tinued his work in Nazi Germany. Some filmmakers like Joris Ivens and Henri Storck turned to radical and independent films that were largely free of formal experiments and modelled on agit-prop works. Germaine Dulac, pioneer of the French avant-garde in the early 1920s, had found employment within the French industry and attended the Brussels conference to recruit avant-garde activists to work for her in the industry:

> The presence of Germaine Dulac, director of one of the largest French production houses, Gaumont-Franco-Film-Aubert (GFFA), who supported the 1930s generation of cineastes, was emblematic of the confluence with the commercial cinema. It was at Brussels effectively that she hired Vigo for directing TARIS (1931) as well as Henri Storck, chosen as assistant by Pierre Billon at the Studio Buttes-Chaumont. [93]

Dulac's itinerary and movements between avant-garde and the industry demonstrates how unstable the categories and labels were: Even today, Dulac is still mainly remembered for her most experimental works, LA SOURIANTE MADAME BEUDET (FR 1923) and LA COQUILLE ET LE CLERGYMAN (FR 1927), which achieved notoriety when the surrealists disrupted the premiere. But again, she theorised and taught, she made commercial and industrial films, she was in charge of the French society of ciné-clubs and she recruited avant-garde filmmakers to work for the industry.

## 4.4   The Myth of Total Cinema

> *The most modern have already threatened to project*
> *reflective games in the sky, instead of painting or drawing.*
> *This light cone is perhaps a graphic page*
> *from the future book of art history.*
> Rudolf Arnheim (1927)[94]

The dream of total cinema is an old one – complete immersion was dreamed up long before cinema came into existence and some have searched for the roots of cinema in the dream of submersion in another reality.[95] In his article » *Le mythe du cinéma total* « André Bazin has reflected on this myth of the origin of cinema. For Bazin, cinema was conceived mentally – » invented « as an idea so to speak – long before it came into existence as a technological fact, yet in practice the cinema remains but a shadow of what it was meant to be. Bazin dreams of a total cinema:

> It is the myth of an all-encompassing realism, a recreation of the world according to its own image, an image that would feel neither the ballast of free interpretation of an artist nor the unidirectionality of time. And even if film in its early years did not have

all capacities of the eventual total film, it was against its will and only because his fairies were technically not capable of giving this, even had they wanted to.[96]

For Bazin, the silence of the silent cinema was only a coincidence and every addition (sound, colour, widescreen) was a step towards the realisation of what cinema was meant to be. Hyperbolically, Bazin concludes his short essay with the declaration that the cinema has not been invented yet: » *Le cinéma n'est pas encore inventé!* « Despite its problematic technological determinism and teleological nature, it is interesting to note how this origin myth, which is also a myth of imperfection (the cinema is not fulfilling its promise), is reiterated and played out in the various advances made by avant-garde filmmakers. The avant-garde ideal of transforming life and integrating it into art meant that the film avant-garde often imagined overcoming the limiting dimensions of the theatre because cinema as a social event with all its rituals and expectations ultimately reduced the impact of the medium. The auditorium's architecture eliminated any possibility for interaction or participation, while the style of films in terms of narrative and editing reduced the spectator to a passive receiver of audio-visual cues, while the promotion of the cinema experience focused on maintaining the status quo. Blowing up the cinema or taking film out of the cinema and into the streets promised to interpellate and assault, to encounter and confuse people everywhere. For those reasons, many avant-garde activists preferred total immersion inside the cinema theatre or total projection everywhere outside. There are thus two strands in the avant-garde dream of total cinema: either the cinema itself would expand spatially and technologically in order to make the experience in the auditorium overwhelming and breathtaking or the cinema would be thrust into the life and daily routines of the people, abandoning the auditorium to encounter spectators outside engaged in their daily routines. Both strategies ultimately (and teleologically) culminated in the utopian idea of the convergence of life and art: either cinema would become lifelike and impossible to distinguish from our perception of reality or cinema would be found everywhere, again making it indistinguishable from our environment. By pointing out a genealogy of total and expanded cinema I want to show how the film avant-garde of the 1920s and 1930s was engaged in those dreams of complete immersion.

