cartooning' were the first motion-pictures that could be made by a single person, and provided a new medium for direct stream-of-consciousness expression. In the 1950s, Georges Clouzot filmed Picasso painting on glass (Clouzot: *Le Mystère Picasso* 1956), revealing something of the artist's psycho-haptoc processes in drawing from the imagination

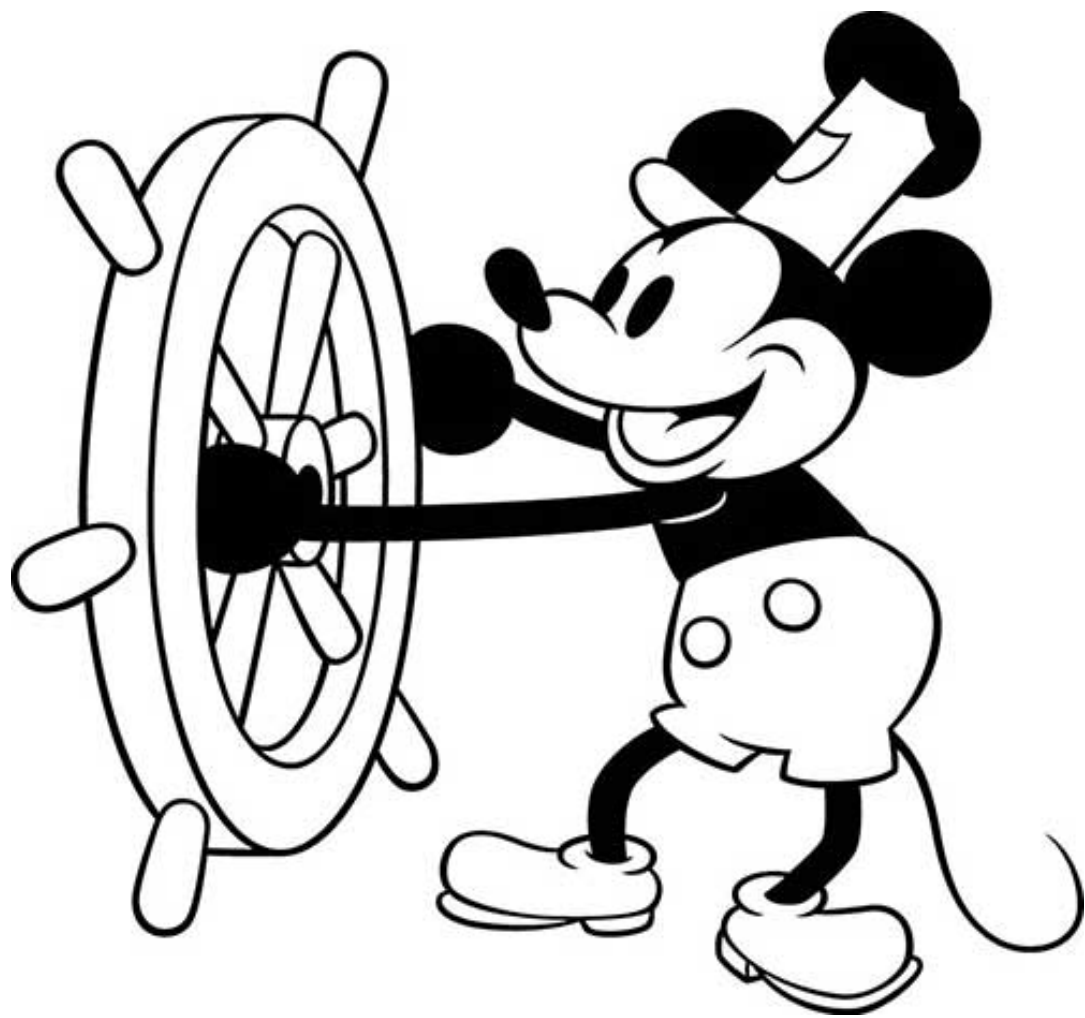




(above) Earl Hurd: *Patent for Cel Animation* 1915 + Earl Hurd: *Bobby Bumps* 1915: The inventor (and patentee) of *cel-animation* (for many decades the most widely used animation technique) was the newspaper cartoonist and inventor Earl Hurd (creator of '*Bobby Bumps*' 1915-1925 - above), who later worked for the Ub Iwerks and Disney Studios. Cel-animation meant typically painting a background on card then attaching a cel-bar - metal strip cel-holder, upon which successive cels could be pin-registered. Then the animator could trace previous drawings and add new movements cel-by-cel. Each cel (placed over a background painting) is then exposed to film, and when projected at rates of 12-25 frames per second. This system allowed for some 'production-lines' to be created, with the principle animator providing the master frames, and junior animators or 'in-betweeners' drawing in the interim frames, and background painters providing the scenic backgrounds - often as long strip paintings to be independently moved frame by frame. This kind of 'industrial production' emerged out of the hand-coloured filmstrips of the 1900s and became the norm in the 1930s at studios like Disney and Fleischer (Max Fleischer Studios: *Betty Boop* (left - from 1930)

In their heyday cel animated shorts, and later Disney's full-length feature-length films (like *Snow White* and *Fantasia*) became near perfect marriages of art and the technology of cel-animation and production-line manufacture





(top) Ub Iwerks + Walt Disney: *Micky Mouse* from *Steamboat Willie* (1928) (below) Lottie Reiniger: frame from *Prince Achmed* full-length feature animation 1926. Note the simplified 'hands' in these first drawings of Micky Mouse, and the elaborate, detailed cut-outs in Rieniger's animated film - the first full-length animated feature.





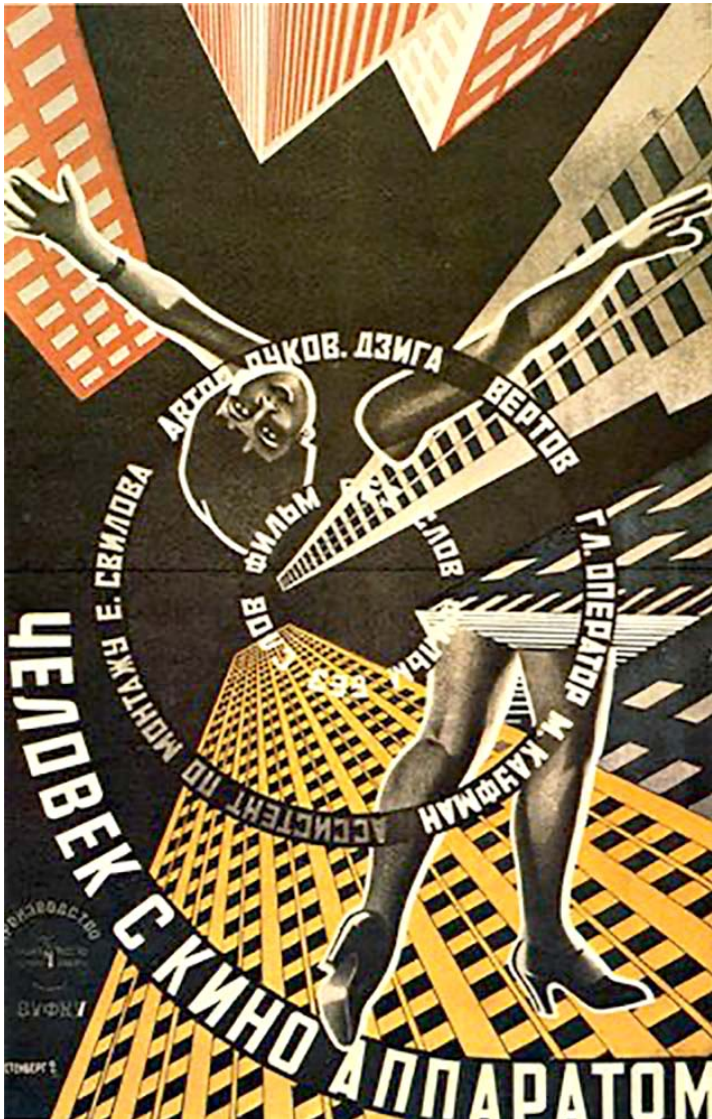
Mass Marketing took several newish forms in the 1920s, direct mail leafleting, mail-order catalogues, point-of-sale posters, billboard hoardings, electric and neon signs, wall paintings, skyscraper hoardings, newspaper and magazine advertising, radio-jingles, film-interval commercials, agit-prop trains in the USSR and much more. The suburban landscape, and the townscape especially, become vehicles for colourful commercial hoardings, in roadside hoardings, urban billboards, animated lighting displays in light-bulbs and neon (think of New York's Times Square and London's Piccadilly Circus. Advertising and Marketing became an art-science during this period, with important publications on advertising and propaganda - and the growth of specialist connurbations in Madison Avenue, London's Soho and West End. These new Townscapes became the subject-matter of new art: (below: Fernand Leger: *La Ville* 1919 + Stuart Davis: *American-Painting* 1932)







Fernand Leger: graphic pages to illustrate Blaise Cendrars: *La Fin du Monde* 1919. The freedom presented by photo-lithography and its variants (like *Photocrom*, from 1880), which enabled a much greater graphic latitude of technique compared with Letterpress. encouraged artists to experiment with form, colour and 'display' (large-size) typefaces and freeform, hand-drawn letterforms.



Vladimir and Georgii Stenberg: poster for Dziga Vertov: *Man with A Movie Camera* 1929.

Of course this was a *leitmotif* (signature) movie, camerawork, editing and contextual montage by Gerald Kauffman (who liked to be known as 'Spinning Top', in Russian Dziga Vertov) who attempted to realise 'kino-pravda' or cine-truth in this radically different documentary shot in several Russian cities in the late 1920s. In this dynamic poster, the Stenbergs have taken stills from the film, vignettted them, and intercut them into the modern cityscapes of the 1920s, arranged the display titles in an engaging and inviting spiral, as if drawing the audience into the poster/movie experience...

Note that this radical experimentation in graphic design strangely stemmed from Russia and Europe in the 1920s-1930s, not from the entrepreneurial United States... why was this? Actually, Philip Megg's *History of Graphic Design* seems to skip the USA in the 1920s, while Americans were inventing Hollywood, and the new mass-marketing, point-of-sale direct-mail and stock-broking techniques to make capitalism work for every citizen.



Another iteration of the modernist stream emerged in the USA in the 1890s-1920s: the evolution and semi-formalisation of Jazz (that 'fusion of otherness' - of influences from a wide variety of sources), showcasing solo and group improvisation the free-interpretation and extrapolation or embellishment of a tune) probably (according to Bruce Ellis Benson: *The Fundamental Heteronomy of Jazz* 2006) emerging in the fusion of Creole, and Black and White folk music in the late 19th century. These improvisations are akin to tapping into a stream of consciousness, though the collaborative nature of improv is still somewhat of a mystery - except for jazz players of course. The wonderful fusion of tune and improvisation notable in the early jazz of Louis Armstrong, Bix Beiderbeke and many other players somehow results in a magical completeness - a sharing and cooperation or participation in innovation. Are jazz musicians tapping into a universal or collective unconscious - sharing the 'soul' of jazz?

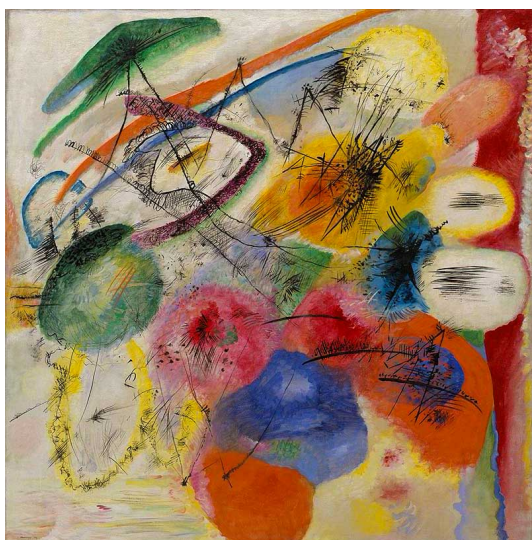
“The collective unconscious is a part of the psyche which can be negatively distinguished from the personal unconscious by the fact that it does not, like the latter, owe its existence to personal experience and consequently is not a personal acquisition. While the personal unconscious is made up essentially of contents which have at one time been conscious but which have disappeared from consciousness through having been forgotten or repressed, the contents of the collective unconscious have never been in consciousness, and therefore have never been individually acquired, but owe their existence exclusively to heredity. Whereas the personal unconscious consists for the most part of complexes, the content of the collective unconscious is made up essentially of archetypes.” (Jung CW 9.1, p88 1936)

“My thesis then is as follows: in addition to our immediate consciousness, which is of a thoroughly personal nature and which we believe to be the only empirical psyche (even if we tack on the personal unconscious as an appendix), there exists a second psychic system of a collective, universal, and impersonal nature which is identical in all individuals. The collective unconscious does not develop individually but is inherited. It consists of pre-existent forms, the archetypes, which can only become conscious secondarily and give definite form to certain psychic contents.”

