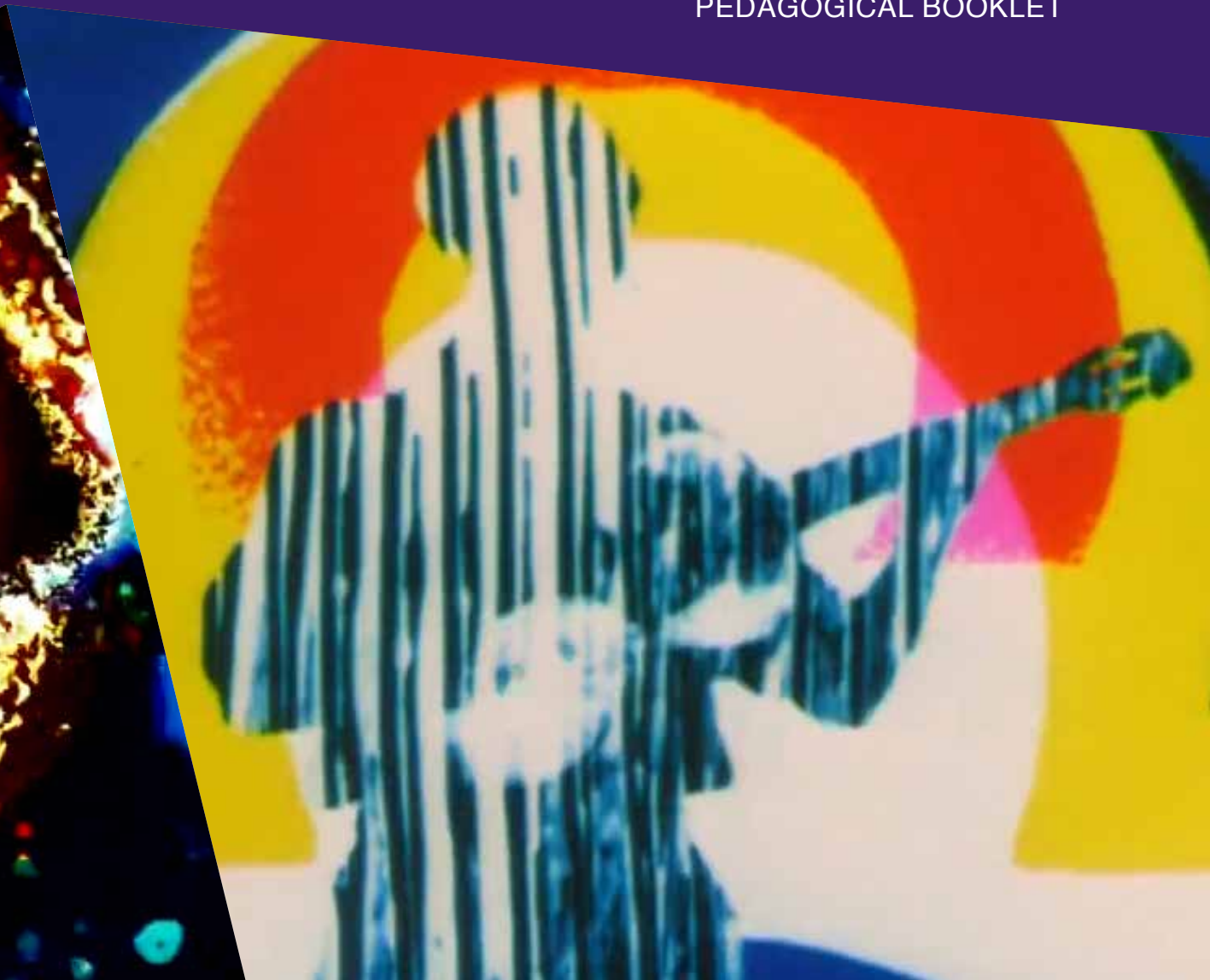
CinEd

European Cinema Education
for the Youth

CINEMA REINVENTED

PEDAGOGICAL BOOKLET



SOMMAIRE

CINED: A COLLECTION OF FILMS, TEACHING FILM EDUCATION

CinEd is committed to promoting the “seventh art” as a cultural form and a tool for understanding the world. To do so, a common teaching approach was developed based on a collection of films produced by European partner countries of the project. The approach is adapted to our era, where our way of watching, receiving, distributing and producing images is characterised by constant, fast and major changes. These changes are apparent on a multitude of screens: from the biggest – in theatres – to the smallest (down to smart phones), by way of television, computers and tablets. The cinema is still a young art, and its death has been predicted more than once; but it is clearly alive and well. The changes have an impact on cinema, and must be considered as we seek to promote it, especially in view of the fragmented way that films are watched on different screens. CinEd publications offer and support a teaching programme that is sensitive and inductive, interactive and intuitive, providing knowledge, tools for analysis and the possibility of dialogue between images and films. The works are considered at different scales: as a whole, of course, but also through fragments and in different temporalities – photograms, shots, and sequences. The files that accompany the film enable the teacher or mediator to make use of the film freely and with flexibility. One of the major objectives is to perceive the cinematic image with understanding compiled from multiple points of view: the description, an essential phase of any analytical approach; the ability to extract and select images, to classify and compare them, to study them – images of the film but also others from representational and narrative arts (photography, literature, painting, theatre, comic books, etc.). The goal is to reveal meaning in otherwise fleeting images; film is, in this regard, a synthetic art that is especially valuable for young people who are developing their own perception.

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WHY OFFER A PROGRAMME OF EXPERIMENTAL AND AVANT-GARDE FILMS TODAY?

With the two-part programme “Cinema Reinvented”, we open a window on surprising, little-known films, to raise awareness and encourage creativity in youth from a very young age.

Experimental films do not tell stories, but show the adventures of strange characters: shapes, colours and substances. These films have something of the childlike about them, because all forms of creation are allowed: scribbling for fun, misdirect and reveal, take a thing apart to understand the technical and creative cogs of film from the inside.
Experimental film in fact exists as a way of thinking of film, rather than a genre, and visually answers the question: “What is cinema?”; it does not hide the secrets of its production, on the contrary, it reveals them. Experimental films show the physical film itself – scratched, holes, spaces between the photograms – and remind us of the medium the images are recorded on. Sometimes there are visible and willed imperfections, errors or mistakes that remind us that the person making the film was experimenting, testing. Emphasising abstract forms, colours and textures, unusual editing, these films renew the link with the visual arts of painting and photography (which had such a strong influence on avant-garde filmmakers of the 1920s), but also music and poetry, a reminder that early cinema was not narrative.

Thus, experimental cinema, both playful and instructive, offers a unique was to begin understanding how films are made, because it shows the basics of film in action, uninhibited. The viewer is incited to look at the images differently. Experimental films shape pure sensations: visual, auditory and even tactile. Shaking up cinema, they explore narrative forms through de-construction, resembling dreams; they imagine worlds where figures, forms and colours appear disappear, transform. Camera movements, blurred focus, frame rates to capture slow motion (as used by scientists in their films), play on our perceptive expectations and remind us that cinematic movement is an illusion. By carrying us along on a sensorial wave of images, they free us to experience a vision that is not unilateral, but open to all kinds of interpretation.
Unfettered by commercial interests, inspired by the desire to use the tools of cinema to make strongly personal films, experimental practices open the field of creation and possibility to the infinite. In an era of digital film and dematerialised media, experimental film allows us to (re) discover a compilation of techniques that perpetuate the original magic of cinema. The filmmakers’ gestures are explosive and free of complexes; building and pulling apart, assembling and disassembling, exploring and analysing are the fundamental facets of a single act: creation.

THE CINEMA REINVENTED
EXPERIMENTAL CINEMA AND AVANT-GARDES

PART ONE
Danse excentrique (Eccentric dance), Alice Guy (1902) - 2’
Opus III, Walter Ruttmann (1924) - 6’
Rainbow Dance, Len Lye (1936) - 4’
Chat écoutant la musique (Cat listening to music), Chris Marker (1990) - 3’
Rhus Typhina, Georgy Bagdasarov and Alexandra Moralesovà (2014) - 3’
While Darwin Sleeps, Paul Bush (2004) - 5’
*Impresiones en la alta atmosfera - Impressions en haute atmosphèr*e, José Antonio Sistiaga (1989) - 7’
Duration of Part One : 30’

PART TWO
Danse serpentine (Serpentine dance), Lumière (1897) - 1’
La Croissance des végétaux (The Growth of Plants), Jean Comandon (1929) - extrait 8’
Virtuos Virtuell, Thomas Stellmach (2013) - 7’
Notes on the Circus, Jonas Mekas (1966) - 12’
Schatten (Shadows), Hansjürgen Pohland (1960) - 10’
Vormittagsspuk (Ghosts Before Breakfast) Hans Richter (1927) - 7’
Duration of Part Two : 45’

The CinEd programme “The Cinema Reinvented” was designed by the Cinémathèque française (Paris), with the Cinémathèque Royale de Belgique (Brussels), the Deutsches Filminstitut (Francfort-sur-le-Main), the EYE Filmmuseum (Amsterdam), under the aegis of a partnership between the CinEd and the European FLICK programme (Film Literacy InCubator Klub).

CinEd: A Bao A Qu (Spain) / Asociace českých filmových klubů (Czech Republic) / Arte Urbana collectif (Bulgaria) / Cinémathèque française and Institut français / GET- cooperativa sociale (Italy) / IhmeFilmi (Finland) / NexT Cultural Society (Roumania) / Meno Avilys (Lithuania) / Os Filhos de Lumière (Portugal).

II – THE FILMS : CONTEXT

CINEMA AS A VISUAL ART, A CRAFT, AN INDEPENDENT WORK

Experimental cinema is at the border of film and other arts. Like in a painting, the characters are often colours, light, matter and form; like in a musical score, the motifs change according to logics of rhythm and analogy; like in a dance, the camera executes choreography. But, in cinema, the universe appears when it is projected on a screen. “Experimental” is not a genre of cinema, because it does not fit into a category defined by themes or narrative codes. It is more fully a pratique artistique in itself, like painting, music, dance; it creates a bridge between traditional cinema and other artistic practices. Experimental films have no imperative to tell a story through narrative construction, freeing them to act as a powerful vehicle for sensations and impressions. This sensorial dimension aims to please the eye and stimulate the body. Thus, experimental cinema explores paths unknown to traditional films; the specific elements of cinema – projection, film, movement – become the ground for experience.

Experimental creation is often artisanal, sometimes solitary, and in all cases runs against the current of the industrial organisation of cinema. The traditional professional and technical specificities (director, cameraman, editor, etc.) do not exist, nor do the usual production phases (pre-production, scenario, shooting, editing, etc). Often the artistic creator alone takes on all of these roles. Experimental cinema both suffers and benefits from this independence. Far from the traditional market, it struggles to be seen, as it is rarely distributed through traditional channels. However, this autonomy grants it unparalleled creative freedom.

These disparate aspects, as well as the scattered experiences associated with them and that are grouped under the (sometimes controversial) umbrella of “experimental cinema” have given rise to several trends, each with its own identity: Absolute cinema, cinéma pur, etc. Without going into the question of designations, it is important to emphasise that the expression “experimental cinema” groups together films by filmmakers. While that may seem obvious – filmmakers make films – it is contradicted by the history of the discipline. Indeed, the first experimental films were made by artists from other fields.

THE AVANT-GARDE IN THE 1920S

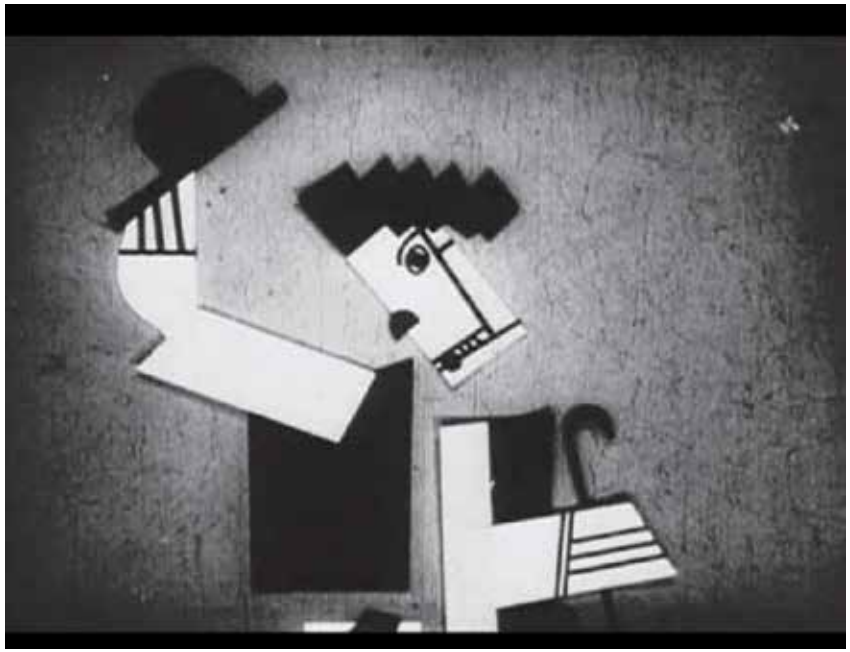
The origins of experimental cinema are rooted in the continuity of avant-garde art movements. They appeared in Italy, France and Germany at the end of the First World War, and sought to renew the arts and their traditions. Avant-garde movements called for a revolutionary break from the past. Artists in the movement worked in multiple disciplines, with creative forms playing off and influencing one another in a modernist spirit linked to the rise of mechanical industries (the speed of electricity was a veritable totem), to the rejection of deadly conflict and the absurd politics that lead to it, as well as the emergence of new forms of thought (psychoanalysis, the soviet revolutions, etc.).

Cinema played a role in these creative questions and revolutions. At the end of the 1910s, many filmmakers felt that cinema should not be limited to narrative forms and that exploration – aesthetic and political – could take its cue from avant-garde arts. Thus the films that are associated with this period, which may be close to different artistic movements, are referred to as “avant-garde cinema”.