Perhaps the most consistent experimenter in the direction of wanting to destroy the traditional *dispositif* of cinema, but also the most contradictory figure on the margins of the avant-garde and art film is Abel Gance. He often publicly played up the image of the misunderstood artist and genius ruined by the evil forces of the film industry. In fact, there is another side to Gance that is equally important: the technician, the engineer, the *bricoleur*. In this perspective, his patents, technological developments and inventions become an integral and per-

haps even the most decisive aspects of his cinema. Gance imagined and tried to create an expansive cinema in the sense that the avant-garde of the 1960s conceived it: to overwhelm and envelop, surround and enchant in visual as well as audio terms. This overwhelming cinema was to be achieved not via narrative, image and sound alone; it would require a transformation, in effect a magnification of the cinematic apparatus. His ideas of poly-visions, experiments with wide-screen, enhanced depth of image, multiple projections and surround sound began in the 1920s and lasted for the duration of his career until the post-war era.

Gance has always been a contradictory and controversial figure and remains so: On the one hand, Gance saw himself as an industrial designer of mass communication, on the other, he played up the image of the misunderstood artist. After his initial successes with J'ACCUSE (FR 1918) and LA ROUE (FR 1920-22), Gance spent a considerable amount of time researching what he called » visual language «. His proposal of seeing film as a modern form of visual hieroglyphs relates, on the one hand, to the research that was being done on Russian Constructivism and into the laws and rules of visual communication. On the other hand, it points toward the future, toward concepts from film theory such as Christian Metz' attempt to formulate film as a language system. Attempts at developing a universal language were also a mainstay of the avant-garde in the first decades of the Twentieth Century. This was true in painting (Vasily Kandinsky, Paul Klee), in literature (Khlebnikov, Hugo Ball, Kurt Schwitters, James Joyce) and in film (Hans Richter, Viking Eggeling). But, even within the popular film world, this was a hot topic of debate as has been demonstrated by Miriam Hansen.[97] The result of Gance's experiments was his monumental NAPOLÉON (FR 1925-27) which is overflowing with visual tropes. The film, with its superimpositions, mobile shots, awkward camera angles and, of course, with the famous triple screen employed at climactic moments, could be called » an encyclopaedia of optical effects «. In various ways, Gance tried to expand and exceed the limits of the conventional frame, addressing the spectator in new and unexpected ways; or, as Gance himself put it: » From that time onwards I had understood the necessity to surpass the ordinary limits of the screen. The silent cinema had reached the extreme limits of its capabilities. On my part, I had attempted to surpass them. … The triptych had the advantage of enriching the alphabet. «[98] Gance saw the limitations of the silent cinema in the rigid frames of recording and projection, which he tried to overcome, but he always remained within the confines of the metaphor of a cinematic language.

For NAPOLÉON he devised, developed and put into practice a system of three overlapping images side-by-side that were shot simultaneously and projected synchronously on screen. Gance's system was complicated and cumbersome and only a few cinemas in major cities were able to project these films in the

correct format. In Paris, one of the leading avant-garde theatres permanently installed an apparatus for screening triptych films after the success of Abel Gance's NAPOLÉON, which, to my knowledge, is a unique case:

> The real *raison d'être* of Studio 28 was as a *laboratory of film*, it does not have an ani-mated orchestra with ascending movements, only one thing is important: the *photo-graphic projection booth* and the *screen* which is one piece, nine meters wide and forms one vast frescoed mural in the front of the auditorium. Studio 28 is the only space in Paris where a triptych projection is permanently installed and all research about this invention is done by the inventor himself: Abel Gance.[99]

The author of this piece was none other than Jean Mauclaire, himself a protago-nist of the Parisian avant-garde scene as the owner and programmer at *Studio 28*. Mauclaire also held the exclusive distribution rights to Abel Gance's triptych films. By converting his cinema to the triptych format he was attempting to support the search for a cinematic essence, which culminated in the orchestra-tion of images. Invariably, the idea of the laboratory returns, with the artist-di-rector as the engineer – only here the laboratory space moves from the film studio to the cinema.