— C. G. Jung [*The Collected Works of C. G. Jung*, vol. 9, part 1, p. 43]

Kandinsky was one of the synaesthetic artists who envied the free flow of abstraction in music, and attempted his visual equivalent in abstract painting:

"An artist who sees that the imitation of natural appearances, no matter how artistic, is not for him – the kind of creative artist who wants to, and has to, express his own inner world – sees with envy how naturally and easily such goals can be attained in music, the least material of the arts today." (Kandinsky *On the Spiritual in Art* 1912)

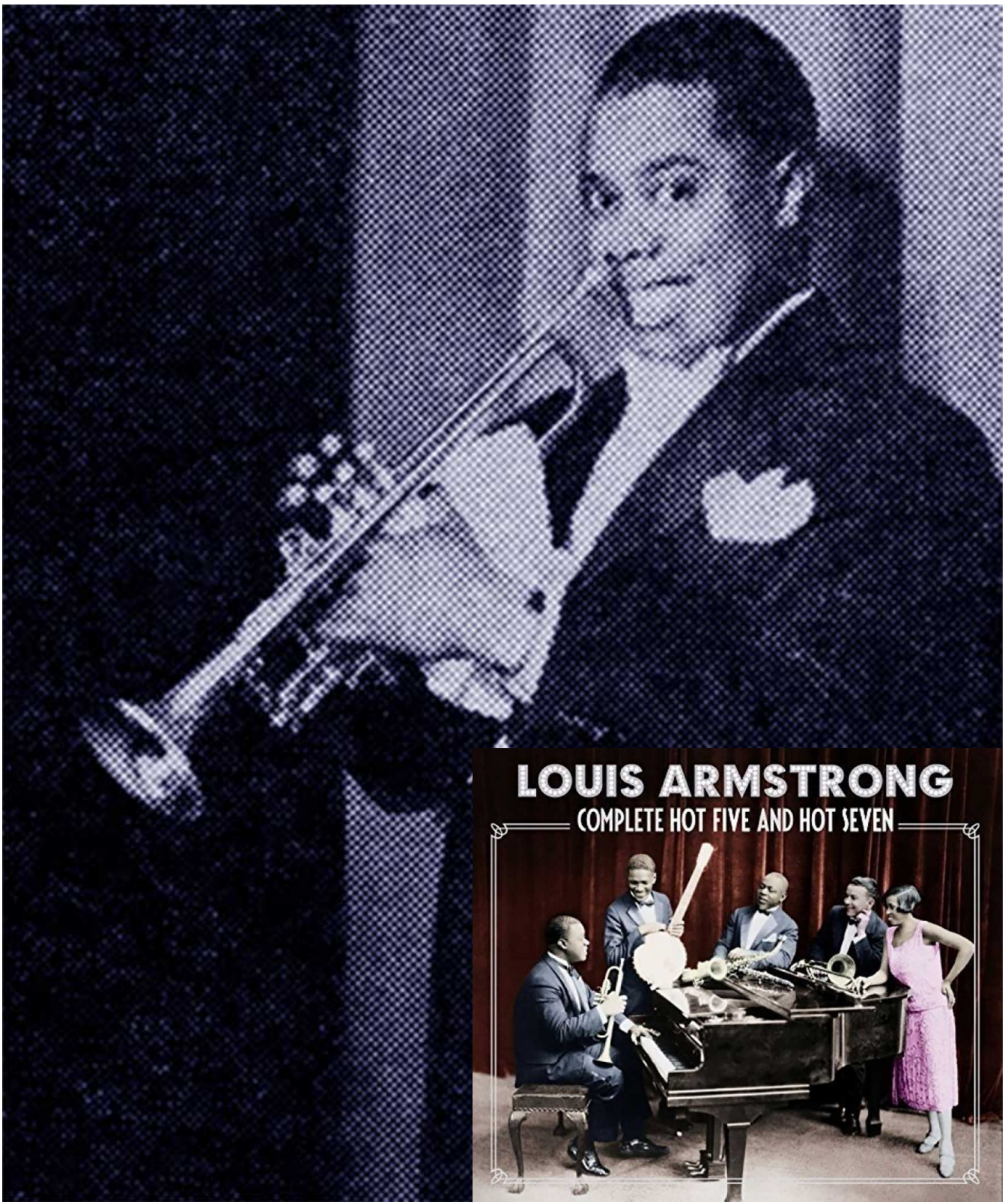


Kandinsky: *Black Lines* 1913.

I guess Kandinsky's synaesthesia (experiencing colours when listening to music) and his leaning towards abstraction would have freed him from any logical or aesthetic reasoning, and perhaps allowed him a direct access to the pre-conscious well of the deep mind. Here he is attempting to transcribe the abstract fluidity of music into an abstract harmony of colour and shape in fine art

But music has its own fluidity, especially in the Jazz that emerged in the USA in New Orleans and a mix of other cities in the late teens of the new century. The mix of races and ethnicities in such cities as New York, St Louis, and Chicago - and the mix of Creole, black, marching-bands and blues, and white folk and country (as well as commercial popular music) - from records, radio and cafes and Juke-joints all fermented into the jazz idiom....





**Louis Armstrong: *Hot Five* 1925: jazz improvisation**

Louis Armstrong's major contributions to Jazz were his vocalese innovations (scat singing) and his related free-form instrumental improvisations - extrapolating on the core melodies - an innovation that inspired a generation of Bebop musicians like Coleman Hawkins, Charlie Parker, Miles Davis and Dizzy Gillespie and extended into modern jazz (or BeBop) in the 1940s and beyond...

This was the decade when the industrial Revolution really got going in the hot-bed of mechanised production-lines, electrification, time and motion data, and 'Fordism' linking-up the whole chain of specialised parts-production, manufacturing, marketing, selling and service - and integrating this with monopoly capitalism, kick-starting modern consumer-capitalism in the 20th century (see passages in John Dos Passos: *USA* trilogy (1936); Scott Fitzgerald: *This Side of Paradise* (1920); Edith Wharton: *The Age of Innocence* (1920); and, to put it into the wider economic perspective - Eric Hobsbawm: *War and Peace in the 20th Century* (2001). So the flow of Creativity matched the flow of Industry and Economics as the West bought into the Modernist Stream - from production line to chorus line, supply-chain to mail-order, *l'Art Decorative* to *Streamline Moderne*... (see Siegfried Giedion: *Mechanisation Takes Command* 1948)

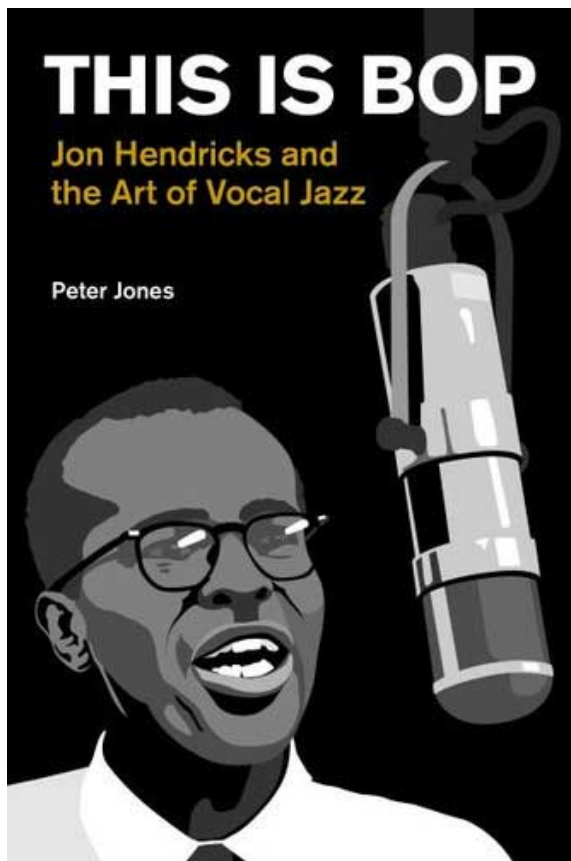
Louis Armstrong's major contributions to Jazz were his scat singing and vocalese innovations (scat using voice-sounds, vocalese using real words, or hipster slang) and his related free-form instrumental improvisations - extrapolating on the core melodies - an adaptation by Armstrong that later inspired a generation of Bebop musicians like Coleman Hawkins, Charlie Parker, Miles Davis and Dizzy Gillespie and extended into modern jazz in the 1940s and beyond...

Jazz improvisation is realtime, on-the-spot, precise to the beat innovation, guided by and conditioned by various jazz conventions. For the listener - the jazz fan - improvisation provides apparently free-form extrapolations on the essential melody of the piece being played. Gilles Deleuze ascribed improv to the **'the synthesis of time through memory that creates something new for the subject who is remembering'**. And John Szwed has described jazz improv : **"Even if improvisation is also found outside of jazz, it may be that no other music relies so much on the art of "composing in the moment", demanding that every musician rise to a certain level of creativity that may put the performer in touch with his or her unconscious as well as conscious states"** (Szwed: *Jazz 101: A Complete Guide to Learning and Loving Jazz*. 2000).

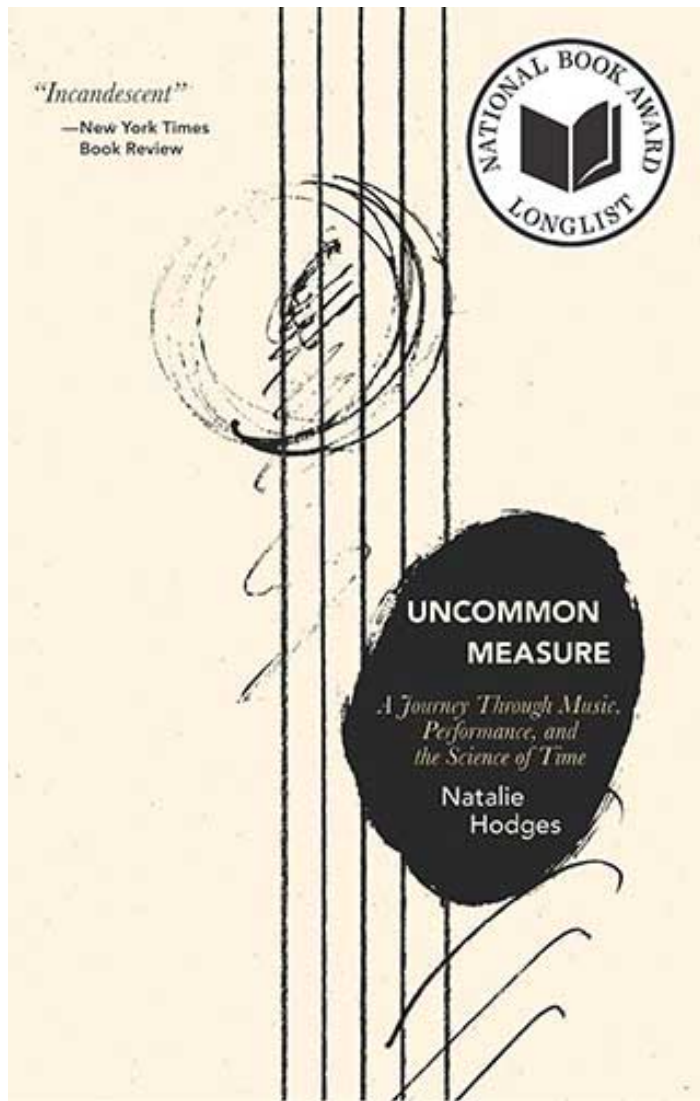
Improv was substantially perfected by Louis Armstrong in the 1920s, inspiring trad jazz innovators like Bix Beiderbecke, modern jazz pioneers like Miles Davis, Dizzy Gillespie and Charlie Parker, and then filtering through Blues to Rock'n'Roll. Vocalese and Scat was perfected by Ella Fitzgerald I think, and with Annie Ross in her coolly brilliant work with Lambert, Hendricks, and Ross, but around the same time (late 1950s) Ella Fitzgerald recorded her famous scat version of *Blue Skies* (1958). But Harry the Hipster Gibson, Leo Watson, Slim Gaillard and Cab Calloway regularly used both vocalese and scat. (*Minnie the Moocher*, from 1931, *Hi-De-Ho* from 1934 (<https://www.youtube.com/watch?v=spBLdH5mtyk>) and *The Lady with the Fan*). I remember Slim Gaillard - sometime resident singer/pianist at the Chelsea Arts Club scattin a boozy night away... Later, the often realtime vocal improvisation invented by Hip Hop artists and labelled *Rap* continued this tradition, marked by Keef Cowboy, Eminem, Grandmaster Flash, Kanye West and others in the 1970s and beyond. The instantaneity of Rap - thinking, rhyming, rapping in vocalese, sometimes mixed with beat-boxing, scratching and shuffling (quoting from) records or other lyrics still strikes me as a remarkable vocal innovation - some art precedents might include Dadaist experiments like Kurt Schwitters' *Ursonate*, or the 'phoneme' and opto-phonetic sound poetry of Raoul Haussman.



"*This is Bop* is the first biography to be written about Jon Hendricks. Based on extensive research both in the USA and the UK, it draws on the author's interviews with the Hendricks family and the many singers, musicians and industry figures who worked closely with Jon. As well as telling the story of his remarkable life, the book also explores Hendricks's legacy as a lyricist and a scat singer, his contribution to the art of vocalese, and his extraordinary gifts as a thinker and raconteur. If any man could be defined as the epitome of the modern jazz singer, it would surely be Jon Hendricks. His contributions to jazz as a whole were colossal: a hipster, a bopster, a comic and raconteur, a wordsmith par excellence, and a fearless improviser who took the arts of scatting and vocalese to new heights. As a founder member of the groundbreaking vocal trio Lambert, Hendricks and Ross, he changed forever the public perception of what a jazz singer could be. Jon Hendricks started singing professionally at the age of seven. Within five years he was supporting his entire family – including three sisters, eleven brothers and a niece with his earnings from radio appearances. He was active in jazz long before the birth of bebop, and didn't stop until he was in his nineties. Taught by the pioneering bebop pianist Art Tatum, Hendricks performed with everyone of any consequence in jazz, from Louis Armstrong to Charlie Parker. Before Lambert, Hendricks and Ross astonished the world with their album *Sing A Song Of Basie*, he was writing songs for Louis Jordan. Later he wrote for stage, screen and the press, and influenced and worked with Manhattan Transfer, Bobby McFerrin and Kurt Elling. Not content with writing lyrics for jazz instrumentals, he turned his hand later in life to classical works by Rimsky-Korsakov and Rachmaninoff. When Jon Hendricks died in 2017, he left behind a final masterwork his fully-lyricized adaptation of the Miles Davis album *Miles Ahead*." (Amazon Synopsis of Peter Jones: *This is Bop* 2020)



Peter Jones: *This is Bop* 2020 (see summary notes above) + Annie Ross, photographed in 1972. Ten years earlier Jon Hendricks and Annie Ross together with Dave Lambert formed the vocal group *Lambert, Hendricks and Ross* and brought their adventurous avant-garde vocalese and scat-singing to ultra-hip night-clubs like Peter Cook's *The Establishment*. These hipsters bridged the avant-garde of cool jazz, the hipster fringe of the underground with the wit and savvy of broadly intellectual wits and raconteurs, familiar with the kind of sophisticated audiences and other performers at the *Establishment* of the calibre of Christopher Logue, Lenny Bruce, Tony Kinsey, Eleanor Bron, John Bird, Dudley Moore, John Fortune, Jean Hart, Jeremy Geidt, Frankie Howerd, George and Diana Melly - and of course Peter Cook himself, then also busy establishing *Private Eye* in the offices above the club. I met Jeremy Geidt around 2005 - he was the brother of our next-door neighbour in Freshwater Bay, the theatrical agent Verrall Dunlop and got a glimpse of something of his early Sixties charisma and wicked humour...then he was professor of drama at Harvard.