Avant-garde filmmakers of the 1920s were often artists (painters, photographers) who mined the rich veins of the future of cinema. Their engagement was not to serve cinema. These painter-filmmakers shifted their interrogation from the canvas to the screen. Artists as diverse as Giacomo Balla, Viking Eggeling, Hans Richter, Walter Ruttmann, Fernand Léger, found the cinema to be a medium where, because of its specificities (it’s language and tools), they could further their own questions about painting. The idea that painting should imitate reality had already been challenged at the end of the 19th Century by Impressionist painters, who sought to recreate the impression of movement (see Cinema of Origins film programme, chapter 4: “Connection with Arts”, 1. Painting).

Vitesse de la voiture (Car speed), Giacomo Balla, 1913

Some artists used music as a reference point. These filmmakers translate notions of rhythm, cadence and harmony into images, building sequences in the logic of correspondence or counterpoint and working in the editing room as if following a score. Filmmakers transposed existing musical scores into images. Leading avant-garde films (Ballet mécanique by Fernand Léger and Dudley Murphy - 1924 -, the four Opus by Walter Ruttmann – 1921/25 -, Emak Bakia by Man Ray - 1926 -, Étude cinégraphique sur une arabesque by Germaine Dulac - 1929) asserted their association with music and their detachment from the heritage of theatre and literature. “The error of cinema,” wrote the painter Fernand Léger in 1925, “is the scenario.” The previous year, Francis Picabia said with some irony, “The theatre is to cinema what the candle is to the electric light, the donkey to the automobile, the kite to the airplane.”



Ballet mécanique (Mechanical ballet), Fernand Léger, 1924

Through theoretical writings and films, avant-garde artists fought for their own cinematic identity. Whereas theatre generally focuses on the story and the actor’s performance, these film artists chose to abandon those features. They concentrated on the specific nature of cinema, which also served to highlight the links with other arts such as painting and music: the possibilities created through the act of editing, the physical characteristics of the film stock, framing, rhythm, movement (see the Glossary: Editing, and Film/emulsion).

The arrival of “talkies” (The Jazz Singer, 1927) slowed European avant-garde experimentation. After 1930, it became more expensive to make a film, the emerging sound technologies were expensive to use. The introduction of dialogue made films even more like theatre. The vibrancy of the avant-garde in Italy, France and Germany in the 1920’s faded in the face of the division of labour in filmmaking and the constitution of an industry.

During this period, independent directors, not closely associated with essentially avant-garde artistic movements, emerged in other European countries. In the Netherlands, Joris Ivens made poetic odes and documentaries celebrating the city, its lines and shapes, its iron constructions reaching for the sky; in this way he followed in the footsteps of the silent films and avant-garde urban symphonies (the German film Schatten, included in the programme, furthers this approach). Avant-garde films also explored the possibilities offered by animation. Walter Ruttmann’s film Opus III (part of the programme) echoes the creations of the 1920’s forging links between music and cinematic abstraction. The New Zelander Len Lye (his film Rainbow Dance is part of the programme) worked in London in the early 1930’s, painting and scratching directly on the film stock (see the Glossary: Direct animation).

PASSAGES AND CONTAMINATIONS: FROM EUROPE TO THE UNITED STATES

The emergence of the Nazi regime and the Second World War in Europe led many artists to emigrate to the United States, including such avant-garde filmmakers as the Germans Oskar Fischinger and Hans Richter, the Scot Norman McLaren, Len Lye and the Czech filmmaker Alexander Hackenschmied. A central figure in the Czechoslovakian avant-garde of the 1930's, he married American filmmaker Maya Deren. Together, they made Meshes of Afternoon (1943), inaugurating the American avant-garde under the influence of surrealist films.

Meshes of Afternoon, Maya Deren et Alexandr Hackenschmied, 1943

Filmmakers continued to explore and discovered new directions as they came in contact with the culture of the United States. American artists had seen their films and were impressed by them.

Meeting the European filmmakers, encountering their ideas and research, a new generation of U.S. filmmakers brought forth what would be known as underground cinema. They defended the idea of free cinema, totally independent of the forms and distribution channels of commercial cinema. While it is not abstract, neither does underground cinema rely on classic narrative; the unique stories, often unstructured, rallied to the cause of political protest in the 1960's: against the Vietnam War, against censorship, for the recognition of marginal cultures.

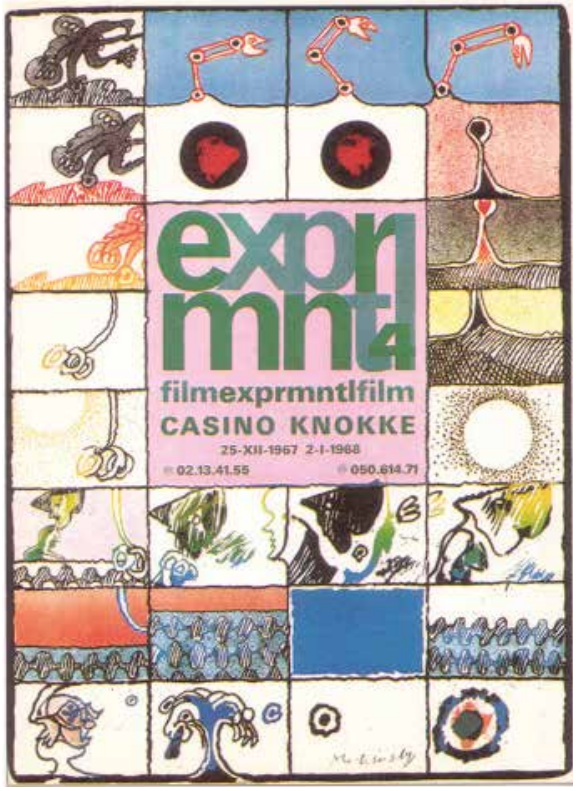
The vitality of U.S. cinema in the 1950-60's was as intense and creative as the cinema of the 1920's in Europe (where experimental cinematic creation had a hard time recovering from the Second World War). Nonetheless, these films were still excluded from commercial distribution networks. Screenings were held in universities and museums (the Guggenheim, etc.), or even improvised on rooftops in New York and San Francisco.

Jonas Mekas was a filmmaker who was central to this period. Having fled his native Lithuania, occupied during the war, Mekas (who made Notes on the Circus, in the programme) began shooting as soon as he arrived in New York in 1949. To help bring underground cinema in from the margins, Jonas Mekas created the magazine Film Culture in 1954, then joined with other filmmakers to found the Film-Makers' Cooperative in 1962. Through this innovative structure, experimental filmmakers were able to organise collectively and distribute their films outside of the usual channels. The U.S. example was followed in several other countries, especially in Europe, where cooperatives for the distribution of experimental films were created (the London Film-Makers' Co-op in 1966, Light Cone in Paris in 1982). In 1964, in Vienna, the experimental filmmaker Peter Kubelka participated in the foundation of the l'Österreichisches FilmMuseum and organised many screenings of avant-garde films there. In 1970, New York saw the opening of the Anthology Film Archives, the first film library specialised in the conservation of independent films, in other words, productions outside the mainstream commercial networks. Jonas Mekas, stepping in again, was one of the co-founders.

Jonas Mekas with his inseparable Bolex camera

DISTRIBUTION AND PRODUCTION TODAY

The multiplication of structures for distributing and promoting experimental cinema was a feature of the 1970-80's: specialised journals, university courses, the creation of a number of distribution collectives. Experimental films began to find a home in institutions, festivals (such as the famous EXPRMNTL held in Knokke-le-Zoute Belgium), museums and alternative spaces. In Europe and the United States, the first independent labs were created. Before they existed, it was rare for filmmakers to develop and print copies of their films. The usual method was for studios to send footage to "professional" laboratories that used standard methods to develop the film. Filmmakers thus had no part in this part of the process that could otherwise be part of the creative act.



Poster of the EXPRMNTL festival in Knokke-le-Zoute (Belgium), edition 1967-68

Thanks to independent laboratories, filmmakers were finally able to control the development of their films and copies (see the Glossary: Development). At the stage of development or printing or by working directly on the film, they could modify images and experiment with techniques. This type of laboratory has been flourishing in Europe since the 1990s: at the Arnhem Art School in the Netherlands, in Grenoble, France at the MTK workshop and in other cities (Nantes, Paris, Geneva, Berlin, Prague, Barcelona, Rotterdam, etc.). In these "labs", filmmakers handle the tools themselves, studying the composition of emulsions and working with the film stock itself as material. Machines in the labs also made it possible to create films from existing reels, a practice known as "found footage" (the sheet on Cat Litening to Music, note 8).

Towards the end of the period encompassing the 1980-90's, while video was coming to the fore, professional laboratories, archives and cinemas began to get rid of their equipment (printers, projectors, film stock, etc.) (See the Glossary: Optical printer). Because they knew how priceless it was, independent laboratories recovered the equipment that the industry had tossed out. Filmmakers fiddled with and configured the machines to meet their own needs in making experimental films (see the film Rhus Typhina in the programme).

This interest for creation using film stock as a medium was happening at the same time as video and digital tools were emerging and giving rise to new approaches to cinema. Beginning in the 1970s, many filmmakers took up these tools. The film Chat écoutant de la musique, by Chris Marker, included in the programme, is such a work (see the sheet on the film).

CONNECTIONS WITH EARLY CINEMA AND SCIENTIFIC CINEMA

Although it was innovative, this artisanal manner of developing film was not new in the history of cinema. Before the film industry was in full swing and had systematised the steps of filmmaking, the first filmmakers developed their film themselves. They did not have any other options: professional laboratories did not yet exist. The Lumière Brothers cameramen had unexposed film, chemical products and the Cinématographe, a camera that also served as a printer and a projector (see the programme “Early Cinema”, Vues Lumières sheet). Experimental filmmakers, however, use the laboratories for creative purposes. This renews the spark of the earliest days of cinema when “anything is possible”. Sets cobbled together, the medium – the film itself – that is revealed by errors in the development process, shaky narrative structure, feelings that overshadow story line, George Méliès’ “special effects” (overprints, camera freeze, etc.), colouring directly on the filmv as the Lumière Brothers and others did. Experimental cinema embraces and takes ownership of the artisanal techniques and trials.

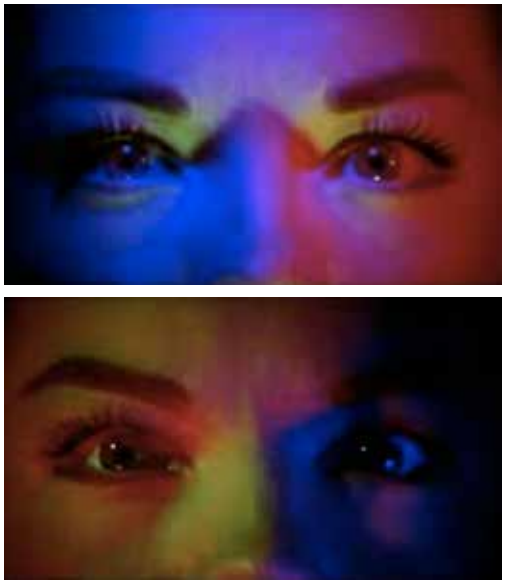
Experimental film also has links to scientific filmmaking. In a similar way, it invents processes to enable a different vision of the world. Seeking to discover the secrets of “reality”, scientific films try to show it as clearly as possible. In their quest to transform representations of reality, to “see the invisible”, experimental filmmakers call on the same techniques and the results are surprisingly alike. Techniques for shooting, printing and projection create a play of time and space: images can be slowed down, speeded up or frozen. Lenses make it possible to discover microscopic universes that, for all that they astonish us, are only showing reality under another light. Like scientists, experimental filmmakers use all the optical tools available (extreme close-ups, out-of-focus, etc.), from shooting to the laboratory.

Avant-garde cinema, like early cinema and scientific cinema, pushes the envelope on the creation of new forms and new ways of looking at the world or reinventing it. For all of these reasons, the programmes in “Cinema Reinvented” include scientific films and early cinema (The Growth of plants, Eccentric dance).

FILIATIONS, HYBRIDISATION: NARRATIVE CINEMA

Several traditional films, from classic cinema to contemporary cinema, rely on effects that might be deemed experimental. These effects play on colours, matter, temporality or the shape of shots; they work differently depending on the filmmaker’s intentions. Thus, the choice of non-realistic colours can generate imaginary landscapes: in the famous “Stargate” sequence of 2001, A Space Odyssey (Stanley Kubrick, 1968, E.U./G.B.), the character goes through space in a tunnel of psychedelic colours, as abstract and circular shapes appear and disappear when the astronaut passes.

In his 1964 unfinished work Hell (some scenes can be seen in L’Enfer d’Henri-Georges Clouzot by Serge Bromberg and Ruxandra Medrea), French filmmaker Henri-Georges Clouzot experimented with hallucinatory chromatic processes. To express the jealousy that is driving the main male character mad, Clouzot projects kaleidoscopic colours on the face and body of Romy Schneider, who plays his wife. In images of disturbing artistic beauty, Schneider’s body becomes the changing screen where the man’s paranoia is projected.



L’Enfer (Hell), Henri-Georges Clouzot, 1964 (unfinished film)

To express the feelings of one of his characters, French filmmaker Olivier Assayas asked the artist Claude Duty to scratch a section of film for a sequence of his work Irma Vep. The result is heightened dramatic power in the scene. White lines, the results of rips and scratches, streak out from the eyes or face of the character, materialising the gaze or the emotion. Slow motion effects add a strange sense of time to the sequence, a reflection of what we feel at times of high emotional intensity.