The triptych technique was also used for films which were not specifically made for this *dispositif* as if to demonstrate the universal nature of the technol-ogy: J.C. Mol's UIT HET RIJK DER KRISTALLEN (NL 1927) was shown on the tri-ple screen at *Studio 28* in February 1928.[100] Again, this demonstrates how much the film avant-garde is a phenomenon that was active across a broad field and was not limited to just producing experimental films. The activities of the avant-garde were also evident in exhibitions, teaching, publishing, writing and the curating of exhibitions. Mauclaire even went so far as to claim that this new triple image would do away with the typical musical accompaniment. In *Studio 28*, the experiment was extended to sound accompaniment as the live orchestra was replaced by mechanical music thanks to the triptych's overwhelming pre-sence:

> The possibilities of the triptych are even more broad, permitting the orchestration of images, the triptych will kill the orchestra. We are also employing *mechanical music*, a necessary concession for the preparation of too brusque a transition. But one not-so-distant day the auditoria will possess nothing but *a screen and a booth*. Cinema suffices on its own. The cinema is a force that will make fun of its adversaries.[101]

Mauclaire argued, not unlike the formalist theories of Arnheim and others, for a cinema that was characterised not by its realistic features and life-likeness, but by those characteristics that lent the cinema a life of its own. Indeed, Mauclaire believed that the orchestration of images could be replaced with the orchestra-tion of sound.

Gance's Napoleon was one of the outstanding successes, which was capable
of crossing over from a limited avant-garde public to a general audience like
Das Cabinet des Dr. Caligari (GER 1919/20, Robert Wiene), Berlin, die Sin-
fonie der Grossstadt (GER 1926/27, Walter Ruttmann) or La Passion de
Jeanne d'Arc (FR 1928, Carl Theodor Dreyer). Alexander Dovzhenko, during
his visit to Berlin,[102] was taken by Hans Richter to watch the film which Richter
compared favourably to Fritz Lang's Metropolis (GER 1925-26): » We visited
together the premiere of Abel Gance's Napoleon at the Ufa-Palast am Zoo. As
depressing and stupid the monstrous Metropolis had seemed at the same
place before, as great and intelligent Napoleon revealed itself to be. «[103] As
Richter remembered , Dovzenko's enthusiasm culminated in his ideas for a dif-
ferent kind of cinematic *dispositif*, when upon leaving the cinema, the Soviet
director exclaimed:

> What I want to do? A film about snow and ice, but not only projected on three screens
> in the front, but projected everywhere. On the ceiling, the sides and even behind the
> viewer. He should freeze with the hero and warm up with him at the fire, while out-
> side the hungry wolves draw increasingly small circles around us. The frozen fish we
> rip with our teeth and the frozen faces are rubbed in the snow. The viewer shakes,
> freezes, awakens and almost frozen considers himself the hero.[104]

Dovzenko was already imagining IMAX in the late 1920s, envisioning today's
» experience economy « with its shopping malls, theme parks and amusement
rides. His synaesthetic totality went beyond representation in the traditional
sense and envisioned the cinema as the simulation of a different world.

After the laboriously long work Gance put in on Napoléon, he toyed with
various projects, but it was not until the middle of 1929 that he again turned
towards a subject that gripped his imagination. He opted for La fin du monde,
based on a » rather quaint and tedious novel «[105] by the French astronomer Ca-
mille Flammarion about the last days on earth just before a comet destroys all
life on the planet. The book has been described as a mixture of heavy-handed
symbolism, spiritual theories, scientific speculation and Christian eschatology.
Besides the scope of the project, critics have speculated that there might have
been a political reason for Gance's choice: the film prominently features an in-
stitution modelled on the League of Nations, which Gance supported. In the
film, it is an international institution that saves the day for humanity that has
otherwise turned to sectarianism and spirituality. Here was a project, which
might be able to demonstrate the necessity and positive effects of such institu-
tions, which were often seen as powerless constructions by contemporaries in
which endless discussion would lead to no visible results.[106]

This film was Gance's first sound film and because he had no previous ex-
perience with the new technology he turned for technical support to Walter