### Natalie Hodges *Uncommon Measure* 2022

"In improvisation, the generation of material is spontaneous, but it's never random. This in itself constitutes a paradox: If you can choose to play anything, with equal probability, what could make you choose any one thing — on the spur of the moment, blindly, trusting, without thinking about it — except chance? In other words, how can the spontaneous be anything but random; how can music made in a jolt of instinct, on a bolt out of the now, be endowed with a form that makes sense in time, as though it had been written and rewritten and practiced and memorized beforehand? And how, in making that first, most instinctive, most desperate decision, do we choose — if it really can be called "choosing," if we really choose at all?"

"For all this perplexity, there is something incredibly liberating in improvisation — a sort of "unselfing," to borrow Iris Murdoch's perennially lovely term; something that provides, as Hodges puts it, "the feeling of easy self-suspension that in the best moments can accompany deep focus, the way that when you have to throw yourself into a task it becomes almost a way to abandon the self, almost a relief to leave the self behind."

She takes these questions to a Radcliffe lecture titled "What Choice Do I Have?" by the virtuosic Venezuelan pianist Gabriela Montero, who has stunned millions with her astonishing improvisations on musical prompts given to her by the audience. Out of a tiny seed handed by a stranger, a striking original composition comes abloom in real time, with no premeditation and no practice — a skill so natural to Montero yet so seemingly otherworldly that her brain became the subject of an fMRI study, the findings of which affirm physicist and jazz saxophonist Stephon Alexander's insistence that "it is less about music being scientific and more about the universe being musical."

(Maria Popova: *Improvisation and the Quantum of Consciousness* in *The Marginalian* [www.themarginalisn.org](http://www.themarginalisn.org))



### Gabriela Montero: *Baroque* 2006

A remarkable pianist, Montero is really exceptional as an improviser - she regularly gives recitals where she asks members of her audience to suggest tunes for her to improvise too - and she immediately produces the most sublimely perfect 10-20 minutes 'stream of improv' that seems to tap directly into her talents as a musician, her high-level skills as a pianist, and even higher-level skills as an improviser - as if she was subconsciously aware of all the mathematical and compositional permutations and expressions in a piece that would make sense musically when played in sequence as she performs. She seems to suspend 'logic' and even thought itself, and is immediately in a state where she is in direct contact with the skill-memory of her talent - as if her stream of consciousness had been suspended and her talent allowed free range. (see next page)...



Gabriela Montero a study in improv.

"To discern the neural correlates of improvisation, scientists observed Montero's brain under three conditions: playing scales, the most prescriptive of all musical structures; playing a memorized Bach piece; and improvising from an initial Bach prompt." they discovered...

The 'neural correlates' are the parts of the brain that seem to react to actions by the subject. And it is the interconnectivity between different nodes of the brain, including the *medial pre-frontal cortex* (concerned with decision-making, self-perception, and autobiographical memory; the *hippocampus*, which forms new memories, and centres for perception and spatial cognition, and centres for thoughts about others, and their relationship to the self.- in the first two exercises, Montero's brain lit up in all these areas. What was strange however, that when improvising, the activity in all these areas was suddenly and substantially dimmed "...If the regions of the DMN, working together, represent a unified sense of self, upon which Montero draws when she is playing music she has learned in the past, the act of improvisation somehow disbands that cohesion, requires her to draw on something else."

What happens here is another mystery of consciousness, for example, you might think that freeform improvisations might trigger responses of a wider range and depth than when you are recalling a tune from memory, or that you know from many rehearsals? So why is the opposite happening?

Hodges suggests that the act of improv 'somehow disbands that cohesion (of the Default Node Network), requiring Montero to draw on something else. "a momentary fracturing of the self, a temporary dissolving of its margins consistent with Montero's assertion that she "gets out of the way" when she improvises, that she loses herself in the present, that she turns on the tap and lets the music flow."

"[The Default Mode Network is] a sprawling system of functional connectivity between regions of the brain that, loosely put, modulates the many facets of the self. These include, to name a few, the *medial prefrontal cortex*, which controls decision-making, self-perception, and autobiographical memory; the *hippocampus*, which forms new memories; the *angular gyrus*, a center of perception and spatial cognition, a sense of oneself in the physical world; and the *dorsal medial prefrontal cortex*, responsible for thoughts about others and their relation to the self. During the scale and memory trials, these areas of Montero's brain lit up with interconnectivity, as though her senses of time and space and memory were all talking to one another, working together to re-create these tasks that, together, they had been preprogrammed to execute. But each time the researchers asked Montero to switch to improvisation, the light of that interconnectivity was suddenly, substantially dimmed. (In more technical terms, the interactions between those various regions were significantly and quantifiably reduced.) If the regions of the DMN, working together, represent a unified sense of self, upon which Montero draws when she is playing music she has learned in the past, the act of improvisation somehow disbands that cohesion, requires her to draw on something else.

(Maria Popova: *Improvisation and the Quantum of Consciousness* in *The Marginalian* [www.themarginalisn.org](http://www.themarginalisn.org))

"What shines through these fractures in the conscious self is a different sort of memory — not the conscious kind for which the DMN is ordinarily responsible, tasked with recalling the past and anticipating the future, but a mental process that is both unconscious and conscious of itself, self-referential for the duration of the improvisation, a kind of time-out-of-time that, on the miniature timescale of the improvisational period, seems to remember the future: The researchers found that while Montero was improvising on the piano, her musical stream of consciousness remained "structured and cohesive," referencing patterns and building on motifs that had poured out of her unconscious mind earlier in the timeline of the improvisation — patterns and motifs laid down in anticipation of their future reference."

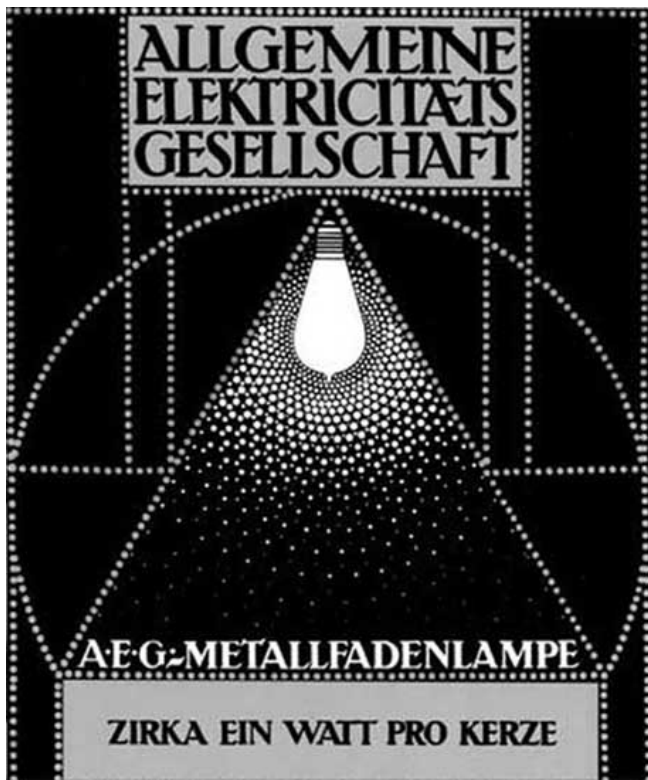
"The researchers called it "a form of embodied creativity," revealing the unconscious dialogue between the body and the mind whispered beneath the conscious mind's narrative about what is happening, what has happened, and what will happen." (Popova: op cit)

Perhaps this dialogue between consciousness and the 'stream of relevant unconsciousness' is what determines our creativity in writing, in painting, and in collage and in montage-creation as well as music?

"Montero's, then, is a transcendent kind of muscle memory — not one to which her musicality is bound, but, rather, which she bends to her whim and will, memory that opens up an infinity of possibilities in the present... Improvisation, then, can be seen as an uncanny manifestation of deep memory itself: the creation of order out of disorder, a deep up-pouring from some dormant part of the soul; a confirmation that "the mind knows things it does not know it knows."

By analogy in the visual arts, the stream of consciousness that occurs in this consciousness-suspension, occurs in the artist's mind when selecting this piece or that, in the context of the emerging visual form they are creating. There is something that plays to a sense of aesthetic balance - in colour and shape, and there is something that plays to the intellect in the meaning of the words or part-words selected and placed within the collage.

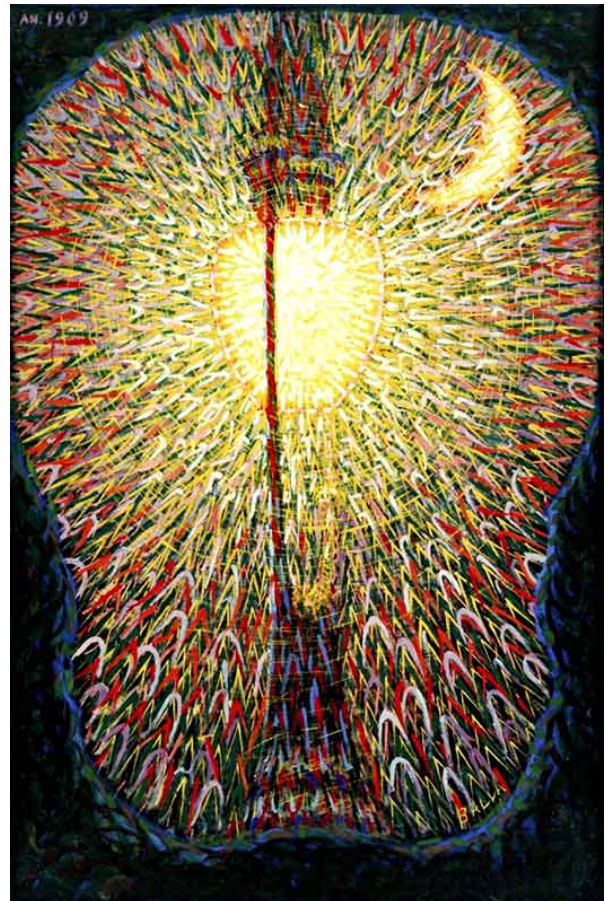




The establishment and evolution of AEG—the initials for the German Allgemeine Elektrizitäts-Gesellschaft, or General Electric Company—was quintessentially linked to the rise of modernism. Founded in Berlin in 1883, AEG pioneered modern, large-scale industrial development. In 1887, having purchased several patents from Thomas Edison, the firm began producing electric light bulbs. Just over a decade later, AEG was not only one of the fastest growing companies in Germany, but a world-leader in the production of generators, cables, transformers, motors, light bulbs, and arc lamps.

**Peter Behrens: AEG 'corporate identity' poster 1901**

AEG was the principle German Electrical company - generating and delivering electric power all over Germany, and manufacturing light-bulbs, fans, heating, fans and all kinds of electric products from 1883. Such a diversity of output required more than just a 'house style' to identify its various products and services, and Behrens an artist-cum architect-cum-graphic designer working at the famous Darmstadt artist's colony - and head of the school of arts and crafts at Dusseldorf alongside design-philosopher Hermann Muthesius - the evangelist of British Arts and Crafts in Germany - and one of the major influences on German Industrial Design in this early Modernist period. Behrens invents a new style of branding - a 'corporate identity' to link all the AEG industrial products and services, marketing and advertising. Behrens designed the first Turbine House for AEG in 1907 - and re-designed their industrial arc-lamps . In 1910 he designed this poster, symbolising the light bulb and light itself (now established - by Planck and Einstein) to be both a wave and a particle (a wavicle - and pictured here as such). Behrens rigorously implemented branding became what in the later 20th century we call 'corporate identity' - the first such branding exercise for a major corporation.



(above) Vincent van Gogh *The Sower* 1888 + (left) Giacomo Balla: *Street Light* 1909. Vincent spent a real lot of time outdoors (he walked through Europe and in England - and painted outdoors too) and was fascinated with Light. The Futurist Balla also tries to 'picture' light - but this time electric light - the modernist power-source. How similar Behrens, van Gogh and Balla's visualisations are...



Also, the new media : Motion Pictures, Wireless Telegraphy and Sound Recording - and 20-30 years later the Radio and Television, carried the stream (of Reith's 'information, entertainment, education'(1922) everywhere, though it wasn't until the *Goons* in the early 1950s that we discovered a team that could really exploit the fantasy of *Talk Radio* to its optimum. (Though the overwhelming (and unexpected) success of BBC radio-drama in the twenties and thirties - under E.E. Jeffrey and Val Gielgud indicated that radio drama somehow tallied with stream of consciousness for the radio listener,- a cognitively magnetic experience providing the listener with an experience akin to their own thought-stream) In the 1920s the coeval mix of Radio broadcasting, Juke Joints (in the USA) and Jazz and Louis Armstrong, and the Industrial boom in the USA created by mechanisation, production lines, the Motor Car, and accelerated by Time & Motion studies and Production-lines, created the stream of information, entertainment and consumer goods production, mapped in literature by writers like Dos Passos, Scott Fitzgerald, Gertrude Stein, Langston Hughes, Ernest Hemingway and Edith Wharton - And Dos Passos, James Joyce and Virginia Woolf (these especially) using stream of consciousness techniques. So the *Stream* permeated the early 20th century. Jack Kerouac's literary style in his *On The Road* (1951-1958) and *The Subterraneans* (1959) was described by the 'beBop fan Allan Ginsberg as 'Bop Prosody'... citing his scotch-taped 120-foot scroll of typed manuscript (so Kerouac could write in his Benzedrine-fuelled uninterrupted flow the entire typescript of *On The Road* in 1951.... finally published in 1958.