Slow motion and musical inversion, used by the French filmmaker Jean Vigo in 1932 for a pillow fight scene in Zéro de conduite, give the boarding school students' uprising a lyrical, dream-like quality. In the feature-length fiction Sedmikrásky/Daisys (Věra Chytilová, 1966, Czechoslovakia), the revolt of the heroines, in their own uprising, is underlined by many "cinematic disturbances" (editing, colour, framing, etc.), inspired by the experiments of alternative cinema.

The Little Daisies/Sedmikrásky, Vera Chytilovà, 1966

Other filmmakers, such as Brian De Palma, worked on the concept of simultaneity. How could one show two events that take place at the same time? From his first feature-length films to his more recent work (Hi Mom in 1970, Snake Eyes in 1998, Passion in 2012), De Palma has always used split screens. This technique splits the screen into two or more parts, each one showing a different point of view on a single event. Experimental film plays on the deconstruction of the components of cinema. The shot and the screen are of course among the elements whose form and function may be modified.

The artistic possibilities of film being infinite, contemporary experimental filmmakers continue to explore the possibilities of the format. Although some film cameras are now quite old, they still work, unlike digital devices that quickly grow obsolete as their manufacturers come up with technological innovations to boast about.

Nonetheless, experimental cinema today also makes use of more recent technologies and still finds inspirations in connections with other arts. A new generation of filmmakers is coming out of universities and arts schools with degrees in graphic arts, digital arts, new media and visual arts. Their creations are fertile crossbreeds. They are shown in movie theatres as well as arts centres, museums and alternative spaces. Films can include different formats of images: video, digital and analogue. Films are ever more present in complex installations that include images in movement, music, drawings, sculpture, dance, etc. A rich and always unexpected panorama that, today as in the past, goes beyond the technological limits of cinema.

III – THE FILMS, ONE BY ONE

SERPENTINE DANCES : Vues Lumière and Eccentric Dance by Alice Guy

1897, France, 35 mm, coloured b/w, 1 min
1902, France, 35 mm, b/w, 1 min 50
Director: Alice Guy
Dancer: Lina Esbrard
(Also see in the Programme Early Cinema, “Context”.)

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SERPENTINE DANCE :
Created in 1892 by the American artist Loïe Fuller, the serpentine dance uses the play of coloured lights on gauzy fabric. The coloured lights are arranged to project a changing swirl on the dancer’s costume, which serves as an undulating screen. In Paris, the metamorphosis of the Fée Lumière (Light Fairy) captivated the public and inspired artists: Henri de Toulouse-Lautrec painted it three times, the poet Stéphane Mallarmé suggested it was a medium between real life and the spirit world. .

Serpentine dances attracted early filmmakers, who made the show their own with the moving picture technology of the time: Loïe Fuller moved to Paris the same year that cinema was invented. Several pioneering filmmakers made films of serpentine dances interpreted by male and female imitators of Fuller.

Loïe Fuller, Henri de Toulouse-Lautrec, 1893 (lithography)

These films are similar in appearance and duration. In the first days of cinema, cameras could only take a limited amount of film at a time (17 metres); they lasted about one minute. At the time, the camera was often on a tripod, immobile. It was usually more or less facing the subject straight on, therefore taking the point of view of an audience sitting in a theatre. Colour film did not exist yet, so the dances were filmed in black and white. Thus the diversity and variations among the films are all the more appreciable: the dancer's moves, the choice of costume, the use of colouring techniques.

Among the pioneers having made serpentine dance films, Thomas Edison did three with his Kinetographe in 1984, George Méliès made his own in 1896, and of course the Lumière brothers and Alice Guy made Serpentine films that are the first in our two "Cinema Reinvented" programmes.

THE FILMMAKERS : brothers Auguste (1864-1948) and Louis (1862-1954) Lumière invented the Cinématographe, a device that enabled the recording, copying (see the Glossary: Printing) and the projection of films. Several artists and scientists had already made moving pictures before them, but the Lumière brothers were the first to have the idea of projecting their vues (early films were referred to as vues, or pictures).
Around 1895, the two brothers organised a few private screenings for businessmen and scientists. On 28 December of that year, the date that is generally given as "the birth of cinema", they screened a programme of films for a fee-paying pubic. The show took place at the Salon indien of the Grand Café at the Hôtel Scribe in Paris. For the first time in history, viewers bought a ticket to see a film: that night, the Lumières invented cinematographic entertainment.
Because it was small, the le Cinématographe was easy to transport. The Lumière brothers assigned several cameramen (opérateurs) – at the time "director" was not yet a concept – to "put images of the world into the box". Some of these cameramen remain anonymous, including those who made the Serpentine Dance in this film programme.

THE FILMMAKER: Alice Guy (1873-1968)) is recognised as the first woman to direct a film and the first female film producer. She was hired to work as a secretary in the early days of the Léon Gaumont company, founded in 1895 (and the world's first film company), and she offered to make a "comical picture" as a kind of compensation to send to customers who had bought faulty projectors. Thus, barely one year after the birth of cinema, Alice Guy made her first picture: La Fée aux choux (The Cabbage Fairy). Thanks to the unexpected success of this picture as well as the equally unforeseen boom in cinema, Léon Gaumont decided to name her head of production for animated fiction. Alice Guy held the position from 1896 to 1906; she was an innovator with regard to direction and subject matter, and made hundreds of films.

She moved to the United States in 1907 to promote a Gaumont device and soon founded her own production company, Solax. After some initial triumphs, her American career took a downward turn. Abandoned by her husband, accumulating debts and commercial losses, Guy tried, without success, to renew her ties to French cinema. In 1957 the Cinémathèque française paid a special tribute to her.

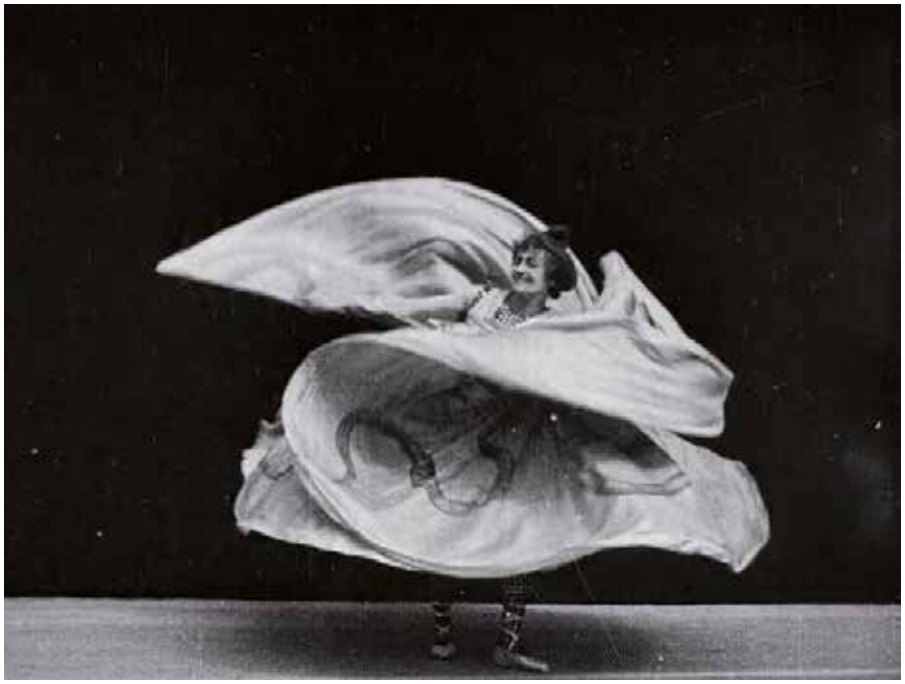
TECHNICAL AND AESTHETIC RESEARCH :

Auguste et Louis Lumière : One of the interesting things about their Danse Serpentine is the camera placement. It is not fully frontal to the performance, but slightly to the right, which enables the cameraman to include the edges of the stage in the frame (see Early Cinema, sheet on Vues Lumière). The choice was a deliberate one: in many of the serpentine dance films, there is no sign of the stage, which focuses concentration on the dancer's performance. By this slight displacement of the camera, the cameraman makes both the dancer and the space accessible to the viewer. The choice of showing the beams that hold up the stage participate in that as well. The performance is thus less disembodied, the stage setting more present, the association with the theatre immediate and accepted.

The main attraction of the serpentine dances is the play of colours. In the earliest days of cinema, some of the filmmakers, including the Lumière brothers, undertook to colour the films. The dancer specifically chooses a completely white costume, so that after the film is shot, different shades of colour can be applied to the image of the dress. In the film, we see chromatic variations; from blue to green, green to pink and so on, with changes about every two seconds.

At the time, the colours were applied to the film by hand; each photogram was tinted with a brush. The practice of colouring transparent images was already quite common; specialised laboratories applied inks to glass plates that were used in magic lanterns. Since their invention in 1659 by the Dutch astronomer and physicist Christiaan Huygens, magic lantern shows had been popular around the world, but they fell out of favour with the arrival of cinema, and the laboratories turned to colouring film. The surface of film is much smaller than the glass plates, so the work required a steady hand and was time-consuming (see the sheets on Impressions From the Upper Atmosphere and Rainbow Dance).

Alice Guy : Unlike the dancer's costume in the Lumière film, Lina Esbrard's is not completely white, but decorated with a wavy pattern, recalling the serpentine movements. Alice Guy chose a decorated costume, one assumes, because she knew when she was filming that she would not be applying colours afterwards. The camera, a bit closer to the dancer than the Lumière's, is fully frontal. The viewer can thus concentrate on the dancer's movements and her costume, clearly seeing the folds and superposition of the layers of gauzy fabric.



Danse excentrique, Alice Guy

Danse serpentine, Auguste and Louis Lumière

We also see the dancer's expressions (she smiles, or appears to grimace with effort) and her hands: they are visible outside the costume, holding the ends of the long rods hidden inside the sleeves. All of these aspects (the sight of the hands and facial expressions, the pattern and folds of the costume, the absence of chromatic effects) are signs of an incarnate presence: Alice Guy underscores the fact that under the dancer's costume there is a real woman, not merely a purely luminous apparition.

This power of incarnation compensates for the extreme sobriety of the stage setting. Alice Guy does not show the edges of stage or the architecture that supports it. The theatrical heritages is evident in LIna Esbrard's entrance and exit, as well as her bows to the audience, which demonstrate an evolution in cinematographic language. In the earliest films, the first turn of the crank was given after the action started. In the Lumière's serpentine, for example, the dance has already begun when the camera starts rolling; the cameraman turns his camera off before it is over. In Alice Guy's film, the dancer enters the frame after filming has started. At the end of the film, Alice Guy waits for the dancer to be off the stage before turning off her camera. These aspects of staging show that the structure of films was growing more complex.

Louis Lumière : « The cinema was relatively easy for me and didn't require a lot of effort. However, once it had been perfected and its operations sorted out [...], I began looking at the reproduction of colours [...]. It took me seven years of uninterrupted effort. During all that time I did nothing else. [...] I never lost hope, despite the advice of those close to me. [...] 'It's too complicated, you'll never magage...' I think that their incredulity rather egged me on. »[1]

Sur Louis Lumière : «The camera could only be the creation of a demiurge, at once an inventor and a creator, a scientist and an artist, a businessman and a director [...]. Because Louis Lumière is at once Mozart, Paganini and Stradivarius, he became the father of cinema [...]. If cinema around the world owes its birth and development to him, it is because of the dynamic nature of Louis Lumière's first films, which contain in themselves all the future, the past and the present of cinema, and the perfection of which escapes all space and time [...]. In one hundred years, one thousand years, our descendents will still see them as the latest image of modernity. » [2]

Alice Guy : « The daughter of an editor, I had read a lot and retained a bit. I had done some amateur theatre and thought one could do better. Taking my courage in both hands, I timidly suggested to Gaumont that I might write one or two sketches and have my friends perform them. If they had known how big this business would grow, they would have never allowed me to do it. My youth, my inexperience, my sex, it was all against me. » [3]

Sur Alice Guy : « Alice Guy [...], world's first woman filmmaker. Pioneer? The Larousse dictionary says that is a 'trailblazer in unknown countries'; 'figuratively, a person who prepares the path to success.' That is Alice Guy. She tills the field that others will harvest. She innovates and others collect the glory. She paves the way, but is not crowned with laurels. » [4]

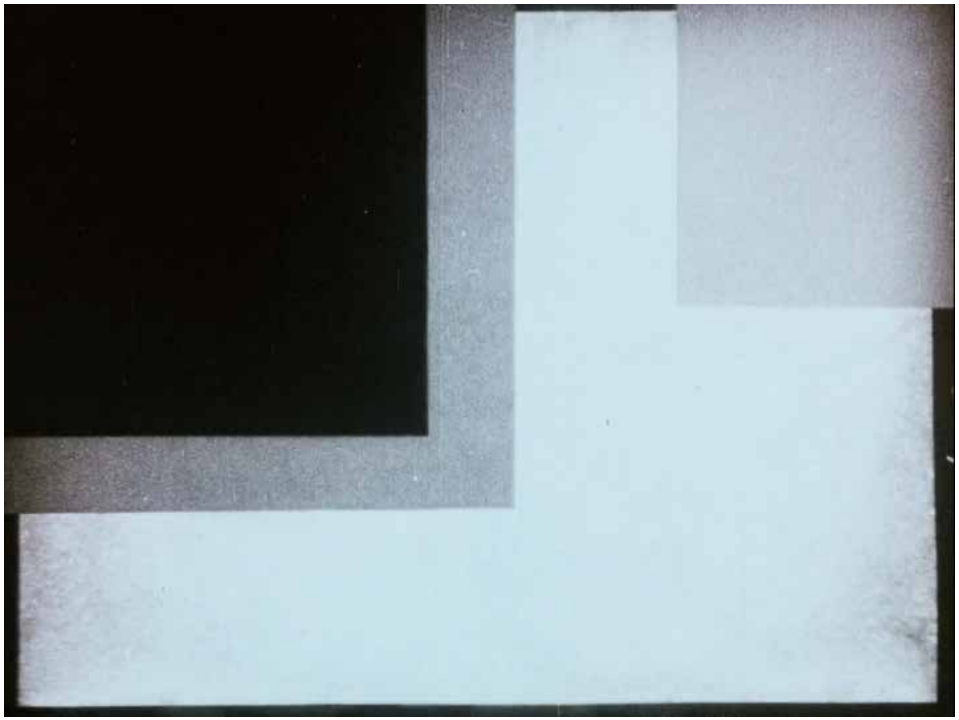
Sur Loïe Fuller et la Danse Serpentine : « [Loïe Fuller] offered sensations previously unknown: movement and light. The dancer [...] is a light that dances, undulates, and moves. » [5]