Ruttmann who had just finished his first sound film, MELODIE DER WELT (GER 1928/29). Ruttmann is in many respects a figure similar to Abel Gance, always struggling with his self-definition as an artist, poised between constructivism and a romantic cult of creative genius, and in political terms equally difficult to pin down. Both were at the forefront of the emerging avant-garde in 1927, after NAPOLÉON and BERLIN had received enthusiastic reviews. After the introduction of sound, both experienced a sudden loss of reputation to which their joint project contributed. The production of LA FIN DU MONDE (FR 1930) proved disastrous: Despite an unusually large budget, the film soon ran into financial difficulties; sound technology was only in the process of being introduced at the time in France, thus problems had to be solved on a pragmatic day-by-day basis. The film was finished without Gance's presence and the reception was devastating. Supporters of Abel Gance like film historian Kevin Brownlow know the reasons for his downfall: His is the classic case of a filmmaker's career cut short by sound film as Gance's reputation never returned to its original stature in the 1920s, never fully recovering from the failure of LA FIN DU MONDE. Here was a highly original genius destroyed by a combination of careless and greedy producers with flawed technology that the artist was forced to use because of the follies of an uneducated audience.

However, the background to LA FIN DU MONDE can also be told in another way: what could have attracted Gance to this project apart from the grandiose scope of the project? Was it the chance to do for sound what NAPOLEON had done for visuals – to present a kaleidoscopic encyclopaedia of every imaginable sound effect? The triptych was meant to enrich the visual possibilities of the silent film via its construction, while LA FIN DU MONDE developed what Gance has termed » perspective sonore «. This surround sound system avant la lettre was developed for LA FIN DU MONDE and its technological achievements were conceived to contribute to the success of the film. Just prior to production, Gance applied for a patent for » perspectival sound « on 13 August 1929. Loudspeakers were placed in various locations in the cinema, not just behind the screen as was usual, but also along the sides of the auditorium, on the ceiling and the floor. In this manner the space would become truly three-dimensional and the film would extend beyond the flat, two-dimensional surface of the screen. In this vein, Gance had also experimented with various systems of enhanced depth in film, early forms of three-dimensional cinema. Gance saw the cinema as a medium that should allow the audience to immerse themselves, via the story telling, the choice of prototypical story and last but not least by its technological effects.

The sound system in 1929 was not ready to be marketed yet because it had not undergone a testing phase, which ultimately contributed to the failure of the film. The problems with Gance's plans were not new. Even the projection of the NAPOLÉON triptychs proved difficult in practice; very few big city cinemas

could screen them. But Napoléon could still function as an ordinary film with-
out the tryptich effect. The contribution of the triptychs to the impact of the film
has in retrospect possibly been overestimated. The problem of La Fin du
monde was that, unlike his earlier historical film, many scenes simply did not
work without the surround feeling that Gance had envisioned. The film is lar-
gely a montage of reactions to the imminent destruction of the earth; the tedious
string of scenes lacking narrative coherence only becomes comprehensible with
the effect of the surround sound system. Thus, La Fin du monde should not be
judged by standards normally applied to ordinary narrative films, it should be
seen instead as a promotional film demonstrating the capacities of the new sys-
tem. Gance continued his experiments with *Polyvision* and *écrans variables* into
the 1950s when Hollywood had adapted a tamed version of his triptychs in
their various wide-screen formats.[107]

This dream of immersion was meant to render the cinema invisible by extra-
polation: the cinematic apparatus would expand into the auditorium space and
become so realistic that the representation would overshadow the technology
behind it. This utopian possibility has been developed and extended in amuse-
ment parks and gaming arcades, but most importantly by the IMAX company,
which might locate its genealogy in the avant-garde.[108]

But, there was another total cinema tendency among the avant-garde that
wanted to abolish cinema altogether or at least to transform it beyond recogni-
tion. Film was to be taken to the streets and shops, to private homes and public
events – or projection would eliminate representational reality and be limited to
only forms, lines and colours. Indeed, the first daylight film projectors that were
able to bring films outside the cinema were developed and installed in the 1920s
in department stores, museums and exhibition spaces. Besides these commer-
cial applications, the avant-garde activists also devised alternative methods of
taking film out of the cinema and into other walks of life. Implicitly, this concep-
tion also refers back to the relationship between the auditorium space and the
screen space as two of the most crucial variables of the cinema as *dispositif*.[109]