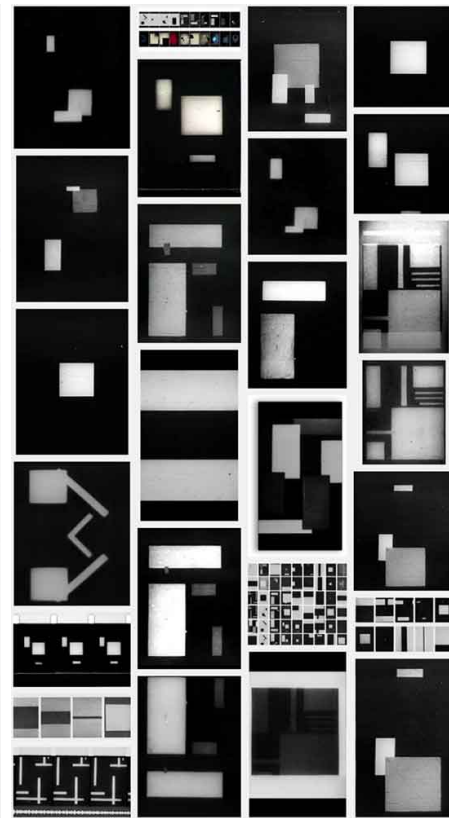
This stream of creativity - Kerouac not wanting to interrupt the flow by stopping to insert another quarto sheet into the typewriter - also reminds me of the more or less coeval practice developed by Jackson Pollock of drip-painting (later (in 1952) called 'abstract expressionism' by Harold Rosenberg) this was literally a flow of paint guided - both consciously and sensually unconsciously by Pollock - inspired by the 'chance' methods beloved by the Surrealists.



(left: Natalia Goncharova: *Cyclist* 1913  
 (bottom:) Boccioni: *Electricity* 1912  
 Two riders speeding through the whirl and swirl of the twentieth century: crowding cities, speeding bicycles, horse-drawn carriages and motor-cars and the light and energy of electricity - signalled by pylons, overhead wires, light-bulbs and instant switches. This helter-skelter demanded new techniques, new art, new representations. The Futurists responded with the abstracted whirligig of the gracefully fragmented horse-rider in a city-streets in *Electricity* (below), and the Cubo-Futurists in Russia with Goncharova's *Frenetic Rayonist Cyclist* (left) hurtling through the advertising hoardings of the new century cityscape.  
 The new century was embodied by blurring Speed and the Flow of energy, transport, crowds of people. Speed-blur and the jumbled juxtaposition of glimpsed fragments of scenery, skeletal towers of electricity, the smoke of generators, the bubbling energy







(upper left) Breton, Lamda, Tinguely: *Cadavre Exquis (Exquisite Corpse)* 1938 (centre above) Alexander Rodchenko: *untitled (Pro Eto 1923)*. (left) Hans Richter: stills from his film *Rhythmus* (1921) exploring staccato rhythm in 'pure' abstract film.

The *Collage* became a dominant form of Modernism, flowering in Dada and in Russian Constructivism, and used playfully by the Surrealists in Max Ernst's collage books, and their *Exquisite Corpse* experiments at collaborative image-making. Rodchenko and the poet Mayakovsky used collage to illustrate their collaborative work celebrating Mayakovsky's lover, Ilya (Lily) Bric (whose portrait and eyes dominate the image (above centre)). The correlated development of filmic montage and graphic collage or photomontage leapt forward with Lev Kuleshov's discovery of the importance of contextual editing that's become known as the *Kuleshov Effect* (1918, left) which offered a more cognitively interactive and dialectic role to the film's viewer. At the same time Vsevolod Pudovkin - a director and one of Kuleshov's main collaborators, believed that the editing, the organization and placement of shots, was a means of expression that was unique to filmmaking. These experiments and theories were adopted by Sergei Eisenstein in his *Battleship Potemkin* (1925) and used by Dziga Vertov in his film *Man With a Movie Camera* (1929). This flow of images, informed by Gestalt Psychology - an approach originating in the work of psychologist Max Wertheimer (*The Phi Phenomenon* 1912). The flow of images in Film, Video and Animation (and later CGI, digital movies, computer games and VR/AR) has dominated the 20th century and our 21st century so far.

So, from the humble juxtaposition of spatially inter-related graphic images in the early years of last century to the frenetic layering and splintering of recent work like *Everything Everywhere All at Once* (The Daniels 2022) and more generally our current 24/7 news and entertainment coverage, and the frenetic cybernetic tidal-flow of social media..

In Art and Media, the *Stream* was apparent in early Surrealist experiments linking words and images in games like *Exquisite Corpse*, *Consequences*, or like Max Ernst in his Surrealist graphic books (*Une Semaine de Bonté* etc). But even earlier (late 'teens) artists associated with the Dadaists, Hannah Hoch and John Heartfield, and expressionist artists like George Grosz and Otto Dix were developing a visual-spatial photo-montage that depended upon the combined factors of an abundance of available imagery (from the mass of newspapers, magazines, catalogs, and other printed ephemera published in the previous 30-40 years), serendipity of course, the facility of scalpel, scissors and paper-glues - and the artist's ability to channel a stream of ideas and images into coherent graphic montage. Some of the power of photo-montage stemmed from the appropriation of contemporary news, and current advertising, early brands and their linked marketing promotions and advertising and its subsequent subversion into Dada messaging and labelling or titling (especially in Hoch's *Cut with the Kitchen Knife Through the Last Weimar Beer-Belly Cultural Epoch in Germany* 1919) - the linked imagery expressing Hoch's creatively critical stream of energy.

This photomontage approach was also adopted by the Russian communist artists in their efforts to find an acceptable, non-bourgeois visual language to address the largely illiterate rural population outside St Petersburg, Moscow and the other big cities. Out of this effort came the wonderful graphics of Agit/Prop and State Utilities Advertising engineered by Mayakovsky, Klucsis, Rodchenko, the Vesnin's, El Lissitzky (etc) and the Agit/Prop trains of Medvedkin, Dziga Vertov, and others. In Russia/USSR, film theory had advanced beyond Munsterberg to embrace Kuleshev's theory of audience interaction generated by the context in which sequences are edited together. Sergei Eisenstein and Vsevolod Pudovkin (a student of Kuleshev) separately created theories of montage - theories of creating a visual story-stream that have been adopted world-wide.



The dance-hall was another cultural artefact of the first decades of Modernism - a product of gas and electric lighting, the expansion of cities, regularised work-hours, outdoor cafes and dance-halls, metropolitan public transport, new and more democratic fashion outlets (both new, home-made and second-hand), growth of accessible make-up and perfumes, loudspeakers and public-address systems (etc etc). The music-hall and the *café de la danse* and *thé dansant* were immersive events conjoining and celebrating all these various innovations in the ecology of Modernism.

And Gino Severini, in his painting dedicated to the *Bal Tabarin* (1912 below), literally joins us in this immersive scene - a celebration of the dance at the Bal Tabarin cabaret club in Paris, not in the nostalgically romantic style of Renoir's Impressionism, but in the contemporary cubist multi-view synaesthetic hinted at already by Picasso and Braque. Surrounded by whirling dancers, the artist, attending the cabaret in the year the bar opened, captures his stream of impressions of the whirl, swirl and gyrations of modern dance 20th century style. It is a flowing multiplicity of sense impressions of dancing girls, monocled men, flash of sequins, glimpses of décolletage, stockings and garters, national flags, letterforms, masques, lipsticks...the constant intermingled flow of sensory impressions frozen in time like a Marey multi-negative overprint.



**“Severini was fascinated by the dancehall as a subject for the opportunity it offered for the depiction of multisensory experience. Here he pictures a woman with brown curls and a white, blue, and pink flounced dress as she dances to music in the Paris nightclub *Bal Tabarin*. Different elements of the work point to current events—the Arab riding a camel refers to the Turco-Italian War of 1911, and flags convey sentiments of nationalism. In his depiction of Bal Tabarin the artist merges the Futurists’ interest in capturing the dynamism of motion with the integration of text and collage elements, such as sequins, influenced by his study of French Cubism. Severini was a fervent Italian nationalist, but he insisted that his fellow Futurists come to Paris, as he had, to learn about the latest developments in modern art.” (MOMA)**



Pope and Singer comment on the dearth of serious examination of the *Stream of Consciousness* in 1978: “How disappointing, then, to search so much of the psychological literature and find reflected there so little of our day-to-day human experience. How surprising - at least to anyone but a psychologist - that textbooks on thinking (Bourne, Ekstrand, and Duminoowski, 1971, Johnson, 1955) can ignore or say little about the stream of consciousness and imagination, that books on personality (Mischel, 1971) or on adolescence (Seldman, 1960) can remain so silent about imagination and fantasy.” (Kenneth S. Pope and Jerome Singer: *The Stream of Consciousness* 1978).

It is this definition, (the idea that we could ‘record’ the constant stream of thoughts, ideas, emotions, feelings, observations and objections happening inside our heads - and turn it into art) made in 1890, that poets, writers and informed artists in the early 20th century leveraged to drive ‘Modernism’ - with the making of art that combined personal experience (Munch’s *Scream*), the impact of mechanisation and the machine on man, practical art-making and an inclination to create an expression of the elusive zeitgeist - that essence of contemporary spirit that epitomised the new century - the desire for radical change - an expression of the new glimpses of massive Industrialisation, Electrification, and fundamental Science: Max Planck’s theory of *quanta* behaviour in atoms (1900), Einstein’s package of papers that included *Special Relativity* (1905), together with an appreciation of the impact of science (*colour theory* 1850-1860) on *Impressionism* (1872) and *Pointillism* (1885) and *colour photography* (c1903), and their realisation of the fabulous range of new technologies emerging in the last decade or so - the Telephone, Electricity, Movies, Animation, the mass-media of illustrated newspapers and magazines, picture postcards, sound recording, typewriters, many of them implying the same ‘flow’ pattern of consciousness itself - the flow of words in literature, and images in animation and film, the spatial flow of image-making in collage - and later in montage (contextual editing) of motion-pictures. And more recently in the creation of digital 3d movies - the manipulation of virtual models in virtual 3d space, and the simulation and recording - of single humans, groups and crowds; or the creation of 3d projection-mapping, apparently manipulating and altering the visual aspects of existing buildings and monuments.

Perhaps all creative experience is the result of our eliciting harmonious ‘flow’ in our stream of consciousness?

“How does the feeling of this book in your hands, the perception of these words, the thoughts they provoke - this whole, private inner world that you are experiencing right now - arise in a universe that is made of molecules? What is this thing we call consciousness?” (Rita Carter: *Consciousness* 2002 Introduction)

“While James Joyce, Virginia Woolf, and T.S. Eliot (1950) in his 1919 discussion of the ‘objective correlative’ were seeking ways to convey the stream of consciousness in words, film-makers like Sergei Eisenstein (1942) discovered moving pictures to be especially well-suited to the flow of experience. Eisenstein developed the ‘montage’ and the ‘partial representation’ to evoke from the viewer the same flow of consciousness occurring in the mind of the artist or one of the film’s characters. This effort among artists extends into modern works of poetry, fiction, and the visual arts, and - happily - provides us with a touchstone for our own experience with grace, perceptiveness, and humor.”(Pope and Singer 1978a)”

Eliot’s ‘objective correlative’ covers the range of ways he (as a writer) uses to describe and evoke the emotional state of a character he is describing. In the quote from Singer and Popes important book on *The Stream of Consciousness* (above), they are pointing to the artist’s ability to identify the visible, tangible, and sensorial signs (correlatives) of a character’s inner thought-stream. The British novelist David Lodge examines this pointer to the success of the modern novelist in contrast to the failure of the scientific approach to identify the physical (neurophysiological) location of the qualia of emotion and other aspects of the stream of being. (Lodge: *Consciousness and the Novel* 2004)

## Impact of Modernism on the Arts

And I can expand this to include the plasticity and freeform development of animation (from Muybridge 1878; Emil Cohl 1904) to cel-animation (Earl Hurd 1914) during this same period (1880-1930), the abandonment of 'realistic' colour in painting - *Fauvism* (Matisse 1905; *Rayonism* 1911), and *Expressionism* (Munch 1895 - Kirchner 1910), the radio broadcast (Fessenden 1900) and audio-recording of music and drama (from Edison 1887), the refinement of the modern comic strip (McCay: *Little Nemo in Slumberland* 1905), the invention of 'modern dance' (Duncan 1903), modern theatre (Craig 1905), the *Mutoscope* flip-book arcade machine (Dickson and Casler 1895), blurring the illusion of movement into a seamless experience and providing an interactive user-experience; Ernst Haeckel's exploration of the seamless flow of ecosystems in our ecology (1904), Lumiere's *Autochrome* colour-photography (1905), Bayard's *Nu Esthetique* (1904), the great Cezanne exhibition of 1904, Braque and Picasso *Cubism* (from 1908) - and no doubt many other examples you can think of. This avalanche of new media/art and technology alongside the 'everyday' stuff of electricity, steam, omnibuses, the motor car, the Metro, the department store, all the giant simulations of the Paris 1900 *Exposition Universelle* (Grimoin Sanson, Lumieres, d'Alesi et al 1900), all the new painting in Paris, all the important scientific discoveries (X-Rays, Relativity, Quanta, Electromagnetics, etc must have made the new century really seem quite apocalyptic and totally transformational - quite open to new ways of thinking - science-fiction comes into it's own in this latter nineteenth century (Jules Verne, H.G. Wells, Edgar Allen Poe, Robert Louis Stevenson, Samuel Butler, Albert Robida etc)...

In graphic terms, this period saw the art-development of collage, photo-montage, film-montage, and agit-prop graphics, as well as the first 'scientific', methodological and sociological investigations of advertising and propaganda (from Le Bon 1895), Pictorialism - the painterly extension of photography (from Robinson and Rejlander 1850s), and the new technique devised by Hill and Adamson in 1836 - using photo-portraits, collage and then painting the result.



David Octavius Hill and Robert Adamson: *The First General Assembly of the Free Church of Scotland signing the Act of Separation and Deed of Demission 1843*.





David Octavius Hill and Robert Adamson: *The First General Assembly of the Free Church of Scotland signing the Act of Separation and Deed of Demission 1843* (detail)

This remarkable hybrid of portrait photography, composition and collage, and painting, David Octavius Hill's oil painting from Adamson's collage of individual portraits, while it seems to work *en masse* (and from a distance), reveals its quirky, eccentric (and highly innovative) assemblage in detail - showing the disparate framing, perspective-scaling, printing and enlargement techniques used to compile this famous group portrait. Almost everyone is not looking at the camera, or if they are, it is not the same camera as everyone else. In this painting, Hill & Adamson extend the palette of the artist/photographer, and foreshadow the hybrid pictorialist photo collage techniques later explored by Oscar Rejlander and Henry Peach Robinson.

Thirty-odd years later, the Canadian photographer/artist William Notman extended the technique by painting directly on to the many portrait photographs he had assembled. (see next page): there's no doubt that this technique accelerated the daunting task of group portraiture, while inventing a rich hybrid of photography and oil-painting - and further speeding-up Hill and Adamson's novel technique.