Loïe Fuller : « When I am finally ready to begin, the first thing to be done, whatever the projector, is to teach the electricians to find their colours and use a follow spot. Then they learn the signals, and the gasman has to learn the right moment to cut the gas , the stagehand has to know when to raise or lower the back curtain, and help me to get back into the wings while giving the audience the impression that I have vanished into thin air. »[6]

1 *Les Frères Lumière et les premières photographies en couleurs,* André Barret, 1989
2 Henri Langlois, *L'Art des Lumière*, in Le Monde, 1970
3 *Alice Guy, Autobiographie d'une pionnière du cinéma* (1873-1968), Paris, Denoël/Gonthier, 1976
4 Claire Clouzot, *Alice Guy, Autobiographie d'une pionnière du cinéma* (1873-1968), 1976

5 Félicien de Ménil, *Histoire de la danse à travers les âges*, 1905
6 By Giovanni Lista, *Loïe Fuller, Danseuse de la Belle Époque*, Paris: Stock-Editions d'Art Somogy, 1994, p. 223

OPUS III



1924, Germany, colour, 35mm, 4 min
Director: Walter Ruttmann

THE FILMMAKER :

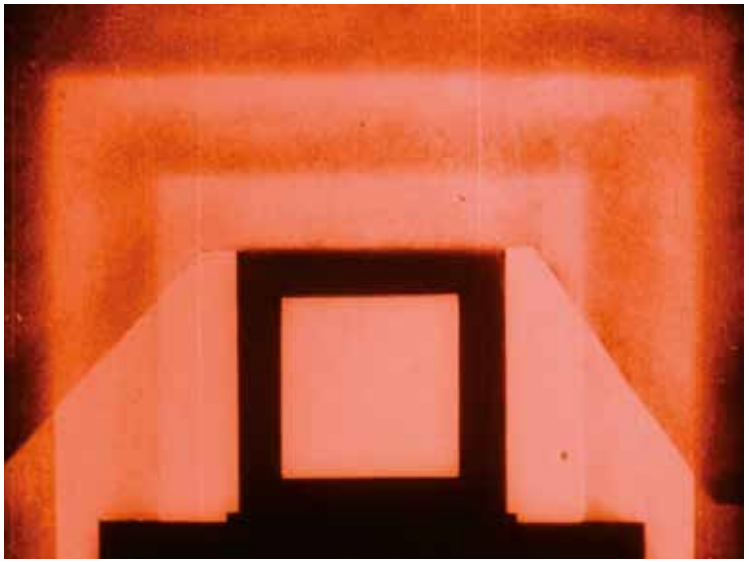
Walter Ruttmann (1887-1941) studied architecture and painting. During his studies he became friends with the German artist Paul Klee, who would become one of the most influential painters of the 2Oth Century. Klee was an accomplished violinist; Ruttmann had played the cello since his childhood. The two artists developed an interest in the relationship between music and sound very early on. They were both interested in how one might create visual equivalents to musical rhythm (see the Context sheet, chapter “Avant-garde in the 1920’s”). The two artists sought answers using the tools of their respective trades: painting for Klee, cinema for Ruttmann. Indeed, Ruttmann did his first abstract paintings in the second half of the 1910’s, but soon understood that his truth path was “painting with time”. He used this concept to create his four Opus films, the first in 1921.

Considered as one of the pioneers of abstract cinema, close to Oskar Fischinger, Viking Eggeling and Hans Richter (respectively, the directors of the 1921 films Diagonasymfonin/Symphonie Diagonale and Rhythmus 21, matrixes for many forms of abstract, graphic and structural cinema), Ruttmann sought to express himself through non-figurative means: pure form, the pace of editing. (See the Glossary: Editing). The movements of a big city inspired him to push farther ahead with his ideas on editing and music. In Berlin: Symphony of a Great City (1927), Ruttmann shows a spring day in Berlin; it is his masterpiece. He sympathised with the Nazi regime and became a cameraman for Leni Riefenstahl; he was wounded on the Russian front in the early 1940’s and died shortly thereafter.

THE FILM :

Walter Ruttmann made four short animated films between 1921 and 1925: the Opus, in which the “characters” are flattened forms – circles, triangles, squares and geometric forms – that appear, exit and move around in the frame, sometimes bumping into one another. In Opus III, Ruttmann mostly uses vertical movements and rectangular or square shapes. The shapes are blue, violet, black or white. During the course of the film, they undergo several transformations. They grow thinner, overlap, lengthen or shrink. When they multiply in layers, they appear to be beaming. When they rise up from the bottom of the frame, they look like buildings going up. About halfway through the film, circular and sinusoidal forms appear and envelop the rectangular figures.

The movements and the geometric forms oscillate between a graceful ballet and the mechanical motions of pistons, pumps and gears. The attraction for modernity (cities, motors) is clear, and it is certainly the visual translation of musical rhythms. Made at a time when films were silent, Opus III was accompanied by musical scores (in particular by composer Hanns Eisler).



Opus III, Walter Ruttmann

Blanc polyphoniquement serti, Paul Klee, 1930 (pen and watercolour on paper, on cardboard)

TECHNICAL AND AESTHETIC RESEARCH :

Opus III is one of a series of four films wherein various experiments of graphic cinema were developed by Ruttmann. For Opus I, he conceived an innovative technique of painting on glass. First, he applied oil paint to small glass rectangles lit from below. The painted shapes, monochromatic, were modified and photographed image by image as adjustments were made between each take. After the first Opus, Ruttmann improved his technique in the following films by combining it with a system of sculptures in plasticine, a kind of modelling putty.

Some of the animated forms in Opus III are sculptures that are easily reshaped or resized, and which Ruttmann moved around using horizontal rods: he could thus turn them gradually between each take, one image at a time (as in animated filmmaking); the volume of the sculptures gives a feeling of depth.

With this film, Ruttmann seems to be able to go from the canvas to the cinema screen, adding dimensionality and a depth effect. This is reminiscent of experiments like those of Dutch artist Piet Mondrian, who, at the same time, was trying to bring painting out of the space imposed by the frame (by putting parts of the painting outside the frame). For Ruttmann, questioning the two-dimensional nature of the cinema screen, shifts research toward the perceived depth of the projected image. The rotation of the sculptures leads to a new form, and Ruttmann photographs it at each move. The lively presence of colours adds a dazzling effect to the abstract character of the film; Ruttmann thought, “colour film will come, and humans, unprepared, are in for a surprise.”

Walter Ruttmann : « I am in love with the flickering muse (cinema], and my fate is that of many a man in love: I do not love her as she is, by as I would wish her. I believe in art in cinema. But I doubt that a cinematic work of art has been made up until now. [...] A work of art [...] will be accomplished if it is made in consideration of the possibilities and exigencies of the cinematic medium.»[1]

Sur Walter Ruttmann : « [It is] a childish pleasure, (the) innocent game with images that avant-garde artists so admired in the early cinema. It is true of Walter Ruttmann’s abstract films [...]. The little circles, little squares, little triangles and little lines in movement do not seek to be any more than they are. What counts is not even the forms, it’s how they enter into play. What fascinates is the pleasure of play. »[2]

1 R. Bruce Elder, *Harmony and Dissent: Film and Avant-Garde Art Movements in the Early 20th Century*, Waterloo, Ontario, Wilfried Laurier University Press, 2008, p. 117

2 Article by Ruud Visschedijk, in *Cinema d’avanguardia in Europa*, Milano, Paolo Bertetto and Sergio Toffetti, Torino, Museo Nazionale del Cinema, 1996

RAINBOW DANCE

1936, United Kingdom, 35mm, colour, 4 min
Filmmaker: Len Lye
Camera: Franck Jones
Dancer: Rupert Doone
Music: Burton Lane composer, Rico's Creole Band
Production: John Grierson
Distribution: GPO Film Unit
Film: Gasparcolor

THE FILMMAKER:

The outstanding artist **Len Lye (1901-1980)** was a poet, sculptor, painter, musician, and director of animated films and documentaries. Born in New Zealand, he left to work in London in 1926. In 1927, he joined the General Post Office Film Unit, where he was part of the team making promotional films. Advertising films as well as clips and commissioned films often provided fields for visual experiments to filmmakers in search of new forms . Working at the GPO, Len Lye had carte blanche to pursue the creative path where he was a pioneer: experimenting directly on the film stock, exploring the feelings aroused by all types of movement (shapes, colours) divorced from narrative intent. In his first years at the GPO, Len Lye developed new ways of making films. He is considered to be the pioneer of direct animation, a technique involving working directly on the film: scratching, painting or printing images on the surface. Dance is one example.

Len Lye moved the United States in 1944. He made films there until the 1960's. Free Radicals is one of his masterpieces: a minimalist scratched film where white shapes seem to simulate an electric, wriggling dance right on the film. He later dedicated himself to painting, music and kinetic sculpture.

THE FILM :

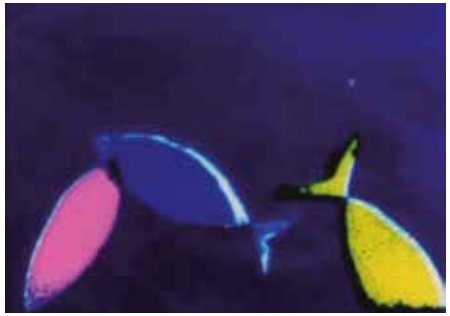
The silhouette of a man in a raincoat carrying an umbrella, standing in the rain. A rainbow appears in the sky, the man closes the umbrella and holds it like a guitar: thus begins a dance with colours that lasts throughout the film. Now dressed to go rambling, the man jumps and hops into other scenes (reminiscent of the dream sequence in Sherlock Junior (1924) where Buster Keaton magically moves from one landscape to another): a mountain range, the sea, a tennis court (see the Glossary: Editing). Against the different backgrounds, the silhouette is transformed, changes colour and leaves a trail of copies behind as it moves. The man plays with geometric shapes and fish that move across the image, he tries to hit circles with his tennis racquet as they change into coins. Surrounded by these coins and the rainbow, the man ends up on his bed. The rainbow and the shapes multiply and pile up on top of one another. Rainbow Dance ends with the Post Office logo, also surrounded by coins and a rainbow: in case we had forgotten, it is an advertisement!

Sherlock Junior, Buster Keaton, 1924

TECHNICAL AND AESTHETIC RESEARCH :

During the 1930's, colour film processes were just emerging, although historians have identified more than 50 colour processes from the 1920's (see the Early Cinema programme, Context sheet, chapter "First Colours"). The most creative filmmakers used different techniques to make colour films, albeit outside the norms of naturalism. In Rainbow Dance, Len Lye uses multiple effects and processes in order to create a film where the events are dictated by the movement – the dance – of colours.

Len Lye filmed with Gasparcolor film stock, which gives results that are not very "natural" and was therefore not used for shooting "real life" scenes; it was preferred by animators. The emulsion (see the Glossary: Film/emulsion) is made up of chemical layers that can be disassociated in order to leave only one colour: only blue, only red, only green, etc. Len Lye uses the specific characteristics of this film to give a monochrome aspect to certain figures, which become spots of colour: the waves and the animated paper fish cut-outs, the dancer's silhouette and head.



Rainbow Dance, Len Lye

It is also possible to use all of the layers of the Gasparcolor film; they add up and mix together, creating a great chromatic variety. This is, for example, how Len Lye created the rainbow of colours: he keeps one movement (for example the character's jump) blue, another is red, another green, etc. By choosing Gasparcolor film, Len Lye asserted the non-realist, dreamlike and playful nature of his film. Len Lye defined Rainbow Dance as a "scenario of colour". Colour is truly a character in the film, and underscores the idea of travel, varied landscapes, the transformation of places.

Some of the sequences in Rainbow Dance were made directly on the film (see the Glossary: Direct animation). The technique involves using the film stock as a medium to paint or draw on or scratch (see the Glossary: Film/emulsion). For example, the rain at the beginning of the film is painted on each image, over what had been filmed (it was not raining when the scene was filmed and the character opens his umbrella).

The stars that cause the dancer to disappear were made by scratching layers of emulsion directly on the film. The scratching technique uses a quill or a sharply pointed stylus like a pencil to score the emulsion, creating images over those recorded on the film. Unlike drawing or painting, which adds to the whole, scratching removes matter, subtracts. When matter is removed, the light of the projector passes through the scratched areas, which then appear white on the screen. The scratched areas can also be coloured in rather than left to appear white when projected.

By multiplying techniques and effects, Len Lye made a film-collage where not only shapes and colours but also the very materiel of the film dance together, in the "free use of cinematic means of expression", as filmmaker Hans Richter write (see the sheet on Ghosts Before Breakfast).

Len Lye : «Since we are capable of composing music, it should be possible to compose movement. After all, there are melodic figures, why not figures of movement?»