The attempt to bring cinema out of the auditorium space helped focus many
tendencies of » pre-cinematic films «, films that were not quite films yet or films
that were imagined, but not produced such as the futurist colour music of Carlo
Carrà and Arnoldo Ginna in Italy (1910-1912), Duncan Grant's *Abstract Kinetic
Painting with Collages* (1914), a scroll to be moved synchronically through a light
box to a Bach piece, or the serial paintings *Rythme coloré* of Leopold Survage in
France (1912/13). Avant-garde ideas of how to overcome traditional bourgeois
distinctions between art forms (especially between music and visual art) mixed
with *fin-de-siècle* conceptions of a synaesthetic *Gesamtkunstwerk* that united all of
the arts in one single form.

The music analogy implies a similar conception of expanded cinema. Viking Eggeling, shortly before his death, imagined » a system for the projection of light onto the clouds at night, based on the still-to-be-developed theory of › Eidodynamics ‹. «[110] Here, the cinema intersects with much larger trends of spatial-movement art – the abstract films of Richter, Eggeling and Ruttmann are in this perspective much less singular events; rather, they evolve out of a tradition of revolutionary visual arts, sculpture, music and architecture. The central and common element unifying these trends is the concentration on light as the main medium of new art.[111] Not coincidentally, all three filmmakers had their own very strong ideas about musical accompaniment to their films (or silence as in the case of Eggeling). Ruttmann collaborated with composer Max Butting on scores for his films while Oskar Fischinger started off with musical pieces, which he would then visually illustrate. Eggeling wanted a complete suppression of sound (another strong idea about the relationship between visual and aural elements in the cinema). Meanwhile, Richter in 1928 and 1929 collaborated intensely with different modern composers in his commissions from the Baden-Baden music festival. Thus, while it is possible for the film avant-garde to argue that » independent experiments … before 1925 are few and far between «,[112] this neglects the larger context in which the attempts with scroll paintings and coloured projection, movable stages and light sculptures, serial painting and musical visualisations contextualise the » absolute films «.

In his early years, Oskar Fischinger collaborated with composer and musician Alexander Laszlo. Laszlo had written a treatise on coloured light music.[113] This combination of music and sound in a performance was part of a trend which resulted in countless public shows and written reactions throughout the 19th century and well into the 20th.[114] Laszlo toured successfully throughout Germany with a light organ and films prepared by Fischinger in the mid-1920s. Fischinger continued experimenting with multiple projections and combinations of abstract moving colours and shapes with static slides accompanied either by music specifically composed by Erich Korngold or a percussion group.[115] Fischinger continued his experiments well into the 1950s:

> Later, when Fischinger was disillusioned with the film industry because of the Hollywood studios' refusal to give him creative control, he hoped to strike gold by inventing a Lumigraph, a piano that projected colours onto a screen. He imagined that every good bourgeois home would like a Lumigraph next to the piano.[116]

The post-World War Two avant-garde would take up this challenge, albeit without truly acknowledging the debt to these early innovators.

Many of these devices and experiments are now largely forgotten. For instance, the trials at the *Bauhaus* where ideas about overcoming traditional boundaries between the various art forms was one of the driving forces behind

this endeavour. The *Bauhaus* teachers Kurt Schwerdtfeger (*Farbenlichtspiel*, GER 1921-23) and Ludwig Hirschfeld-Mack (*Reflektorische Farbenspiele*, GER 1921-23) worked on similar ideas of projecting (coloured) light in conjunction with musical and stage experiments. Both presented performances as part of the matinee *Der absolute Film* in Berlin in 1925. In a similar way, ENTR'ACTE (FR 1924) was originally conceived as an intermission during Francis Picabia's avant-garde ballet *Ballet Suédois* presenting *Relâche* in Paris[117] while Erwin Piscator regularly used projection technology as part of his theatre productions.[118] These films were prepared by protagonists from the German avant-garde movements like Albrecht Viktor Blum, George Grosz, Leo Lania, Svend Noldan and others.[119] There are more examples in the 1920s of multimedia events that combined stage and film.[120] One of the more obvious problems of these projections was the fleeting nature of a complicated set-up that was put together for one show and then dismantled. By contrast, film is a relatively stable technology: even decades later one can still revive and project a film (as long as it has not suffered too much from poor storage).