William Notman's hybrid photo/painting (*Skating Carnival*) of 1870 (above top: the black and white photograph, below the painting - here the paint was applied *on the surface* of the collaged portrait photographs).



While Rejlander, Peach Robinson, Hill & Adamson and Notman all conducted very interesting experiments in the marriage of photography and oil-painting - some of them pointing foreword to the potential of pictorialism in the new 20th century - but there were also some more semi-professional of amateur approaches that exploited the rich abundance of photographic portraits by mid-century. Exemplified perhaps by the collage/watercolour creations of Princess Alexandra:

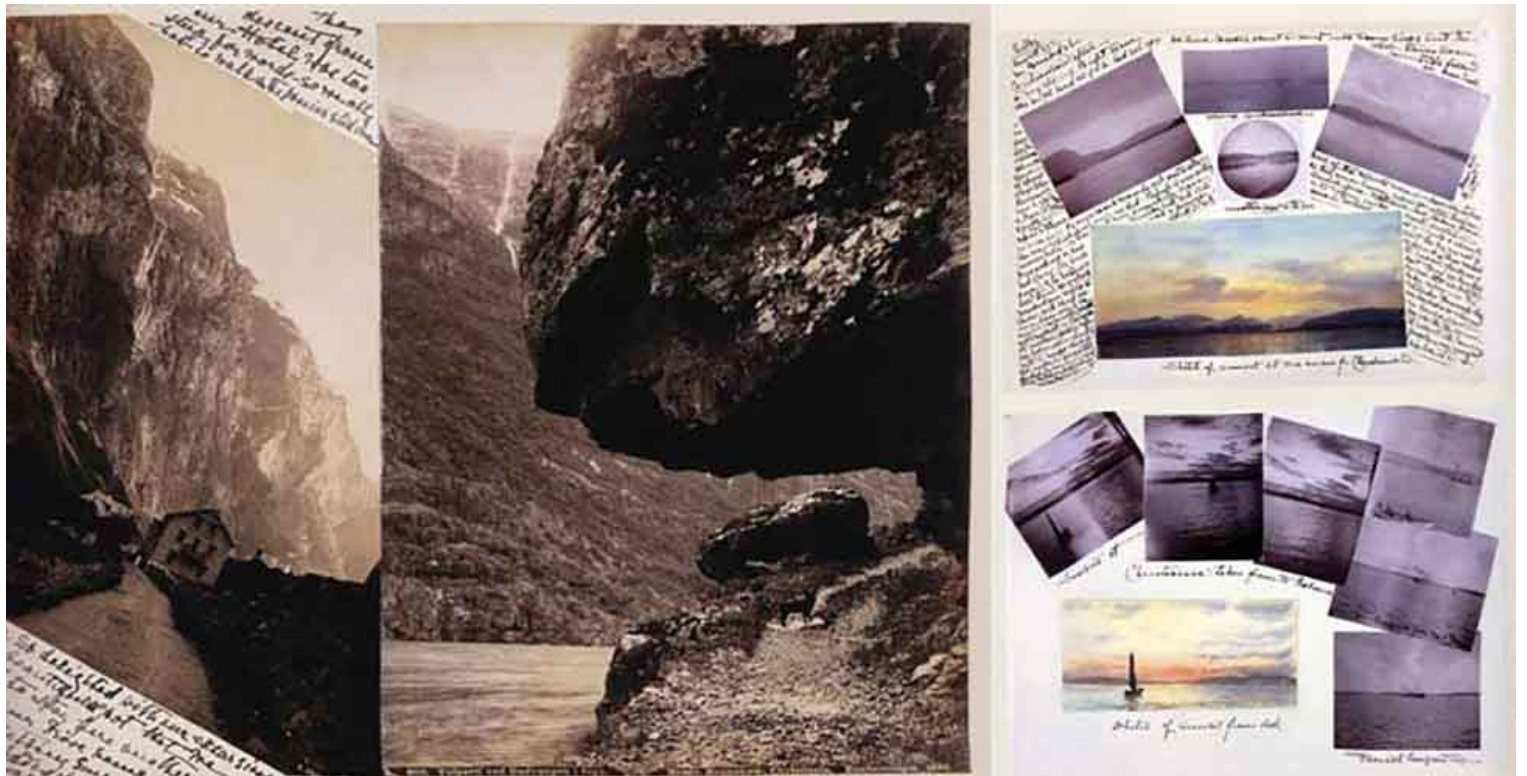


Princess Alexandra: Design with Flowers 1865

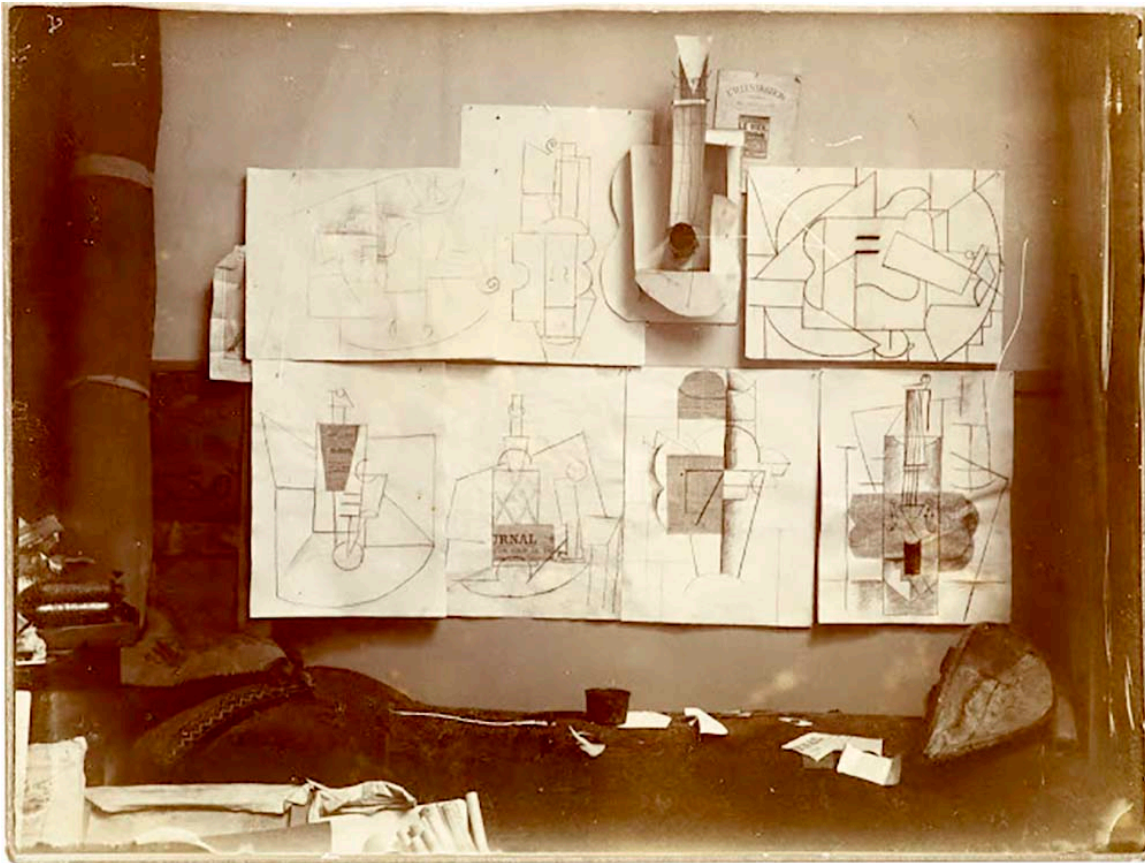


Princess Alexandra: unfinished Album Page 1867

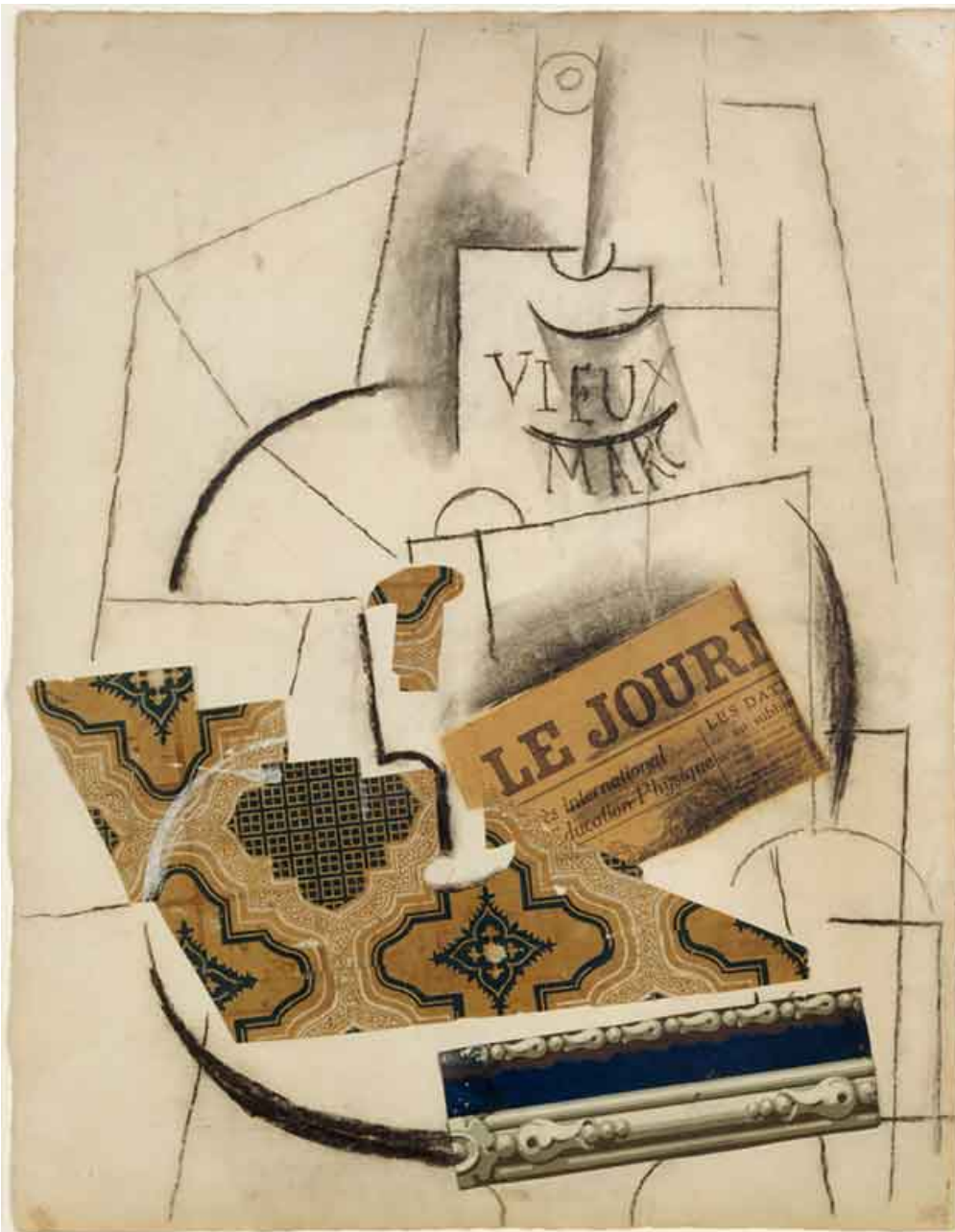
The Danish Princess benefitted from her wealth and education in developing a taste - and an eye- for the new art of photography. She combined this with an inquisitive brain (though she was hampered in conversation by slight hearing loss) and a talent for watercolour painting (see Frances Dimond: *Developing the Picture: Queen Alexandra and the Art of Photography* 2004; + *Queen Alexandra's Christmas Gift Book* 2016). Her talents stretched out to graphic-design with the commemorative albums she designed and made in the 1890s. (Below: Alexandra: Page from Norwegian Cruise Album 1893)





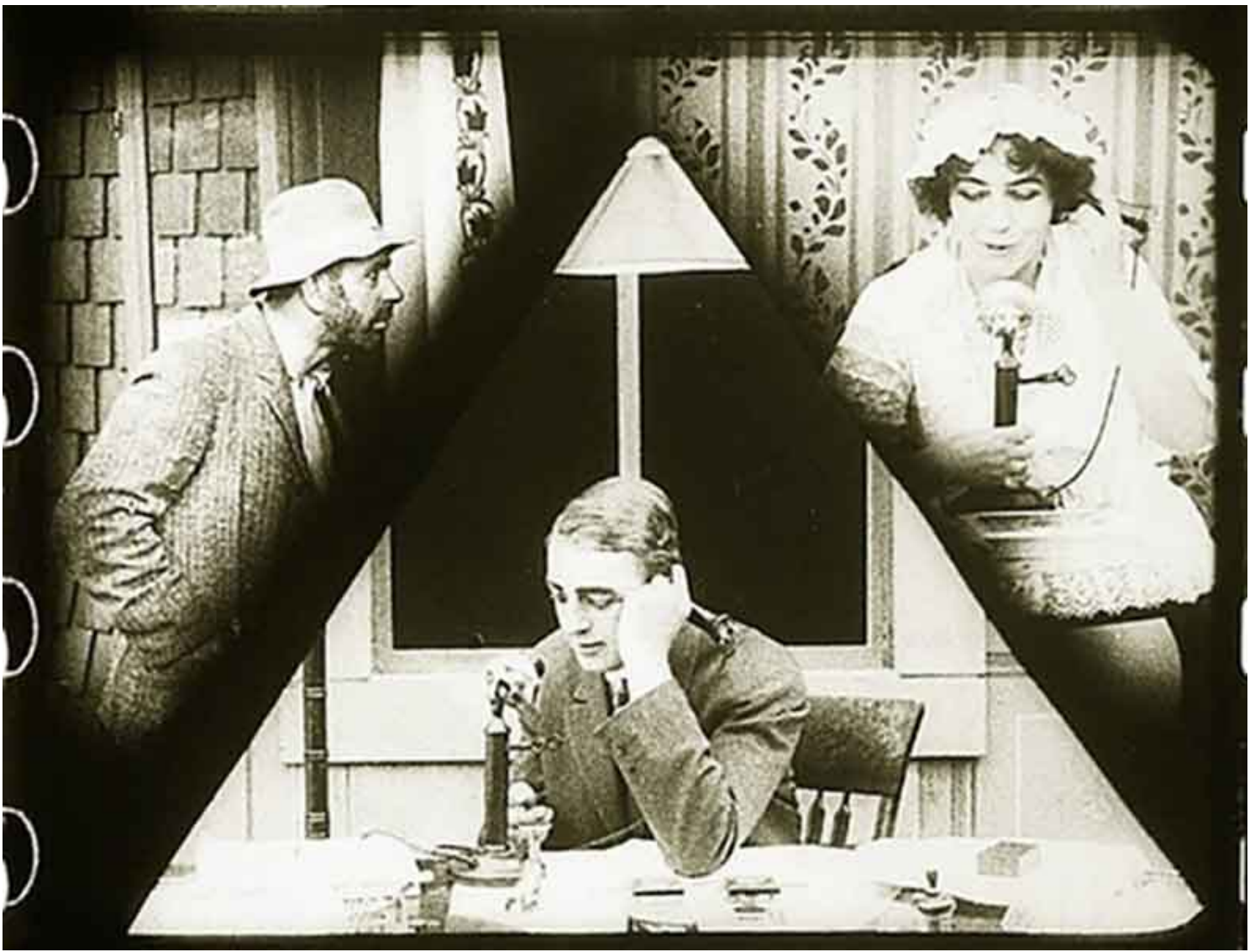


**Picasso: *Studio paper-collés* 1912.** The freeform yet meticulous exploration of the potential of drawing and college materials took place in both Braque and Picasso's separate studios in a frenetic period during their invention of 'paper collés' in 1912 - in both two-dimensions and three. As John Berger points out, this was the only period in Picasso's career when his work looked like someone else's. (Berger: *The Success and Failure of Picasso* 1965)