Sur Len Lye : « Len Lye's films are a rhythmic shimmer, around which music floats, creating an illusion: here the mix is so narrow and deep that the sound and the image are inseparable, with humour and irony providing counterpoint. »

CAT LISTENING TO MUSIC

1990, France, colour, video, 3 min
Filmmaker: Chris Marker
Music: Pájaro Triste by the Catalan musician Federico Mompou (1914)

THE FILMMAKER :

Chris Marker (1921-2012)) is one of the most eclectic individuals of French cinema. A filmmaker, journalist, essayist, translator, illustrator, poet, and photographer, Marker constantly sought to open new artistic dimensions by combining different arts. One of the fundamental films in his body of work, La Jetée/The Pier (1962), tells a futuristic tale using mainly photographs. Marker made several "film-essays", a form that is more introspective and personal than a documentary, where he expresses his own thought in voice-over. This cinematic form enabled Marker to express himself in the first person. The editing of these films brings disparate images into proximity, according to the logic of free association. A tireless globetrotter, Marker recounts his travels and encounters with other cultures in several of the film-essays: Sunday in Peking (1956), Letter from Siberia (1958), Cuba si (1962), Sunless (1982 – Japan and other countries).

The political context of the 1960's brought about a turning point in his work. While it remained personal, it also expressed his political engagement. Marker was one of the founders of the Groupes Medvedkine, dedicated to political cinema, active in France between 1967 and 1974, relying on the mutual support of filmmakers (Jean-Luc Godard, Juliet Berto, Joris Ivens, etc.) and workers in Sochaux factory in Besançon, who stood in direct opposition to the French industrialists and government. In this period, he made some of the most remarkable films of the activist cinema canon, including Le Fond de l'air est rouge/A Grin Without a Cat (1978). This majestic depiction of ten years of protest movement is a "montage film": it is made up only of pre-existing archival material. For Marker, as for many documentary filmmakers, the montage film releases content from its source, takes it up and freely rearranges it in order to create another work. (Avant-garde filmmakers also used this technique: "found footage" used to create a non-narrative film, on the border between cinema and fine arts). Marker's work thus demonstrates his deep interest in images and the way they can be edited and analysed.

Beginning in the 1980's, Marker began looking into new technologies. Video and computer sciences were fertile fields to cultivate, in films (in Level Five – 1997 – he used electronic images) as well as in multimedia installations or in the virtual universe of Second Life. Marker used new tools in his artistic creations, but his focus remained the same: introspection, memory, activism, and the endless craving to discover new places.

THE FILM :

Cat Listening to Music is part of Zapping Zone, a big multimedia installation commissioned by the Centre Georges-Pompidou in Paris. In a completely black space inside the Centre, Marker scattered screens that displayed photographs, excerpts of his films, and television programmes. Bestiary is a set of three short films, including Cat Listening to Music. Marker filmed his cat, "Guillaume-en-Egypte". Guillaume naps, then looks into the camera eye, likely surprised (or awakened?) by its presence; he falls back asleep. Stretched out on a DXV keyboard, he listens to a piano piece inspired by a sad bird (pájaro). Filmed in close-up, the cat's ears and paws sometimes react to the music. It is a recording: Marker makes it clear that no one is playing the piano where his cat is sleeping; a shot of the speaker suggests the source of the music. Cassettes and a CD are sitting on the keyboard as well as a photo of the cat. This image of the cat like a reflection sows some confusion: are we looking at the cat or the image of the cat?

Cat listening to music, Chris Marker

TECHNICAL AND AESTHETIC RESEARCH :

This small, very personal film, where we are introduced to Chris Marker's cat, extends the intimacy to the editing room (see Glossary: Editing). What impressions or feelings can be produced by working on the transition from one shot to another? Guillaume-en-Egypte is an "edit cat", because (as film critic Jean-André Fieschi noted) his image is divided into "twenty-five discontinuous fragments of cat". Indeed, we only see the whole cat once, the rest of the frames are either close-ups or extreme close-ups. We watch each micro-movement of the cat: his ears and his paws move ever so slightly, his eyes are half open. Marker give us the impression of entering the "secret" world of his cat, and yet there is no assurance that the protagonist is listening to the same music as the viewer; he may not be listening to anything at all. The composition Pájaro triste is played straight through, but the body and the movements of the cat are fragmented. That means that the music could have been selected and added to the images after filming. The fragmentation of Guillaume's movements leads us to suspect that the order of events shown in the film (the cat sleeps, wakes, and falls asleep again) was chosen by Marker. The film lasts three minutes, but we have no way of knowing how long it took to record: the magic of editing.

Guillaume-en-Egypte

Chris Marker (on Guillaume-En-Egypte) : « He was my close, constant companion, and the only person I accepted in my presence when I was editing. I could see by the way he pointed his ears whether or not he agreed with what I was doing.»

On Chris Marker : « According to our way of seeing things, reality alters. It is our gaze, our point of view that gives meaning to the world! [...] All of the images that Chris films, he organises them, puts them together with other images, [...], sound, trying out surprising associations, but always with the idea of inviting the viewer to question his own way of seeing. He doesn't tell stories in the same was as everyone else: he makes films the way we think.»[1]

1 Bartlomiej Woznica, Anastassia Elias, *Chris Marker, Le Cinéma et le monde,* Paris, Éditions À dos d'âne, 2018

RHUS TYPHINA

2014, Armenia, Czech Republic, b/w, 16 mm, 2 min 50
Direction, photography and editing: Georgy Bagdasarov and Alexandra Moralesovà

THE FILMMAKERS :

Born in Kazakhstan in an Armenian family, **Georgy Bagdasarov** has lived and worked in Prague since 2005. He trained in composition at the Moscow Academy of Music. Currently he plays the saxophone, the guitar and turntables. He regularly works with other musicians and performers on projects that cover a wide range of musical practices.

Alexandra Moralesovà: From Argentina and the Czech Republic, Alexandra Moralesovà lives and works in Prague. She is interested in different analogue practices, including restoration of found film. With Georgy Bagdasarov, she founded LaboDoble, and independent laboratory (see the Context sheet) that also serves the distribution of experimental films and teaching programmes on the subject.

THE FILM :

The title of the film appears over a shot of a slightly trembling bush. It is the beginning of a film and also the beginning of the search for, the harvesting and the preparation of the plant that gives it its name: the staghorn sumac, a common shrub with red twigs covered in velvety hairs. Rhus typhina is the scientific name. A woman and a man walk in the forest, we only see their shadows; we guess that they are the filmmakers because the woman has a camera in her hand. The sound of their footsteps and the occasional buzzing of an insect blend with the sounds of rustling, perhaps the filmmakers' hands brushing against leaves. Throughout the film, there are recurrent shots of hands. At first, the fingers slip over the eaves and berries; touch them, then pick them. The sequences are very short, sometimes less than one second. Other quick glimpses reveal an abandoned glasshouse, a chair, a cat slipping through the grass, a bumblebee, and books. On the pages, we can make out text, we see that they are scientific, with chemical formulas; we also see illustrations, they are illustrations from an herbarium, drawings of men and women gathering and tending plants, devices for circulating fluids. This fleeting vision prefigures the end of the film, which shows the preparation of an infusion using Rhus typhina. The very short takes finally reveal a bowl containing the harvested leaves and a hand pouring liquid in. The leaves are mixed into the liquid, then we see a jar. On the label, the name of the preparation: "Rhus Typhina".

TECHNICAL AND AESTHETIC RESEARCH :

The film was made using in-camera editing (see the sheet on Notes on the Circus, made with the same technique). As editing is done directly in the camera, the filmmakers can have very short sequences that would be nearly impossible to achieve with a traditional technique (see the Glossary: Editing). In-camera editing also enables special effects during the filming: for example superimposition. Superimposition is a method that consists of imposing, i.e. recording two or more images on the same frame of film. The result is a multiple image, the result of the overlay.

This technique is used more for its sensory than narrative effect here. Indeed, the superimposition and very short sequences immerse the viewer in a sensitive environment where impressions bubble up. The repeated views of the hands, as well as the proximity (visual and auditory) of the plants recreate the filmmakers' experience. Added after filming, the sound envelops the viewer in a world where knowledge comes from sight and contact, the friction of elements and matter. Through the shaky images, we walk along with the filmmakers at their hesitant pace: we feel like we are participating in their quest.

Another element contributes to this feeling of a quest: the non-linear construction of the film.

The story of Rhus Typhina progresses in fits and starts, the filmmakers reveal the reason for their walk as the film advances.

Rhus Typhina, Georgy Bagdasarov and Alexandra Moralesovà

Rhus Typhina is a contemporary film about a plant that is remarkable for its crimson berries: why film it in black and white? The answer is related to the chemical characteristics of Rhus typhina considered in regard to film development (see the Glossary: Film/emulsion and Development). The film is a tribute to the plant, as it exists thanks to the use of chemicals extracted from it. To develop the negative of their film (which they did manually), the filmmakers mixed components of Rhus typhina with non-toxic chemical baths, including basic ingredients such as sodium carbonate (washing soda, used in eco-friendly cleaning products). The film is not only the story of the plant, but also the preparation of a new chemical mixture made possible by the plant, which in turn makes the film itself visible.

Indeed, when film is used to record images, those images are "latent" on the medium, i.e. they are not yet visible. The film must be developed before the images can be seen. Film development mainly uses two chemical baths: the developer and the fixer. The film is first immersed in the developer, and the images appear (they are no longer latent). The film is rinsed, then immersed in the fixer bath, which stops development and prevents the film from becoming to dark or over-contrasted.

For environmental reasons or because the chemical products have become hard to find, many independent laboratories are turning to nature to find chemicals to develop film: Rhus typhina can serve this purpose.

Georgy Bagdasarov and Alexandra Moralesovà : « We tried to apply the properties of Rhus typhina to photochemisty. The film is a record of the research, experimentation, harvest and preparation of the developer that the original negative was bathed in. The non-linear structure of the chemical formula as well as nonlinear research of the process are reflected in the order of the frames. »

WHILE DARWIN SLEEPS

2004, United Kingdom, colour, digital photography on 35 mm, DCP, 5 min
Direction, photography and editing: Paul Bush
Sound: Andy Cowton
Production: Ancient Mariner

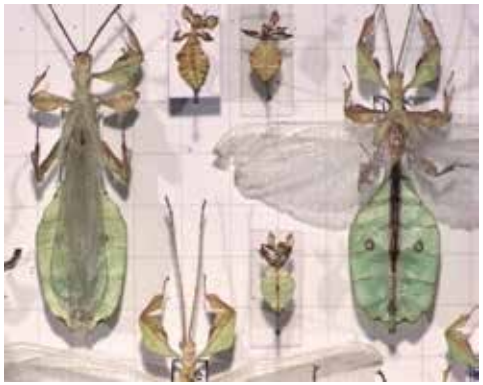
THE FILMMAKER :

Filmmaker and professor of cinema studies, **Paul Bush (1956)** lives and works in London. He has made many short and medium-length films that are shown in theatres and museums. In 1996, he founded his own production company, Ancient Mariner, for the production of his films and advertisements. In 2012, he made his first feature-length film, Babeldom, a science-fiction documentary that depicts the city of the future in a hallucinatory portrait.

THE FILM :

While Darwin Sleeps is inspired by the insect collection at the Natural History Museum in Lucerne, Switzerland. The collection holds more than 250,000 specimens: colourful butterflies, dragonflies, giant beetles, and crickets. At the beginning of the film, the voice of a museum guide accompanies the images: he speaks of certain species and their characteristics. As we hear his comments, still frames show different insects. These first segments last just a moment, the following frames appear for increasingly short spans: each of the insects is framed for a fraction of a second. As the rhythm accelerates, the guide's voice grows faint and vanishes, and the film takes on an air of fantasy: we hear a vibrating sound that is reminiscent of buzzing or beating wings. More than 3,000 specimens of insects appear on the screen, first on a board (as though the camera was panning across), then one insect takes the place of another (as if each of the insects, centred in the frame, disappeared to be replaced by the next one).

The specimens go by so quickly that it is impossible to distinguish them. The viewer has the impression of the metamorphosis of a single insect for each of the species. Hundreds of beetles, butterflies and midges melt into one another, grow, change colour, change wings; legs and antennae sprout or disappear. The rapid succession of insects creates a kind of sparkle, the flickering of animals appearing in coloured flashes. The same visual effect of flickering (see the Glossary: Flickering) is found in another film in the programme: Impressions From the Upper Atmosphere, by José Antonio Sistiaga. In both films, each image arrives with a start and surprise for the viewer!



While Darwin Sleeps, Paul Bush

TECHNICAL AND AESTHETIC RESEARCH :

While Darwin Sleeps was made using pixilation (a kind of stop motion or frame-by-frame technique).

This animation technique makes use of the illusion of movement (see the sheet on Impressions From the Upper Atmosphere). In a succession of photographs, the same object (or less frequently a real live actor) is shifted very slightly. The images can be recorded with a cinema camera or still camera. Once the images are set in motion in the projector, the series of still images gives the impression that the object is animated, that it moves on its own.

In the case of While Darwin Sleeps, it is not the movement or shifting of one single insect that interests the filmmaker. Paul Bush's work explores the theme of metamorphosis (see the sheet on Serpentine Dances). He achieves this by filming several thousand specimens successively. He takes a photo of an insect, than another of a second insect from the same family, on the same background, then repeats the process with a third, fourth and so on. This requires meticulous effort, selection and classification, as Bush had to consider the metamorphosis and movement of 3,500 specimens. To create the impression of insects in flight, for example he had to select hundreds of midges, decide upon the order in which to photograph them so that the wings would appear to be beating, then photograph them one by one. Using pixilation, Paul Bush "reanimates" thousands of insects under glass in the Natural History Museum's collection. In mastering this animation technique, Bush creates a highly poetical work. For an instant, the viewer seems to observe the history of evolution unfurling before his eyes; the insects, from different eras and different parts of the world crawl, fly and escape from their traps.