Probably one of the most famous apparatuses devised to » explode « cinema was Moholy-Nagy's kinetic sculpture » light-space-modulator « (» *kinetische Skulptur Licht-Raum-Modulator* «), immortalised in his film LICHTSPIEL SCHWARZ-WEISS-GRAU (GER 1931/32). Its construction comes out of a tradition that attempted to create a composite art from music, light, colour and movement in a three-dimensional space.[121] The development of the » light-space-modulator « was greatly aided in terms of financing and technology by one of the leading German manufacturers of electronic equipment and technology, *AEG* (*Allgemeine Elektrizitäts Gesellschaft*, established in 1883). This company was interested in a device that projected mobile advertisements from moving vehicles such as trains, cars and buses. The underlying idea was to make advertisements mobile, to use the city as a projection screen, to use those objects or vehicles already moving through the city as projection booths. While traversing streets and squares, the moving projector on a bus, car or tram would project images or slogans on objects, buildings and people. Moholy-Nagy combined two important strands here: on the one hand, the fascination for the city as the *locus classicus* of modernity and modernism, the city as cause and effect of the fundamental transformations brought about in perception and experience. On the other hand, we have the idea of expanding and destroying cinema that is clearly visible in the classical avant-garde, but that only received more notice after World War Two when Gene Youngblood coined the term » expanded cinema «[122] and experiments at Knokke and elsewhere introduced a wider public to these ideas. Moholy-Nagy's film LICHTSPIEL SCHWARZ-WEISS-GRAU (GER 1931/32) is considered the first demonstration of this machine, a trial run of a propaganda machine that was not intended for cinema in the ordinary sense.

Seen in this light, a film normally referred to as an avant-garde classic acquires a wholly new genealogy and is inserted into the lineage of the industrial film or the documentary when we view the result as documenting light and shadow.[123] Moholy-Nagy's interest in light as a medium of expression is complemented by his choice of subject matter in his other films which deal with the city and the living conditions of various groups of people: IMPRESSIONEN VOM ALTEN MARSEILLER HAFEN (GER 1929), BERLINER STILLLEBEN (GER 1930), and GROSSSTADTZIGEUNER (GER 1932).

Architecture was only added later on, but similarly mirrored Moholy-Nagy's concerns with living conditions and constructivist preoccupations with social engineering: ARCHITEKTURKONGRESS ATHEN (GER 1933) and NEW ARCHITECTURE AT THE LONDON ZOO (GB 1936).[124]

I will now return to my opening point about expanded cinema *avant la lettre*. For Bazin, the inventors and industrialists who capitalised on the new medium – the Edisons and Lumières –belong to the sidelines of film and cinema history. Those who matter are the fanatics who gave everything to achieve the myth of total cinema:

> The fanatics, the madmen, the selfless pioneers who were, like Bernard Palissy, capable of burning their furniture to film a couple of seconds of flickering images are neither industrialists nor scholars, but possessed by the images of their fantasy. Film was born from the convergence of their obsession, from a myth, the myth of *total cinema*.[125]

It is those » men obsessed by their own imaginings « that we find in the circles of the avant-garde, stubbornly following this Bazinian myth which proved unattainable, but whose pursuit brought about some of the most interesting examples of avant-garde activity. Even much later, these ideas survived underground and only resurfaced at certain points in history. Not coincidentally, Alexander Hackenschmied/Hammid, one of the key figures in the Czech avant-garde in the 1930s worked with Francis Thompson on several early IMAX films in the 1960s such as TO BE ALIVE! (1964), TO THE FAIR (1965), WE ARE YOUNG / NOUS SOMMES JEUNES (1967) or US (1968), which were made for Expos or other events.[126]