**Picasso: *The Bottle of Vieux Marc* 1913.** (Cut-and-pasted printed wallpapers, newspaper, charcoal, gouache, and pins on laid paper: <https://www.metmuseum.org/perspectives/articles/2022/11/feminine-masculine-cubist-collage>) The lovely brandy - the title of one of Picasso's most successful charcoal + collage, where the newspaper and wallpaper materials form intrinsic components of the drawing. The detritus of the real world (the rubbish in his studio) are validated by their inclusion in the art-work. The flow of ideas includes potentially everything within reach of the artist in the magic stream of consciousness in the creative act of spatially compiling a collage in real-time. And the variety of perspectives suggested by the collage elements reinforced the Cubist attempt at emphasising the *relativity* of perspective...





Lois Weber + Phillips Smalley: *Suspense* multi-frame film 1913. the film-polymath and innovator Weber uses black mattes to present simultaneous action in a single frame (in her short film *Suspense*. Weber's career - as moral feminist, pioneering film-maker and as star-maker - is marked by technical innovation alongside her director husband - their use of simple triangular matting to relate the parallel action of the three main protagonists breaks new ground - using multi-frame (later called multi-screen) to spatially integrate the main interconnected strands of the 10-minute short film. Thus the 'parallel action' of collage, reflecting the multi-perspective of Relativity - with its Cubist experiments, and the spatial impact of multiply-juxtaposed imagery in Collage, reflects the early twentieth century cultural zeitgeist both graphically and emotionally - the revolution of women's suffrage, the pull of the new emancipated womanhood, and the psychological 'protection' of Victorian values + plus the new technology of moving pictures and special-optical effects...

I can't find an authoritative account of the multi-frame techniques deployed by Weber and Smalley in *Suspense* (above), but one way of doing this is: to film using the triangular 'mattes' or masks (these are used to expose one area of the film emulsion, while blocking off (matting or masking) the rest of the film, on a second pass through the camera, a new area can be exposed while blocking off the previous exposure and masking the third - then on a 3rd pass.expose the last sequence. Note how in the central (bottom) sequence, the hanging lamp-shade echoes and keys the matte to the whole frame...So with three passes through the camera - and rewinds, the selectively masked film can be made to carry three scenes, creating Weber's parallel sequences (the prowling tramp (left), the agitated young wife (right) and the worried husband (centre), as an 'in-camera' effect..



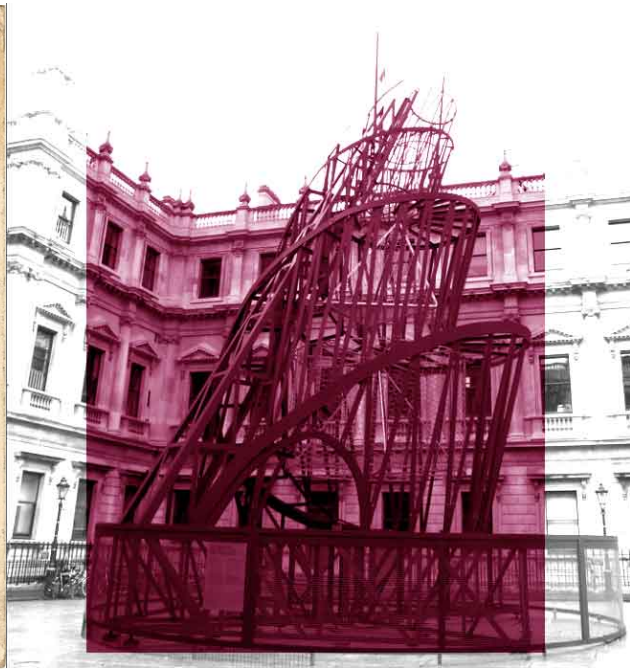
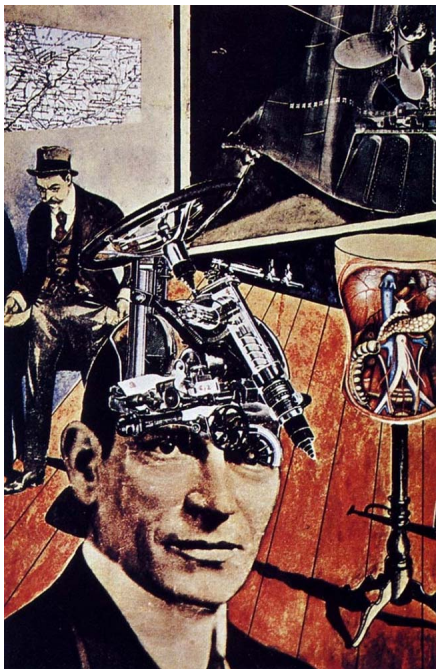
Multi-frame printing like Lois Weber's *Suspense* was explored in Bruguiere's still photography in these works from the 1920s.

I discovered Francis Bruguiere only recently, in my work on mediainspiratorium - my online archive of innovation in the media-arts, and I must confess that my admiration of his work - and for his creative, glamorous life (rich, talented, a successful avant-gardist) - has continued to grow in both respects.. Bruguiere experimented with multiple exposure pictorialist photography, photo-storyboards, abstract-photography, solarised and partly-solarised. His photographs of the multi-talented English singer/performer/writer Rosalinde Fuller - often in multiple overprints like that left, are outstanding examples of multi-points-of-view pictorialism - and there seems to be little doubt of Bruguiere's adoration of Rosalinde Fuller - intellectually and culturally they seem to be brilliantly well matched. The elegance of the multiple nudes and Fuller (below) capture the beauty and somehow the liberation of the Twenties in a way that echoes the writing and cultural society of Scott Fitzgerald, the photographer Alfred Steiglitz and the painter Georgia O'Keefe.

(left: Bruguiere: *Rosalinde Fuller* 1923 (below: Bruguiere: *Rosalinde Fuller* 1923)







(left above) Raoul Hausmann: *Tatlin at Home* 1920+ Gustav Klutsis/Klucis: postcard design for Moscow *Spartakiada* 1923 + Westminster Polytechnic: 1/10th scale model of Tatlin's *Monument to the Third International* (original 1920, model c1994. Tatlin was the constructivist engineer/architect responsible for the gigantic project: *Monument to the Third International* (1920) - 400 metres high, but never built full-size. I was at the Westminster Polytechnic in the early 1990s when the students and staff built a scale model about 1/10th size. The dadaist Hausmann (one of the inventors of modernist collage/photomontage) imagines the Russian constructivist genius as half-man half-machine, in a studio laced with machine parts, diagrams of human organs, ship's propellers, film-strips, jumbled heaps of mechanical parts - all locked into an exaggerated-perspective 'laboratory'.

*"Tatlin at Home* depicts a prototype of "mechanical thought" rather than the actual representation of Vladimir Tatlin, one of the most important figures in Russian avant-garde, the key artist and architect of the Constructivist movement. Constructivism was devoted to making use of art only for practical, social purposes and Tatlin became renowned for his ambitious, utopian project of the *Monument to the Third International*. The important detail about Dada though is that their work was often infused with spontaneity and irrelevance, and in the present work Hausmann stays true to the Dadaist ideals and uses a found photograph of a random man to depict Tatlin! (yes, this is not Tatlin himself)

In 1967 Hausmann recalled: "In the Berlin of 1920... the avant-garde spoke enthusiastically about machine technology, of which they had only a vague idea. One day, I thumbed through an American magazine absolutely absent-mindedly. All of a sudden, the face of an unknown man struck me, and I do not know why I automatically made the association between him and the Russian Tatlin. ...But above all, I wanted to make the image of a man who had nothing in his head but machines, cylinders and motors, brakes and car steering wheels. This man must be thinking of a grand machine. I searched for this in my photos and found the stern of a ship with a huge propeller. This I put behind on the back wall. Didn't this man also want to be a voyager? Here is the map of Pomerania on the left wall." (This article © galleryIntell - <https://galleryintell.com/artex/tatlin-home-raoul-hausmann/>)

Gustav Klutsis/Klucis: postcard design for Moscow *Spartakiada* 1923 - Klutsis taught at Vkhutemas (acronym for the Russian Higher Art and Technical Studios, established 1920) - the famous interdisciplinary 'Russian Bauhaus' art-school - alongside Alexandr Rodchenko, Varvara Stepanova, and Lyubov Popova - where they constructed a scale model of Tatlin's *Monument to the Third International*, and carried exhibitions of El Lissitzky's work as early as 1921.

Photomontage enabled Klutsis, Rodchenko and others working in this ideal constructivist medium to quickly assemble and remediate startling messages from the flood of 20th century printed imagery. My argument here is that constructivist photomontage added an interesting new dimension to the pictorial stream of consciousness in line with the increasing mechanisation of the World in the twentieth century. (See: Siegfried Geidion: *Mechanisation Takes Command* 1948)





**Lev Kuleshov: *The Keleshov Effect* c1915-1920**

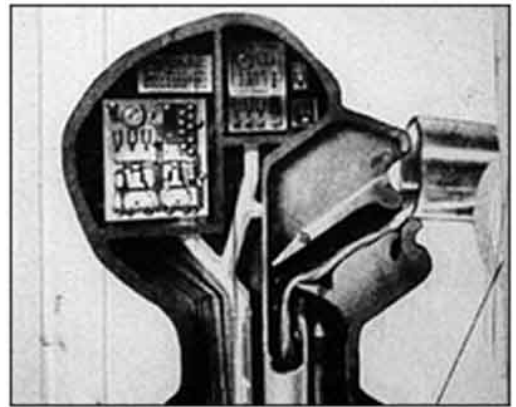
Kuleshov and a fellow director, Vsevolod Pudovkin, developed a theory of 'contextual montage' that indicated that cinema audiences interactively participated in the creation of meaning in a film. "Kuleshov edited a short film in which a shot of the expressionless face of Tsarist matinee idol Ivan Mosjoukine was alternated with various other shots (a bowl of soup, a girl in a coffin, a woman on a divan). The film was shown to an audience who believed that the expression on Mosjoukine's face was different each time he appeared, depending on whether he was "looking at" the bowl of soup, the girl in the coffin, or the woman on the divan, showing an expression of hunger, grief, or desire, respectively. The footage of Mosjoukine was actually the same shot each time."

This experiment has been repeated and validated several times since then, and this kind of contextual montage can be found in Eisenstein's *Battleship Potemkin* and Pudovkin's *Mother* (1926 - see poster below). The poster design for *Mother* seems to reiterate the Kuleshov/Pudovkin contextual montage theory, juxtaposing images from the film in a staccato cyclical montage. Eisenstein, Kuleshov, Pudovkin and the Kino-Pravda revolutionary Dziga Vertov (Boris Kauffman: *Man with a Movie Camera* 1929) carried the collage/photomontage/kino-montage cycle to its fruition in the 1920s and 1930s...



**В ГЛАВНЫХ РОЛЯХ** • В. БАРАНОВСКАЯ, Н. БАТАЛОВ.  
 СЦЕНАРИЙ - Н. ЗАРХИ, РЕЖИССЕР - В. ПУДОВКИН, ОПЕРАТОР - И. ГОЛОВНЯ, ХУДОЖНИК - С. КОЗЛОВСКИЙ.



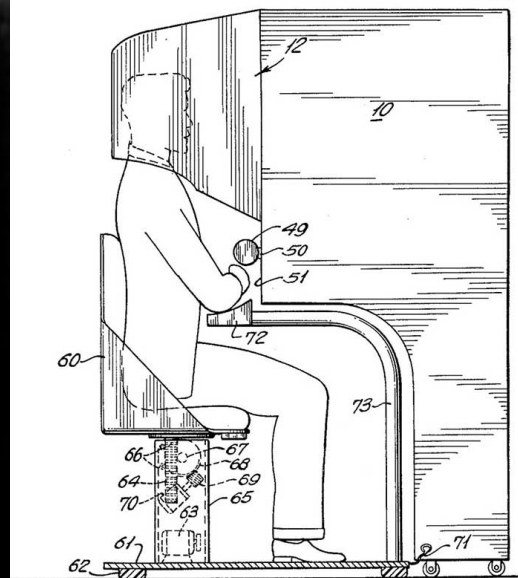


Eduardo Paolozzi *History of Nothing* 1963 © courtesy of the artist / British Artists' Film and Video Study Collection



A couple of decades after Kuleshov and the Russian Constructivists, artists like Kurt Schwitters (who was one of the pioneers and innovators in collage) and the sculptor/print-maker/art-theorist Eduardo Paolozzi began to celebrate the imagery in American popular magazines. Paolozzi collected cut-out imagery from *Life*, *Time* and other mags, collaged them in sketchbooks, and in the early 1950s presented these in a series of talks to his colleagues in the *Independent Group* (IG) - a radical spin-off from the recently created Institute of Contemporary Arts (1946). These talks called *Bunk!* importantly included IG members Richard Hamilton, Reyner Banham, Lawrence Alloway, and John McHale (who in this period invented the term *Pop Art*). Paolozzi's 16mm film of montaged stills and images from his collection, *The History of Nothing* (1960-63) made the point about collage and montage for a new generation. The stream of 20th century images was being celebrated graphically (spatially) in collage and photo-silkscreen and linearly in film.

top left Eduardo Paolozzi: *I was a Rich Man's play thing* 1947



Morton Heilig: *Sensorama* early patent drawing 1957. This was a great ‘futurecasting’ research project - while several *Sensorama* pods were built, producing the intricate interactive content in sound and vision was more difficult and mitigated against the machine’s success. But as Howard Rheingold suggests (in his book *Virtual Reality* 1991), this was the first electro—mechanical attempt to build a personally-immersive simulation ride. There were electro-mechanical flight simulators at this time (Albert Link: *Link Trainer* from 1927). But, as the Sixties indicated, the future of simulation was computer-based. Ivan Sutherland, one of the founders of computer-graphic modelling (Sutherland: *Sketchpad* 1963) had demonstrated a head-mounted display in 1965 and by the 1980s was developing military and commercial digital flight-simulators with his company Evans and Sutherland...