Paul Bush : « I make films because of the last film I made, and the film before that. It is important for students to understand that when they start out it is very difficult, it was for me too. But as you make more and more films, the easier it is to have ideas and to understand what is interesting, what to put aside and what to explore. »[1]

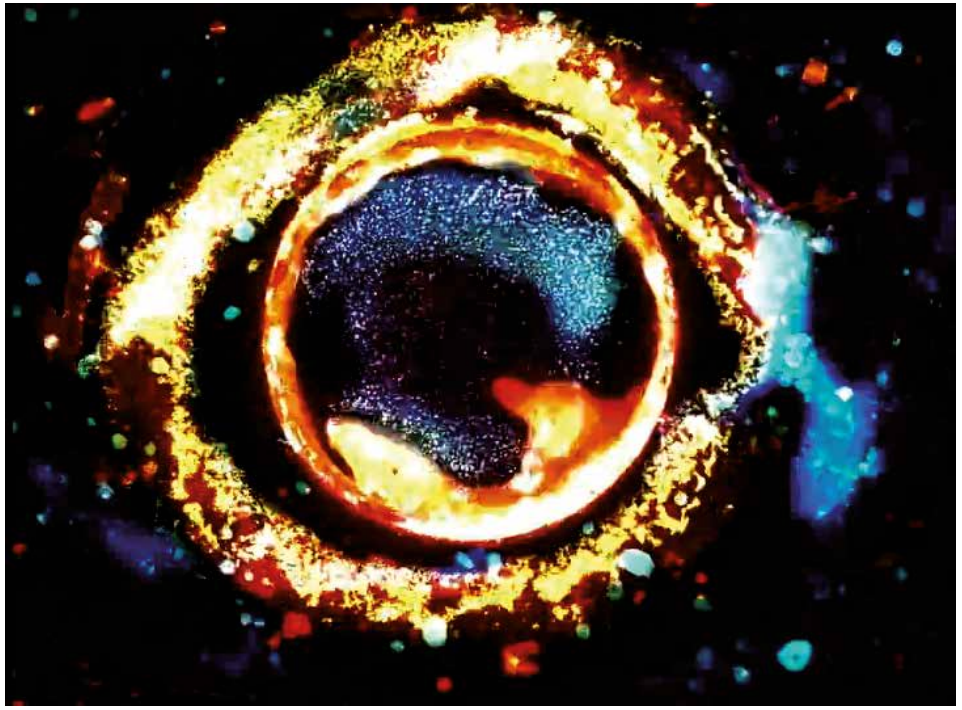
Sur *While Darwin Sleeps* : «The experience of the work is at once marvellous and monstrous; a sort of gothic natural history where the artist is the sorcerer's apprentice, desacralizing the museum space.»[2]

Butterflies, Emile Deyrolle, 1870 ca. (didactic board for schools)

1 Interview with Paul Bush at the invitation of la Poudrière de Valence (France), https://www.youtube.com/watch?v=oXY-73WkQyA

2 Alistair Robinson, Director of the Northern Gallery for Contemporary Arts of Sunderland, U.K.

IMPRESSIONS FROM THE UPPER ATMOSPHERE



1988, Basque Country, 35 mm (painted on 70mm IMAX film), colour, 7 min, 1.37
Filmmaker: José Antonio Sistiaga
Sound: Waslaw S. Beklemicheff
Irrintzi (voice): Benat Achiari
Dedicated to Vincent Van Gogh

THE FILMMAKER :

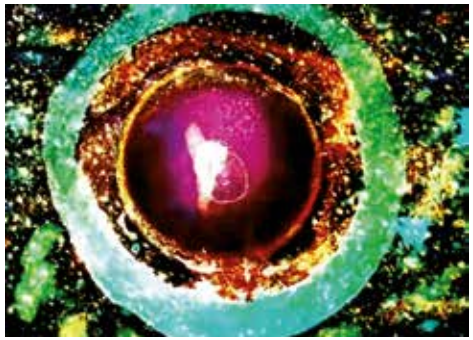
José Antonio Sistiaga, born in the Basque Country in 1932, is a painter by training. His artistic path took two sharps turns. The first occurred when he discovered the work of the Russian painter Vassily Kandinsky (1866-1944). Kandinsky sought to engage with the viewer by way of sensations: The painter felt that colour has " a purely physical effect on the eye […] But this effect can be much deeper and causes an emotion and a vibration of the soul […] colour touches the soul itself." (1911, Concerning the Spiritual in Art). Kandinsky used abstract shapes and colours rather than recognisable figurative forms. The second turn dates from the early 1960's, when Sistiaga felt the need to "paint in a different dimension": and he encountered the cinema.

Sistiaga had already begun seeking to express movement in his painting. He questioned the static nature of painting with spots and splashes of colour, linear drips. His large format paintings were often made in constant movement, quickly, and show the brushstrokes and the substance of the paint. Through their technique and gestures, Sistiaga's films are a continuation of his painting.

THE FILM :

Impressions From the Upper Atmosphere presents the evolution of a coloured circle on a black background. Colourful dots surround it, lines mask it and bump into its outline. The colours of the circle's contour intensify and it changes size. Inside the circle, spots move about, like islands or continents that cannot stay still or hold a single shape. The fast-moving agitation of the matter and the title of the film suggest that the circular form is a heavenly body, radiating all sorts of impressions. The filmmakers son, Waslaw, composed the organ music; a vibrating score that grows progressively louder and evokes cosmic sonority. At the end of the film, we hear the irrintzi, the cry that Basque shepherds use to warn of danger or express joy.

Squares and concentric circles, Vassily Kandinsky, 1913



Impressions From the Upper Atmosphere, José Antonio Sistiaga

TECHNICAL AND AESTHETIC RESEARCH :

José Antonio Sistiaga made Impressions From the Upper Atmosphere, like his other films, without a camera, but by painting directly on each photogram (10,080 for Impressions – a year's work for an 8-minute film – see the Glossary: Direct animation). As of today, Sistiaga holds the record for the longest film entirely hand-painted: Ere erera baleibu izik subua aruaren (1968-1970, 75'). Most of the films made this way use transparent 16 or 35mm film. Sistiaga was able to acquire transparent 70mm film, which is larger and thus easier to work with, although it is much smaller than his canvases. The 70mm format, which is quite expensive, is usually reserved for major productions: Ben Hur (William Wyler, 1959), Lawrence of Arabia (David Lean, 1962), Playtime (Jacques Tati, 1967), Derzu Uzala (Akira Kuruzawa, 1975), Little Buddha (Bernardo Bertolucci, 1993), etc. For his film, Sistiaga used brushes, inks (that he made himself, so they would be as transparent as possible) and other accessories (a toilet paper tube to get a perfect circle on each of the photograms). To produce the effect vibrating matter, Sistiaga did not completely respect the rules for creating the illusion of movement, according to which each photogram should differ from the previous one almost imperceptibly. It is well known that the illusion (or impression) of movement is one of the basic principles of cinema. A camera does not record movement, but a succession of still images that are broken into 24 images per second. When projected, the rapid succession of images one after the other gives the impression of movement (see the Glossary: Flicker). In Sistiaga's work, the dots, spots and the circle are painted "more or less" on the same place. This imprecision creates a movement that is less fluid, more random, and the result is the impression of vibrating elements.

The cosmic feel of the film also comes from the black background, which seems to pull us into a far-off space. The background could have been made by painting black outlines around the shapes on each transparent frame, but that would have been complex. . Sistiaga instead used a reaction that is specific to film development: the inversion of colours that takes place when the copy is printed, and the negative becomes positive. He painted on a transparent film (which becomes black when the positive print is made) using complementary colours that would become the colours he actually wanted: violet for yellow, blue for orange, etc. (see the Glossary: Development). Once it is painted, Sistiaga's film is like film that has just come out of the camera: like a negative, in fact, in that the colours are the inverse of what the filmmaker wants to show viewers.

A further complication is that the original film is very thick because of the coats of paint, and cannot be projected as is. It must be recopied on new film stock that will record the artist's work. In order to copy the painted film, it is placed in a printing machine (see the Glossary: Optical printer) The machine can handle very thick films (coated with paint, ink or even glued items). The printer reproduces (makes a print) of the thick film on blank film that can then be loaded into a projector. Because the film is treated like a negative to be transformed into a positive print, the colours on the original film are inversed on the (positive) projection copy and the background appear back (and not transparent). Sistiaga created his film in consideration of the specificities of the colours (as a painter would) as well as the technical and chemical possibilities of cinema.

José Antonio Sistiaga : « I address the senses, the curiosity and the emotions of viewers, the secrets they hold inside. Take the blindfold of rationality off your eyes and enjoy the unknown »

On José Antonio Sistiaga : « Sistiaga uses the cinematographic experience to shake up the viewer's senses, to carry us in and out of our mind. He brings the natural world, which is in constant motion, into the inside world of the theatre. There, nature's light is abstract, reorganised and subject to the in determination of choice and chance. »[1]

1 Gregory Zinman, *Making Images Move: Handmade Cinema and the Other Arts*, University of California Press, 2020

THE GROWTH OF PLANTS

1929, France, 35 mm, b/w, 11 min
Direction, photography and editing: Jean Comandon
Production: Institut Pasteur

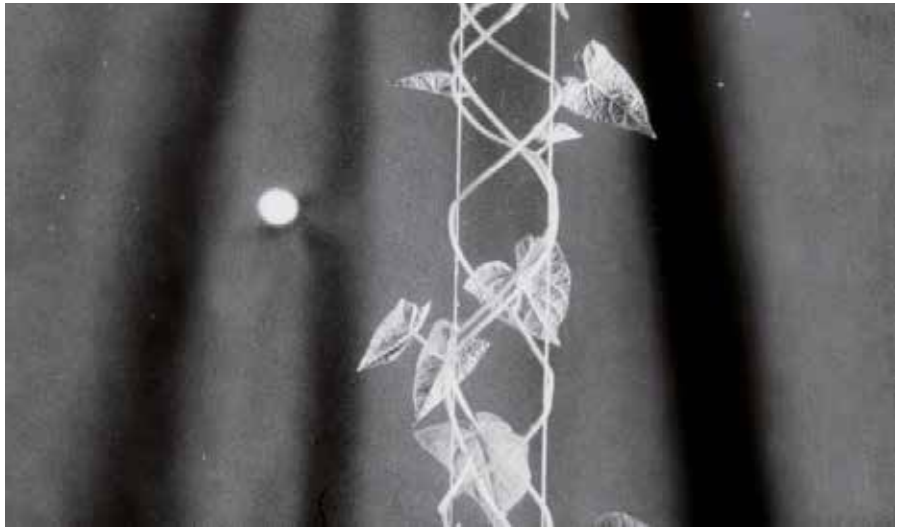
THE FILMMAKER :

A young, brilliant doctoral student in medicine, **Jean Comandon (1877-1970)** became interested in the photography of microorganisms from a very early age. At the beginning of the 20th Century, this technique was still extremely new. Passionate about the infinitely small, Comandon invented ever more successful techniques to go deeper into his research. Leading 19th Century scientists had already used a camera with a microscope. Micro cinematography was the brainchild of Étienne-Jules Marey, a French physiologist, inventor of chronophotography and pioneer of cinematography (see the programme on Early Cinema, Context sheet, chapter “Beginnings of Cinematography”): science and cinema have often advanced together. As early as 1910, scientific films were very popular; in France, the series Scientia was produced by Éclair. Producer Charles Pathé (see the programme on Early Cinema, Context sheet, chapter “First filmmakers”), intrigued by the possibilities of this new field of knowledge, hired Comandon to work in his company’s scientific division. In the new laboratory, Comandon had the means to perfect the devices that could film microorganisms. Following the screening of his microscopic films at the l’Académie des sciences, the newspaper Le Matin headlined: “The Invisible is Now on Film” (27 October 1909).

At Pathé productions, Jean Comandon created an impressive series of microscopic and popular science films (often used in schools). The subjects covered the whole medical field; Comandon made films about health and prevention (especially after the First World War, on the dangers of alcoholism, syphilis, etc.), bacteriology and physiology (Formation de cristaux aux dépens d’unprécipité amorphe – “Formation of crystals at the expense of amorphous precipitate” –, 1937), and surgical techniques (Cinématographie radioscopique – Radioscopic cinema –, 1911), etc.

The Flying Gull, Étienne-Jules Marey, 1887 (chronophotography)
Succession of photographs allowing a chronological breakdown of the phases of the flight of a bird

In 1926, Comandon was appointed director of the Biology and Scientific Cinema Laboratory funded by Albert Khan, a wealthy sponsor at the head of a mammoth project to capture the whole world in images: “Archive of the Planet”. In his new position, Comandon extended his field of research; The Growth of Plants was part of his new work.



The Growth of Plants, Jean Comandon

THE FILM :

The Growth of Plants is the equivalent of an herbarium for the cinema. In the film, several scenes in succession show the evolution of species of plants. Using his “dark-field microscope”, a micro-cinematographic system that he developed in 1909, Comandon frames the blossom of a dandelion, the flowering or vibration of climbing plants that twine around specific supports (a stake, a glass slide). The plants move at an unreal speed, their evolution revealed before our eyes. Thus, the dandelion blossoms in just a few seconds; plants wrap around stakes like acrobats at the circus. At the beginning of the 20th Century, no one had ever seen anything like it! Thus, scientific films shed a new light on reality, by the use of the tools of cinematography, just as the work of experimental filmmakers did.

TECHNICAL AND AESTHETIC RESEARCH :

In The Growth of Plants, all of the subjects (plants, leaves, flowers) move at a speed that is faster than real life. In order to achieve this acceleration of movement, Jean Comandon had to adjust the speed of shooting. In cinema, a smooth movement is generally obtained by filming 24 frames per second and projecting at the same speed. When the image is projected at a slower speed (10 per second, for example), the movement appears slower. Comandon did not film plants at the normal speed: the camera he used enabled him to record a series of images at regular intervals established in advance; for the dandelion, one image every 120 seconds. By combining the two techniques – slower projection and the very slow rate of image capture – the movement is hundreds of times as fast and we are able to see phenomena that we could not otherwise discern because they are too slow.