Morton Heilig: *Sensorama* 1957.

Heilig had a background in cinematographic projection. Impressed by Fred Waller’s work on *Cinerama* – a three-projector wide-screen cinema system introduced in 1950, Heilig realised the potential of the immersive cinema experience. And he wanted to engage his audience sensorially – with senses beyond those of sight and sound. In 1957 he makes the *Sensorama*, and arcade-style entertainment.

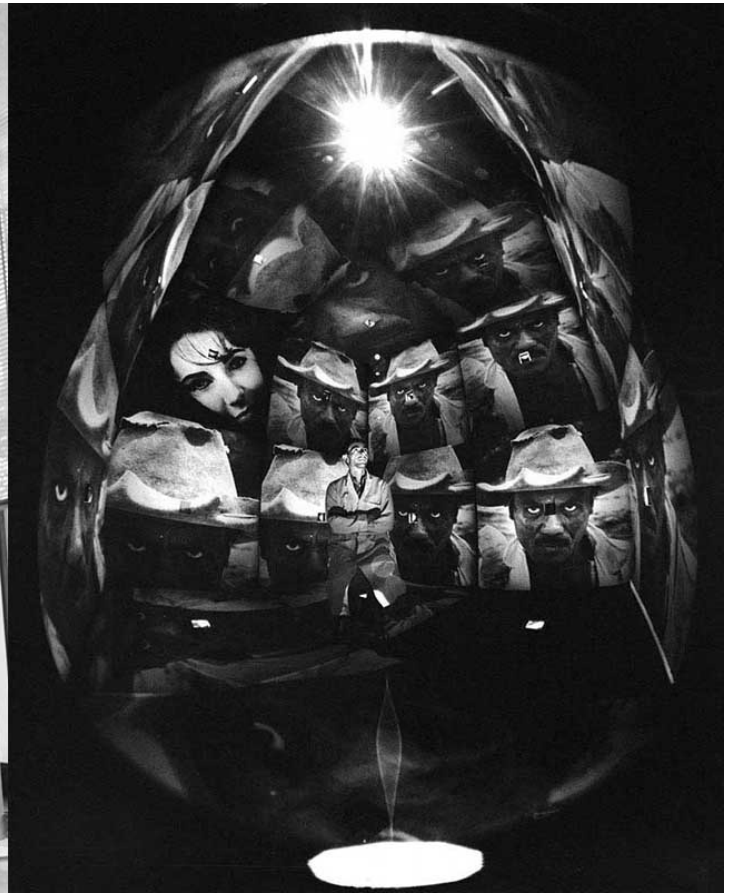
*Sensorama* was an electro-optical-mechanical motor-cycle-ride simulator. The user sat on – or in – the machine, looking at back-projected movie footage shot from a motor-cycle driving around New York. The user’s handlebar controls caused the film to speed up or slow down as the throttle was twisted, a fan accelerated air – with occasional whiffs of carbon monoxide – over the user. The sound effects were stereo – inside the hooded cowl of the simulator. The visuals were immersive, the seat shaking, the whiffs of Manhattan in the rushing air. This is really the most advanced simulator before virtual reality technology was made user-friendly in the early 1990s. Heilig was an important innovator in the artist’s perennial quest to engage an audience both multi-sensorially and immersively – a quest whose first signs – storytelling, dance and drama around the tribal fire – appeared perhaps in the neolithic, perhaps even earlier. (The best description of Heilig’s work, and extensive interviews with him are in Howard Rheingold’s *Virtual Reality* 1991).





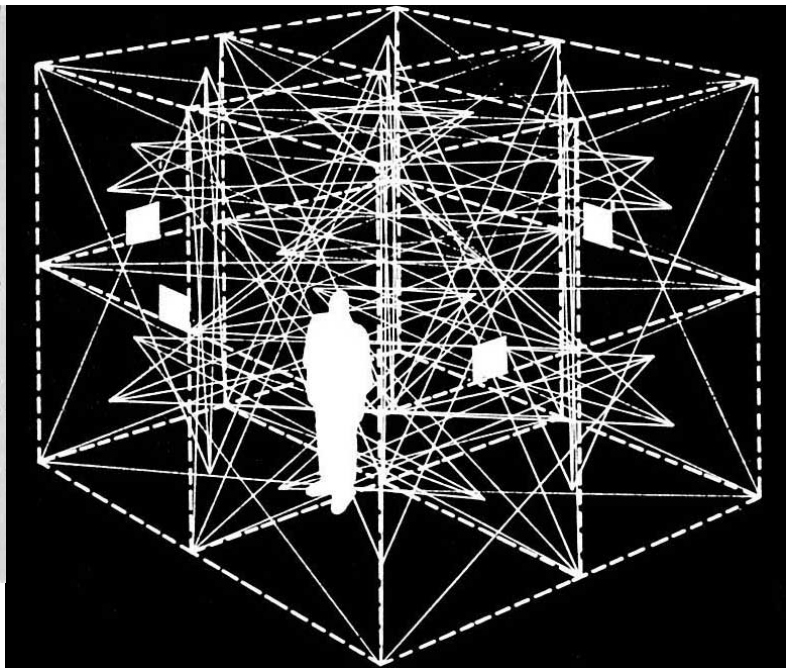
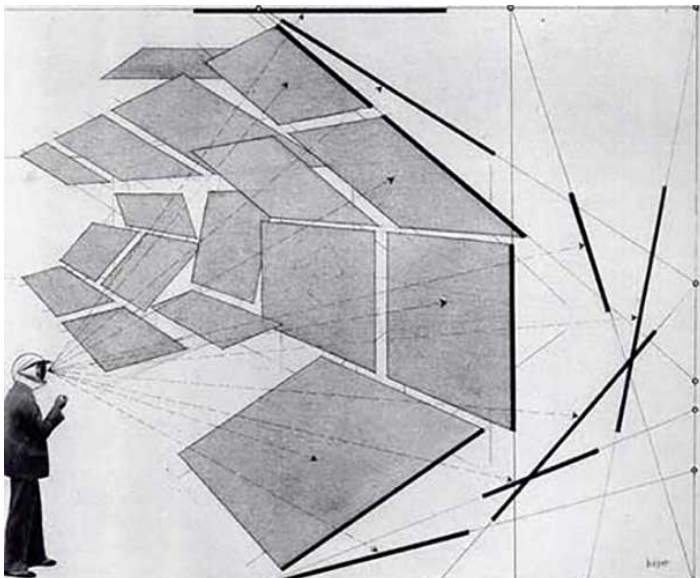
**Robert Rauschenberg: *Estate* 1963** Rauschenberg was another intellectually observant artist maturing in the 1940s (at Black Mountain College, alongside Stan Vanderbeek, Buckminster Fuller, Elaine and Willem de Kooning, Walter Gropius, Cy Twombly and many more). I was lucky enough to see his *Dante* rub-off drawings and collage at the Whitechapel in 1963 - which led to his photo-silkscreen paintings like the one above, often perceived as a bridge between the dominant Abstract Expressionism of the late 1940s and 1950s, and Pop Art. These painterly images contrast with Paolozzi's photo-silkscreens (previous pages) and continue the modernist stream of consciousness emerging in the early 20th century.





Ken Isaacs: *Knowledge Box* 1962 (left: exterior, right: interior)

The next step in the trail of collage> photomontage> kino-montage> painterly photo-silkscreen> multi-frame/multiscreen fx> were the realtime multi-screen immersive experiments of the early 1960s - by artist/engineers like Stan Vanderbeek and Ken Isaacs. The *Knowledge Box* is a constructed installation by experimental-architect-designer Ken Isaacs - a large (12 foot cubic-space) built of steel, wood and masonite, and fitted with 24 slide-projectors and sound inputs. Inside the *Knowledge Box* you experience "a pre-internet device to transmit narratives in a non-linear way, an immersive environment between artistic installation and interaction design which questioned the "passive" models of transmission of information." (Mariabruna Fabrizi at <https://socks-studio.com/>), Contemporary with Stan Vanderbeek's *MovieDome* (1963), this is a remarkable audio-visual immersive environment - in retrospect you can see this as a prescient and tangible vision of our omniscient, multi-channel, multiscreen, realtime media-information environment in which by the 2020s we are thoroughly and completely immersed, except that now we have urban video feedback too with millions of smart-phone cameras, CCTV surveillance and wall-size display and advertising screens, - and in addition to this, we have the social feedback media of Twitter, Facebook, Youtube, WhatsApp, instagram, WeChat, TikTok, QQ , Telegram, SnapChat etc... (<https://walkerart.org/magazine/enter-matrix-interview-ken-isaacs>)



(above: Herbert Bayer: *Extended Field of View* 1930  
right: Ken Isaacs: *multi-view schematic of Knowledge Box* 1962)





**Stan Vanderbeek: *Movie Dome* 1963**

Vanderbeek - a multi-talented artist and arts-innovator, trained at Black Mountain College in the late 1940s and influenced by the early 'Happening' performances of Buckminster Fuller, Merce Cunningham and John Cage. In the 1950s he experimented with photo-collage and animation (inspiring Terry Gilliam and John Stezaker among others). In the early 1960s he bought some land at Stony Point, in New York State and erected a prefabricated dome there, which became his *Movie-Dome* - the scene of multi-image projections, talks and audio-visual performances. Here Vanderbeek's immersive, layered imagery, paralleled that of Ken Isaacs and his *Knowledge Box* at Illinois Institute of Technology. Both artists had understood the zeitgeist technology and cultural future projection espoused by Fuller, McLuhan, McHale and others at this time. Like the *Knowledge Box* of Isaacs, the *Movie Dome* established a moving, multi-screen montage that audiences found themselves immersed within - a futuristic metaphor or simulation of late 20th century and 21st century hyper-mediation (like those envisioned in Jean Baudrillard's *Simulacra and Simulation* (1981)). These guys envisioned the future in the early Sixties, just as the technological ground-rules of our actual future were being invented.

Both these works indicate that the artist-engineers had intuited the likely future of communications - a future being envisioned by the computer-scientists, engineers and visionaries working within the ARPA (Advanced Research Projects Agency) community, where visionary scientists like JCR Licklider, Douglas Engelbart and Ivan Sutherland were inventing the real future of information technology, computer networking, and personal computing all still decades away in the early Sixties



**Alexander Hammid + Francis Thompson : *We Are Young* 1967**

Hammid was a major Czech-American photographer and documentarist film-maker, who also worked with Maya Deren on the first 'Trance film' *Meshes of the Afternoon* (1943). He experimented with large-format and multiscreen cinematography with major documentaries in 1964 (*To Be Alive!* at New York World's Fair) and his startling iMax format documentary *To Fly!* (for the Smithsonian's grand opening in 1976). At Expo67, As you can see above, *We Are Young* used different multi-frame, multi-screen formats, but the whole Expo67 was a celebration of what culture-critic Gene Youngblood labelled *Expanded Cinema* in his 1970 book - it was full of innovatory multi-screen formats, in a wave of *spirit of the age* artworks that begin with works by Stan Vanderbeek and Ken Isaacs in the early Sixties and was revisited by Mike Leonard and John Bowstead's Light/Sound Workshop at Hornsey College of Art (from 1962), Joe Boyd and John Hopkins *Underground Freak Out (UFO)* club in London in 1965, and Andy Warhol's *Exploding Plastic Inevitable* of the following year - a fusion of the avant garde and the underground.





Immersive, realtime, colourful slide-shows (aka Audio-Visual Art, Light-Shows, multimedia art) zoomed into global focus - mainly from avant-garde media-focussed and McLuhan-influenced artists like Ken Isaacs, Stan Vanderbeek, and John Bowstead, but popularly, by Light-Show artists like Mike Leonard, Mark Boyle and Joan Hills (*Soft Machine Liquid-Light-show* 1967), Andy Warhol's split-screen films and his Velvet Underground collaboration *The Exploding Plastic Inevitable* (1966) and numerous American light-show pioneers like the *Joshua Light-Show* and *Sensefex*. This stream was epitomised by the Beatles *All You Need is Love* broadcast globally on the BBC TV 1967 *Our World*. These immersive, totally synesthetic mixed-media experiences chimed especially with the widespread-use of psychedelic drugs in the late Sixties and brought the underground, the avant-garde and mainstream music culture together - creating a flow of imagery, montage, and spatial/temporal mediated experiences that were early markers in the recent history of new media and 'expanded cinema' pointing forwards to our late 20th and 21st century total 24/7/365 multi-channel, multi-media environment.. to where we are NOW.



(top) Mark Boyle: 'Lysergenic' Oil-slide for *Liquid Light Show* at UFO c1967 - (bottom) Light-Sound Workshop slide by Tony Rickaby 1967  
Two facets of audio-visual art in the Sixties: Mike Leonard's Lysergenic oil-slide style, and Tony Rickaby's McLuhanesque info-art style.