Speeded up, the micro-movements of plants become visible and prove to be extraordinary in their elegance. Flower petals opening recall a ballet of sails, or a costume for a serpentine dance (see the sheet on Serpentine dances). When plants twist and reach for a stake to climb up, the pumpkin tendrils seem to be performing an acrobatic balancing act. The shots of the clock face serve two purposes. On the one hand, Comandon establishes the acceleration of speed. On the other, the choice of deregulating the movements of a domestic object enables the filmmaker to conjure up the powerful “magic” of scientific cinema. The clock also helps the scientist study the growth of the plant subjects over time. In the same way, the randomly perceptible white spot tells us if the image was recorded in the daytime (natural light filters through the hole) or at night (no white spot is visible on the image).

Jean Comandon : « We see neither the bullet exiting the gun, nor the growth of a plant [...]. By modifying the shooting rate, we modify the apparent speed of movement upon projection. Without changing the visual field, the same event can be stretched or condensed at will; we are the masters of time. »

On Jean Comandon : « By giving visibility to the movement of plants, Comandon erases the border between kingdoms, introducing a confusion between plants, animals and humans that [...] sends us back to Ovidian intimations of a world made of violent metamorphoses. »[1]

1 Philippe-Alain Michaud, « *Croissance des végétaux (*1929). La Melencolia de Jean Comandon », 1895, Revue d’histoire du cinéma, 1995

VIRTUOS VIRTUELL

2013, Germany, b/w, 35 mm, 7 min
Filmmakers: Maja Oschmann and Thomas Stellmach
Drawings, storyboard, image choreography, ink animation, graphic composition: Maja Oschmann
Production, project idea, scenario, editing, stereoscope, ink animation, technical direction: Thomas Stellmach
Music: Overture of the opera, The Alchemist, by Louis Spohr (1830)
Final credits music: Till Mertens

THE FILMMAKERS :

Maja Oschmann (1975) does not work mainly in film, but has a visual arts background. The visualisation of sounds plays an important role in her graphic work. She created the series of Bildklang (Picturesound) drawings; a series of ink drawings (similar to her work for Virtuos Virtuell), inspired by the music of Arvo Pärt, Spiegel im Spiegel (2004), among others.

Thomas Stellmach (1965) has made more narrative animation films than abstract experimental films. A student of the Dutch animated filmmaker Paul Driessen, Stellmach was recognized for his work on the 1996 animated film Quest, by Tyron Montgomery, which won the Academy Award for Best Animated Short Film.

THE FILM :

At the beginning of Virtuos Virtuell, two spots of ink drop onto a completely white background. Two lines emerge from these spots: one thick the other thin. The lines evolve as they follow the inflections of the music: the first grows and thickens when the string section plays deep tones; the second rises when the higher pitch of the flutes responds. Thus, the film introduces its “characters”: two lines of different thickness, each with its own personality, that continuously chase, challenge and run from each other, making the white space progressively blacker as they move across it. .

Virtuos Virtuell, Maja Oschmann et Thomas Stellmach

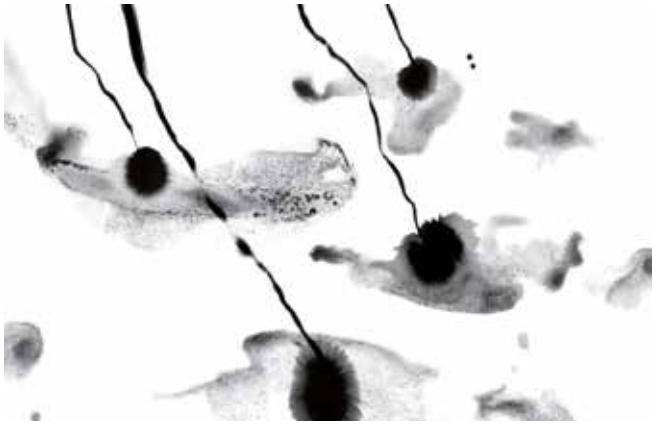
Virtuos Virtuell is the surprising choreography of two back lines; the speed of movement, the jumps, fades and figures are created and guided by the music and its variations. The film is an extension of the ambition of some earlier filmmakers who, starting in the 1920's, tried to create a link between the emotions stirred by music and abstract animation. This approach found its roots in avant-garde films like Studie 7 by Oskar Fischinger (1930), music by Brahm; Barcarole by Rudolf Pfenninger (1932), music by Offenbach; A Colour Box by Len Lye (1935) music by Don Barreto; Begone Dull Care by Norman McLaren (1958), music by Oscar Peterson, and others. Inspired by the overture to The Alchemist by the German Romantic composer Louis Spohr (1784-1859), the filmmakers imagined lines chasing each other and creating ever-changing shapes that are reminiscent of the branched of a tree, a flowering plant, or droplets in a stream.

TECHNICAL AND AESTHETIC RESEARCH :

Thomas Stellmach created the story of Virtuos Virtuell after a detailed analysis of the musical structure of the opera by Louis Spohr. Techniques of musical visualisation were used to achieve synchronicity with the overture of The Alchemist. A computer programme transposed the music into frequencies, i.e. sound waves. Maja Oschmann created her images by looking at these sounds represented by wavy lines and listening to the music.

Three methods were used for applying the paint: 1. Ink applied to dry or wet paper with brushes, quills, sometimes through blotting or blowing with compressed air to spread the ink; 2. Ink poured or sprayed on bowls of water, where it disperses; 3. Ink left to run on a vertical glass plate.

Each of these applications of colour was filmed with a digital camera. In order to catch the movements of the ink, the camera was set up: overhead, when filming the colour spreading on paper or in the bowl of water; from the front, when filming the colour running on the glass plate set over a lit screen. Depending on the distance from the ink tracks, the camera may show the details of a given movement (and the effects of the ink matter). In this way, we have a very close view of something that looks like a gesture of fear or apprehension experienced by a shape; in a narrative film this would be a close-up of a character's face to capture her emotions. In the different framing choices, there is experimentation in the representation of a variety of emotions. In the close shots, we also see the performance of the blots left by the moving lines: they spread in fissures, they reveal the imperceptible reactions of paint that comes into contact with water, drawing the viewer into an abstract, poetical universe.



Virtuos Virtuell, Maja Oschmann and Thomas Stellmach

Thomas Stellmach : « When I heard Louis Spohr's music, I felt someone's sadness. That was the idea, the black ink line, the "protagonist", has to be sad. The other "character" would be nearby so that, when the music feels dangerous, disturbing or disquieting, the sadness turn into fear, for example.»

« We were not necessarily looking for the best image, but one that contained flaws. We wanted the ink to behave like a human being.»

On *Virtuos Virtuell* : «Virtuos Virtuell combines the delicate and dramatic movements of real ink with stereoscopic digital animation. It is a masterpiece of abstract visual music.

"Virtuos Virtuell leads the eye and the ear in a dance, brings the two senses together in mutual support. In this way, the images become audible and the music becomes visible.»[1]

1 Stefanie Schlüter, Deutsches Filminstitut, 2015

NOTES ON THE CIRCUS

1966, États-Unis, 16 mm, couleur, 12 min
Réalisation, image et montage : Jonas Mekas
Musique : Jim Kweskin & the Jug Band, orchestre Hillbilly
Pellicule : Ektachrome

THE FILMMAKER :

Jonas Mekas (1922-2019) was a filmmaker, poet and critic from Lithuania. He discovered cinema in the United States, where he was forced into exile at age 20. His work is intimately linked to his experience of exile: it was difficult to share his Lithuanian past in New York, so he turned to autobiography in his films. Throughout his life, he carried a film camera, then a video camera to record moments of daily life that he put together in Diaries.

When Mekas began filming, at the end of the 1940's, new techniques made his project possible. Like other filmmakers of his generation, Mekas seized the opportunity presented by less expensive, easy to use cameras. Settling in New York, he purchased a Bolex 16mm camera. The Bolex is a light camera that enables multiple effects: changing speeds, image-by-image shooting, lighting variations, superimposition, quick lens changes, etc. Mekas' films celebrate what he called "glimpses of beauty" in life: travel, landscapes, work, meeting people at a concert or while on a walk, friends. Speaking of Reminiscences of a Journey to Lithuania (1971-72), which records his return to Lithuania to see his mother more than 20 years after his departure, Mekas summed up his relationship to creation: "For a large part of the film, I speak of myself as a 'displaced person', my relationship with Home, Memory, Culture, Roots, Childhood."

With an impressive number of films to his name, Mekas is a leading figure in the underground film movement: non-professional cinema, using no crew or scenario, given over to more personal content and forms. Co-founder (with Stan Brakhage) of the Film-Makers' Cooperative, the world's first organisation for the distribution of experimental cinema (see Context, page 6), Mekas worked his whole life for recognition of independent filmmaking.

THE FILM :

Jonas Mekas' "notes" take the form of discontinuous, spontaneous visual fragments that do not make up a story, but are more like notes made in the first person. Notes on the Circus is one such spare annotation. During and evening spent at the Ringling Brothers Circus, Mekas filmed the numbers as they were performed: acrobats, animals crossing the circus ring, hoops of fire, the clown. The film recreates his enchantment as he sat among the spectators.

Notes on the Circus was made in 1966. Three years later, Mekas added it to several dozen other reels that he had filmed between 1964 and 1968. The result – Walden (Diaries, Notes and Sketches) – inaugurated and popularised diary film, a form that Mekas is credited

with creating. Walden assembles disparate notes: Jonas' brother's wedding and images of Chinese New Year, Stan Brakhage playing with his children, Jonas cuts his hair. Poetical and intimate, these moments, despite the very different content, are joined by two things: the desire to record the filmmaker's authentic experience, and the way they use the cinematic practice

Notes on the Circus, Jonas Mekas

TECHNICAL AND AESTHETIC RESEARCH :

Mekas filmed with a 16mm Bolex camera that could only hold a 30-metre reel (or about three minutes at 24 images per second). The mechanical camera was not battery-powered, but had to be wound up like an alarm clock about every 30 seconds; only a few dozen seconds could be filmed continuously. Mekas played off that constraint and made it a mark of his filmmaking. Very short shots fragment the attractions and the movements of circus performers and animals. Mekas used the shutter release like a trigger. The shots that follow one another are very different with regard to the distance from the subject, creating a disruption of scale and depth. Quick, instinctive changes of focus (in and out zooms that include or exclude objects, that go rapidly from close in to far off, from close-up to wide frame, etc.) mixed with the use of different lenses on the camera create the feeling that Mekas' position as the camera operator is variable, as though he were changing place during the ongoing show. In fact, while he filmed, Mekas was an audience member like any other, in a seat randomly assigned by his ticket number, and the variations are only the result of his awareness of the possibilities of his Bolex camera. The Bolex enables certain effects during filming, which disrupt the legibility of filmed performance: superimpositions and varying speeds make the bodies overlap, the gestures appear more dexterous, (often faster), the bodies and lights intermingle in a fabulous display (the blur of images, the result of the changing frames, increase this impression). Like acrobats the images jump, break apart, obscure our points of reference. Notes on the Circus is not so much a presentation of a circus show as it is the Mekas' experience of the circus, his fascination with the whirlwind of attractions. For the projection, the filmmaker keeps the chronological order of the shots and does not cut within them. In Notes on the Circus, the editing consisted of splicing the Bolex's filmed fragments together and adding sound (recording voices, songs and various sounds) (see the Glossary: Editing). Keeping the chronological order of sections spliced together is known as "in-camera editing". This technique means you have to think about how the shots will fit together as you are filming, because once you reach the end of the reel, your editing is complete. This allows for more spontaneous filming: home movies (or fictional home movies in features) are often edited "in-camera".amant dans les fictions) sont souvent réalisés en « tourné-monté ».

Jonas Mekas : « What I call filming is improvisation, I don't design. There is no plan. So I follow the movement, the flow, no invention, no creativity, I just have to be true to the present moment, be close and not force anything. Totally open, like an eye. I do not want to film [...] major events, but small events, where nothing seems to be happening but where in fact something essential is taking place. » [1]

Sur *Notes on the Circus* : « [...] all of these voluntary technical "errors" [...] are not there for the sake of experiment [...]: this bouquet of colourful impressions, sharp or blurry, black or pink, this glittering image of acrobats and jugglers is the exact transposition of the dazzled, enchanted memory, a collision of events, as experienced by a child who can't fall asleep the night after the day he went to the cinema for the first time in his life. »[2]

1 https://www.debordements.fr/Jonas-Mekas. Interview in Paris by Arnaud Widendaële, Louise Delbarre and Alexandre Prouvèze, 2012
2 Dominque Noguez, Éloge du cinéma expérimental, Paris, Paris Expérimental, 1999

SCHATTEN / SHADOWS

1960, Germany, b/w, 35 mm, 10 min
Direction: Hansjürgen Pohland
Scenario: Leon G. Friedrich
Photography: Friedhelm Heyde
Editing: Christa Pohland
Music: Manfred Burzlaff Septet
Production: Pohland Film (West Berlin)

THE FILMMAKER :

Born in Berlin, Hansjürgen Pohland (1934–2014) is a filmmaker, producer, screenwriter, and photographer. An iconic figure among the upstarts in the New German Cinema, alongside Wim Wenders, Rainer Werner Fassbinder, Werner Herzog and Helma Sanders-Brahms, he signed the “Oberhausen Manifesto” in 1962, calling for a new, engaged cinema including social criticism, as a reaction to the entertainment style of the 1950’s.

Pohland launched the career of many talented members of this new generation. He has produced abundant works, including feature films but also many short films (end of the 1950’s, early 1960’s): these “cultural” films, of which Shadows is one, were commissioned from the Berlin institute for Education, Youth and Sports, and some were films about children.