**“All You Need is Love is a song written by John Lennon and credited to Lennon/McCartney. It was performed by The Beatles on *Our World*, the first ever live global television link. Broadcast to 26 countries and watched by 350 million people, the programme was broadcast via satellite on June 25, 1967. The BBC had commissioned the Beatles to write a song for the UK’s contribution and this was the result. It is among the most famous songs performed by the group.”**(wikipedia)

**“This was a phenomenal demonstration of the power of (the new) music and (new satellite) media. Watching the television that night (on a 7-inch Sony Portable), you were straight away immersed in a vision of an emerging world-line where the counter culture (represented by the Beatles, the studio-audience, and Lennon’s song) interfaced directly with a mass, global television audience. Other countries’ contributions seemed sadly tame and parochial compared with the most popular band in the world revealing their omni-spiritual song – it was a plea for peace (we were at the peak of the Vietnam War -and the Cold War), a religious mantra, a pop song, and a direct message from style-setting London. The on-stage audience in Abbey Road included Mick Jagger, Marianne Faithful, Donovan and other hipsters, plus a full orchestra with George Martin conducting, the whole managed as a live *Happening*, a la Al Hansen. It was epoch-making stuff – the counter culture live on-stage to a global audience. We got close to this vibe again in 1985 with Bob Geldof’s *Live-Aid*, but this was the first! “** (Bob Cotton: from [mediartinovation.com](http://mediartinovation.com) 2002)

**This was my entry on this world-circling broadcast (<https://mediartinovation.com/2014/06/02/beatles-bbc-our-world-global-tv-broadcast-all-you-need-is-love-1967/>) in 2002 - over 20 years ago, and now I’m talking about the omniscient *stream of consciousness* and the stream of modernist media that followed it, and made our twentieth and twenty-first century media ecology. *Our World* was the first-ever global television hook-up - a masterpiece of satellite broadcasting and super-proof of Arthur C. Clarke’s 1945 prediction of the possibility of *Extra-Terrestrial Relays* in *Wireless World* magazine. Super - because this was a world-around *television* broadcast via a constellation of satellites including IntelSat1, which was the first communications satellite to be placed (as a ‘constellation’ of satellites- as Clarke had calculated - in geosynchronous orbit - 20 years after Clarke’s prediction. Only weighing 34.5 kilos and measuring 76x61 cm this functionally replaced a global cable network weighing several million tons, thus also proving Buckminster Fuller’s dictum of ‘doing more with less’**



could follow with MPEG standards (MP3), Server-Push like PointCast, Napster, Apple iMusic, BBC iPlayer, MPEG-4,

OR General Systems Theory, Whole Earth Catalog, Cohen Aaron, Cybernetic Serendipity, Colloquy of Mobiles, Alan Kay - Dynabook, Burnham Systems-Software, Larry Roberts: ARPANet topology, Fleischer Boston Strangler, Yellow Submarine (Jenkins: Eleanor Rigby sequence), Trumbull slit-scan for 2001 A Space Odyssey, Crumb Zap Comix



**Abel Gance: *Napoleon* 1927.** Abel Gance was a singular genius of the silent film era, a director who, according to silent film historian Kevin Brownlow **“covers every aspect of motion-picture production”**. And *Napoleon* is his masterpiece. It is significant in film and media history: it contains a wealth of innovative camera shots (chest-mounted cameras, saddle-mounted cameras) including big closeups, and three-screen panoramas and montages. And it is most modern in its rapid cutting. According to Brownlow: **“Gance wanted to hurl the spectator into the action” - and the scene that exemplifies this is the chase across Corsica where the camera is extremely mobile, intercutting pans and big-closeups as well as tracking shots, to create a tremendously engaging sequence.** Apparently Gance did not have the benefit of a Moviola (film-viewer) for editing, and would stick his film clips to a large window in order to edit his tryptich sequences. This is probably the first multi-screen film - creating a fascinating technique for non-linear story-telling that was not to be revisited until the late 1960s (The multi-screen pieces by Christopher Chapman at Expo67, *The Thomas Crown Affair* (1968), *The Boston Strangler* (1968), and *Woodstock* (1970). Eisenstein is said to have thanked Gance for his inspirational cutting technique. The movie historian and archivist Kevin Brownlow meticulously restored *Napoleon* in 1981 (in consultation with a 90-year old Gance) and it was further polished by Brownlow in 2016. (See *Napoleon as seen by Abel Gance* 1990 (ed Bambi Ballard, Foreword by Kevin Brownlow).

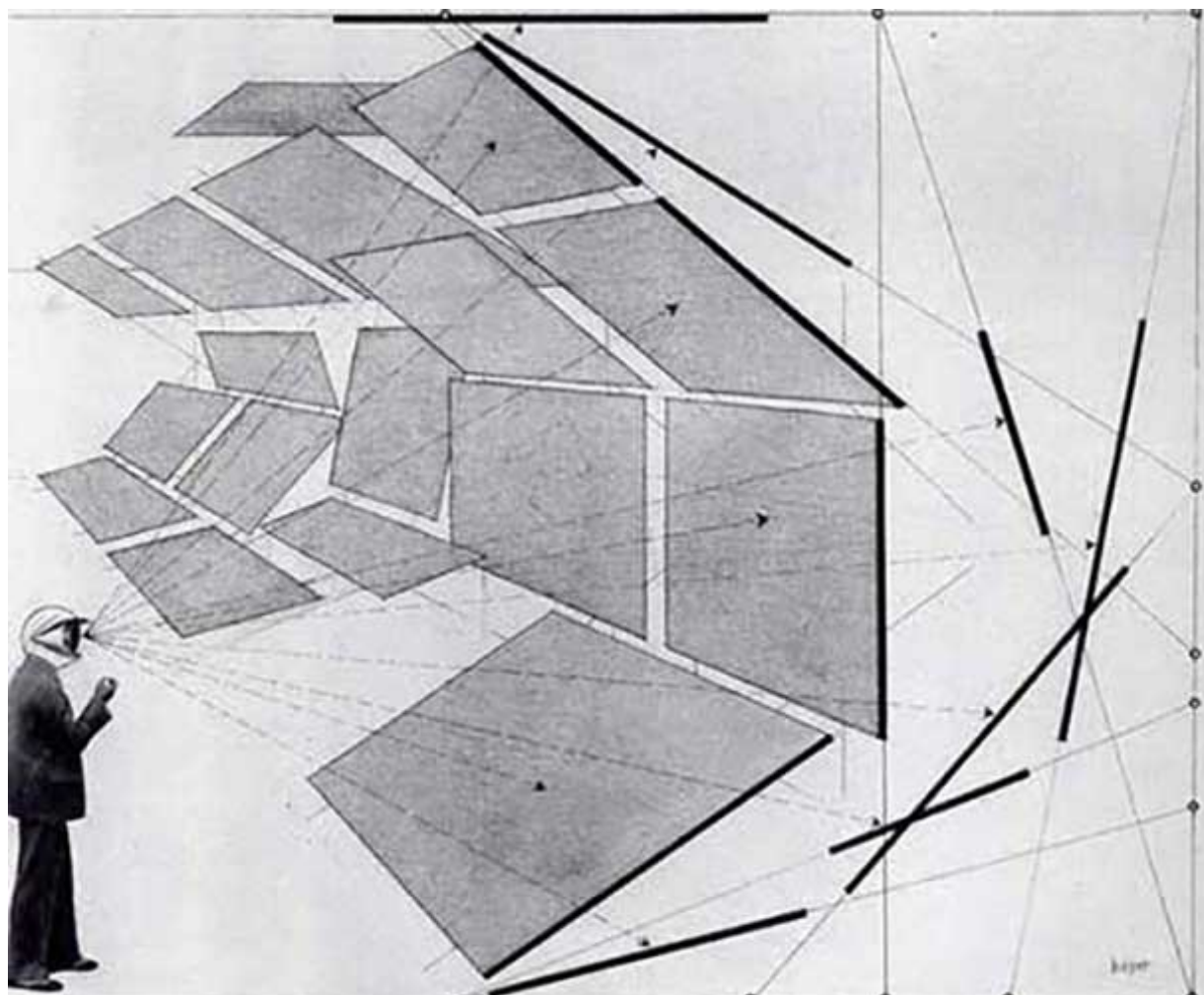




(top) Abel Gance triple-screen sequences from *Napoleon* (1927). (bottom) Francis Bruguere: *Rosalinde Fuller* (1923). It wasn't just Gance who was experimenting with multiple views - Francis Bruguere produced a whole suite of images of the actress/singer/performer Rosalinde Fuller - the multi-talented English beauty who was a socialist-feminist, a collaborator with Cecil Sharp collecting folk-songs, performed as *Ophelia* with John Barrymore, and was a guest-performer at the White House for President Taft.

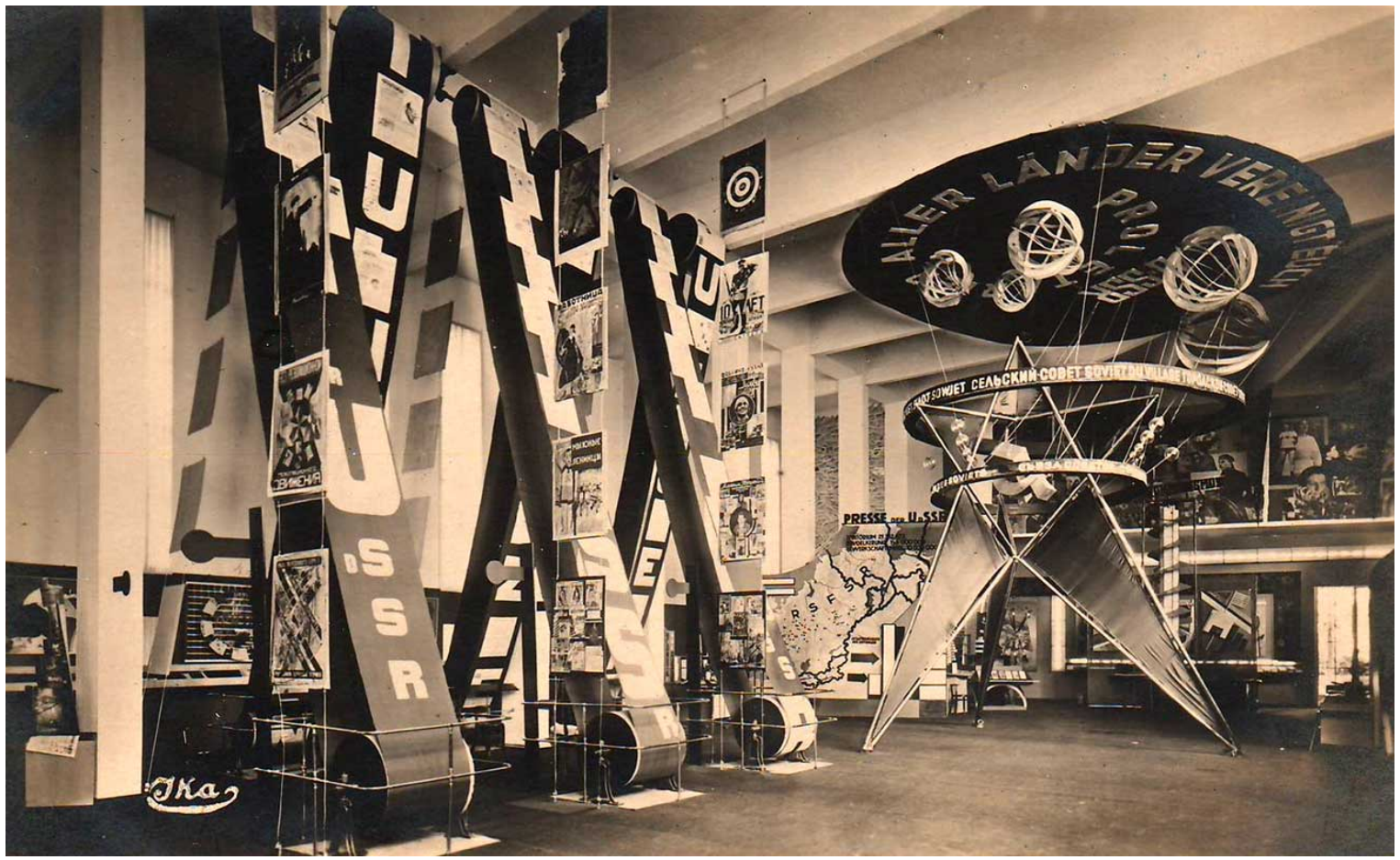


You can 'read' multi-screen as a temporal and spatial extension of collage - a way of graphically extending montage to fill more of the viewer's field-of-view, and to engage them intellectually, offering contextual subject-matter and possibly multiple narrative-threads to follow. The Bauhaus designer Herbert Bayer had explained this 'extended field of vision' in the mid-1930s (below), mapping a new space for the exhibition-designer...



The result of this *extended field of vision* meant that designers and artists could potentially embrace the viewer in an immersive and non-linear visual scenario, embracing both the central-attention field and the peripheral fields of vision, allowing the viewer a greater freedom of choice, or as Fred Turner of Stanford put it ' a greater 'democratic-surround' of choice (Fred Turner: *The Democratic Surround* 2013). Turner makes a good argument, but 'the total field of vision' wasn't just deployed by American democrats, in fact Herbert Bayer's research into the 'extended field of vision' (above, Bayer: *Extended Field of Vision* 1935) and El Lissitzky's fabulous *USSR Pavilion* for the Cologne *Pressa* exhibition (next page 1938) and both these examples set the tone for the *Democratic Surround* espoused by Turner. Considering the impact of both focal-attention and peripheral vision, this extended field, not only offered the spectator a considerable range of cognitive engagement - a choice, and an invitation of *what to see* - but reinforced the immersive experience of multiple media in reflecting the revolutionary graphic displays of this period. This encouraged spectators to engage with a wider range of cognitive 'hooks' - not just the obvious ones in the centre of focal attention, but those in peripheral vision too. And this harks back to the range of pictorial perspectives invented by the Cubists, a generation earlier, and extended the visual stream of consciousness beyond collage, photomontage, and filmic montage into the immersive Everything, Everywhere, All at Once experience envisioned in recent work by the Daniels, Adam Curtis, and David Hockney (*Bigger and Closer* 2023).





Two views of Lazar Markovich (El Lissitzky) fabulous USSR pavilion for the Cologne Pressa Exhibition, summer 1928. Utilising motion (moving loops of banners, spiralling display stands, hanging mobiles - juxtapositions in the extended field of view enticing the participation and engagement of visitors, and establishing the avant-garde of multi-format, omni-view-point multi-panel design.