LE FILM :

Schatten (Shadows), is the filmmaker’s best known short film: it reveals a metropolis, Berlin, and focuses on the shadows of architecture, people and various objects projected on the walls of buildings or the ground. A parallel world appears in this black and white film where dark, flat shadows are projected on a grey background; the shadows take the place of real people and objects. Composed exclusively of outdoor shots in public spaces, Shadows considers the daily routine in a big city, and the beginning of a new day. However, Berlin reveals its identity only indirectly. The background upon which the shadows are projected is a banal mixture of residential buildings, streets, ruins, work sites and touristic monuments. As the Manfred Burzlaff Septet performs the soundtrack, the urban structure becomes a screen where shadows are projected ».[1]

Schatten, Hansjürgen Pohland

1 See the sheet by Stefanie Schlüter for the Deutsches FilmInstitut: https://www.dff.film/wp-content/uploads/2019/08/Arbeitsblatt_Schatten_FRA.pdf

Children and shadows in the park, André Kertész

TECHNICAL AND AESTHETIC RESEARCH :

In *Schatten (Shadows)*, the camera films from unusual angels: sometimes from overhead (camera high up pointing down) or low-angle shots (camera set low and pointing upwards).

The camera placement makes it possible to film shadows in places that are far-off or difficult to access (the top of a building, the ground). It also creates an interaction between the shadows and the surfaces that distort the figures, making them stretch or shrink. The shadows appear straight on a perfectly flat surface, wavy on the sand; the presence of an angle can break one in two. Thus, the filmmaker underscores the artistic and playful nature of the shadow, he mischievously transforms everyday places and figures into something unrecognisable. This is similar to the work of Hungarian photographer André Kertész.

Hansjürgen Pohland seems to suggest to the viewer that the city of Berlin hides secrets that an artist's eye can reveal. He also seems to be saying that it can take some time: the images are first still, lifeless, then become animate, playful and lively, as if the viewer has to take stock of the city first, before exploring its mysteries. This work on shadows also opens up graphic potential, emphasised by the use of black and white. Schatten reveals the hidden geometry of the objects that surround us. We lose sight of doors, windows, traffic signs and grates, and discover lines, squares, triangles, arabesques. A perfectionist with regard to balance (which required location scouting), Pohland often puts people in the shots, within the compositions created by the shadows.

The editing (see the Glossary: Editing) of all of these shots follows a "narrative" progress, with a beginning, middle and end. Pohland wants to tell the story of an ordinary day in the city of Berlin, from one morning to the next: day-time, night-time and then daytime again, arriving with the sound of a trombone.

Each phase of the film has different musical themes, creating different atmospheres. Manfred Burzlaff composed the music after the film was complete (unlike Virtuos Virtuell, where the music came first).

The different sequences of the musical composition organise the advancement of the film, and structure the different themes. At times, the score makes the images, many taken with a still camera, more dynamic: the image shown is underscored or called into question by the music. This portrait of the city is an extension of a tradition begun in the 1920's with films such as Montparnasse by Eugene Deslaw (1928), Chelovek s kinoapparatom/The Man With a Camera by Dziga Vertov (1929), Douro, Faina Fluvial by Manoel de Oliveira (1931).

Sur *Schatten* : « An ardent declaration of love for the concrete poetry of the city! In ephemeral images, filmmaker Hansjürgen Pohland composes shadow and light, all he needs to create his own Berlin Symphony in nine minutes. It is a playful improvisation, the fleeting images of the city are his inspiration for cinematic creation. »[1]

1 Notice du programme du Zentrum für Kunst und Urbanistik (Berlin)

VORMITTAGSSPUK / GHOSTS BEFORE BREAKFAST

Germany, 1928, b/w, 35 mm, 7 min
Cast: Werner Graeff, Walter Gronostay, Paul Hindemith, Darius Milhaud, Madeleine Milhaud, Jen Oser, Hans Richter
Director: Hans Richter
Scenario: Werner Graeff
Cinematography: Reirnar Kuntze
Music: Paul Hindemith (composed the original music, since lost)

THE FILMMAKER :

An important and activist figure in avant-garde garde cinema, **Hans Richter (1888-1976)** was a German painter, sculptor, art historian and filmmaker. He moved to Zurich in 1916, when the city was a hot bed of Dadaism, and met many artists who played a decisive role in his artistic development. The painter and filmmaker Viking Eggeling (who made Diagonal-Symphonie) initiated him into abstract form. Richter started with abstract painting. His scroll-paintings are covered with geometric figures – lines, squares, diamonds – that overlap in ways that prefigure the forms of his first film, *Rhythmus 21* (1921). During the 1910's, Richter grew close to the Dadaists. Radically opposed to the war, the members of the movement also questioned all traditional artistic and social values. In the Dada spirit, writing must escape from the strictures of meaning, sculpture and painting from those of beauty and harmony. Art must be desacralized, the creative act a revolt. As Tristan Tzara wrote in the Dada Manifesto in 1918: "Dada Means Nothing. (...) I am against systems, the most acceptable system is on principle to have none."

In this rebellious spirit, Richter, back in Germany, made *Vormittagsspuk/Ghosts Before Breakfast* in 1928. The film was qualified as "degenerate art" and prohibited by the Nazi regime: Richter left Germany and found refuge in the United States. In New York, he lectured at the Institute of Film Techniques at City College. He worked to promote and defend Dada and Surrealist ideas. With Dreams that Money Can Buy (1947), made with other European artists (including Fernand Léger, Marcel Duchamp and Man Ray) who each directed a dream, Richter put his name to a Surrealist film that would become a classic.

Fuge, Rhythmus 23, Hans Richter

THE FILM :

In *Ghosts Before Breakfast*, daily come alive and wreak havoc. A man tries unsuccessfully to knot his tie, which travels round his neck, then begins to wriggle on a white background. Four gentlemen run after bowler hats that fly away. A fire hose unrolls on its own, turns on the hats, and drives them farther away from the gentlemen. The hands on the clock speed up. Everything suggests that ghosts are perturbing the daily breakfast rituals. The presence of firearms and targets, symbol of the violence of the protagonists and their will to have power over things, underscores the revolution (equally moral and artistic) that was underway: even objects that are generally very docile seek emancipation from their "masters". The burlesque, quirky vision is a reflection of the Dadaists antimilitary spirit. At the end of the film, the four men meet around a table. Their movements are so mechanical they look like automatons. The cups fill with coffee, the bowlers settle on the men's heads. Order is restored, certainly, but it is the objects' decision.

TECHNICAL AND AESTHETIC RESEARCH :

For *Ghosts Before Breakfast*, Hans Richter used tricks of the trade of silent film. Objects like the tie and the hats move through the pixilation technique (see the sheet on While Darwin Sleeps). To get the beard to disappear or the coffee to appear in the cups, Richter used stop-motion, developed by French filmmaker Georges Méliès: the camera is stopped and the item is altered, replaced, or removed, then the camera rolls again, continuing the same shot (see Early Cinema Programme). To get the bowler hats to fly, Richter tied one end of an invisible thread to the top of each hat and the other to a rod from which they were suspended, and which was carefully kept out of the frame. At one point in the film, the characters disappear behind a pole. This was done by editing: splicing two pieces of film together, one with the people, one without. The splicing was done by cutting frames of the two sequences in half on the verticle (Richter used the pole as the line of separation), then securing them together. This subterfuge turns the usual "exit frame" (as in "exit stage right") on its head, because the exit takes place mid-image, creating the impression of a vanishing act!

Superimposition of images, duplication, slow motion, negative images (see Glossary: Development), use of scientific films for entertainment (reminiscent of Jean Comandon, see: The Growth of Plants), all feed into the incoherence of the situation.

Made in a pure Dadaist style, *Ghosts Before Breakfast* is a satire of the bourgeoisie and its artificial order. Their attempts to tame objects that symbolise social status (the well-set table, the elegant bowler hats) make the protagonists look ridiculous. There is something of early burlesque cinema here. The criticism of social order did not go unnoticed; the original accompanying score composed by Paul Hindemith was destroyed by the Nazis. When a new version was made, Richter wrote: "The Nazis destroyed the sound version of this film as 'degenerate art'. It shows that even objects revolt against regimentation." Today we have a version where we hear a traditional Bavarian brass band (apparently Richter's own proposal when the film was restored in the 1970's), accentuating the ironic tone of the film. Richter, after fleeing Germany for the Unites States, had suggested that percussionists accompany the film.

Ghosts Before Breakfast, Hans Richter

Hans Richter : « In fact, there is a historic moment in the evolution of art where it blends [...] with cinema, [...] uses the magical qualities of cinema to penetrate the dream state. [...] Total freedom from the chains of conventional narrative, its psychological basis and chronology. In Surrealist and Dadaist developments, objects are torn from their usual roles and placed in atypical settings, giving rise to new and unexpected sensations. »

On *Ghosts Before Breakfast* : « The liberation of objects from their functional roles, in a total rebellion against their owners, becomes a joke on the narrowly defined, stuffy lives of the bourgeoisie: the society which defines itself by the clock. [...] Richter creates a delightful bit of film trickery that challenges our perception of the cinema. »[1]

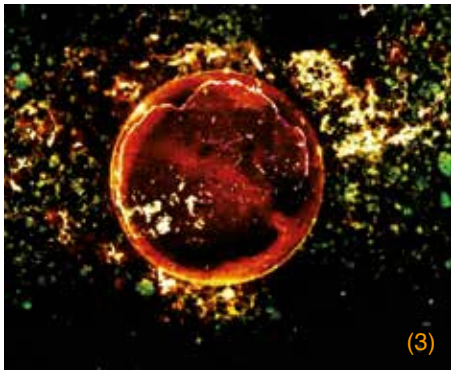
1 Ed Lowry, notice du DVD

IV – CONNECTIONS

IMAGES - REBOUND: Circles


(1)


(2)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1 - *Notes on the Circus*, Jonas Mekas
2 - *Ghosts before breakfast*, Hans Richter
3 - *Impressions From the Upper Atmosphere*, José Antonio Sistiaga
4 - *Rainbow Dance*, Len Lye
5 - *Notes on the Circus*, Jonas Mekas
6 - *Vormittagsspuk/Ghosts before breakfast*, Hans Richter

7 - *Schatten* (Shadows), Hansjürgen Pohland
8 - *The Growth of Plants*, Jean Comandon
9 - *Ghosts before breakfast*, Hans Richter
10 - *Rhus Typhina*, Georgy Bagdasarov and Alexandra Moralesovà
11 - *Opus III*, Walter Ruttmann


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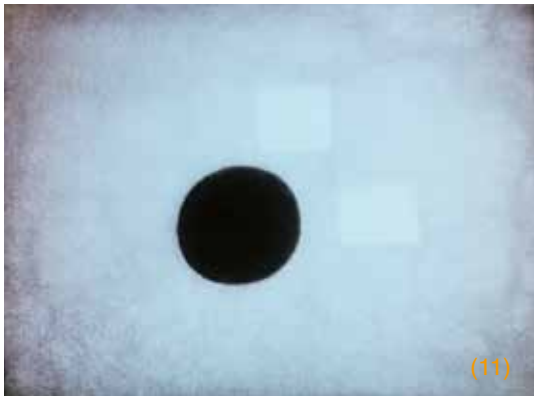
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QUESTIONS ON CINEMA, DIALOGUES BETWEEN FILMS

1. COLOUR

Serpentine Dance by the Lumière Brothers, Impressions From the Upper Atmosphere by José Antonio Sistiaga, Notes on the Circus by Jonas Mekas, Opus III by Walter Ruttmann, Rainbow Dance by Len Lye.

Of the different styles of cinema, experimental film is the one that uses colour with the greatest creative freedom. In experimental films, colour is not limited to realistic, existing or recognisable universes (of course, the use of colour in commercial cinema required further development). Experimental cinema helped create imaginary, unreal worlds. Colour can stimulate states of mind, feelings, and impressions by means other than words and dialogues between characters.

The colour is often at the very heart of the film project, its true raison d'être.

The close bond with painting techniques is especially apparent in four of the films in the programme: Serpentine Dance (Lumière version), Impressions From the Upper Atmosphere, Opus III and Rainbow Dance. In these films, the filmmakers paint directly on the film stock or work on it with other methods (collage, filters, etc.) (see the Glossary: Direct Animation). In direct animation film, because the medium is small in size (35mm or 70mm in some cases), filmmakers (and colourists for the Serpentine Dance) had to focus on precision, because the least spot or excess paint would be visible at the large scale. Projection enlarges the details so that, for example, we see that the amount of paint spread on the dancer's costume is not always the same: the coloured areas are more or less dense. Experimental filmmakers make a virtue of necessity: the approximate appearance of the colours in Serpentine Dance lends an unwitting poetry to the film; the naturalist look is avoided by the use of deliberately artificial colours. In Serpentine Dance, the dancer's gauzy costume looks like a butterfly or an enchanted flower. In this way, we see the materialisation of a universe where nature is allied with the magic of metamorphosis. (see Early Cinema, Context sheet, chapter "First Colours")

The raindrops in the beginning of Rainbow Dance are painted directly on the film and are of different lengths and precision: indeed, more than raindrops, they are spots of colour taking over the landscape. The feeling of freedom and lightness expressed by Len Lye is achieved by the use of extremely bright colours that add a dreamlike, childish joy to the characters and settings. For Len Lye, this film corresponds to a "scenario of colour", staging the rainbow motif (after the rain, fine weather and travel) but also a formal composition where colour appears in its own role: it is integral to the motifs. The "jumping dancer" for example, invents an especially enchanting world while incarnating the metamorphoses and surprises that are the heart of the film.

In Impressions From the Upper Atmosphere, José Antonio Sistiaga also creates an imaginary universe through the use of bright colours: green, yellow, red-blue, light brown. The colours chosen call up our cosmic fantasies: the darkness around them, their intense luminosity at once solar and celestial (the film is dedicated to Vincent van Gogh, whose paintings show his obsession with light), create an impression akin to pieces of stained glass caught up in the intense movements of cinematographic images projected on a screen. These colours, placed image

Serpentine Dances, Auguste et Louis Lumière

Rainbow Dance, Len Lye

Impressions From the Upper Atmosphere, José Antonio Sistiaga

Opus III, Walter Ruttmann

by image in small applications on the film itself, are vibrant, unpredictable, constantly changing; they seem to concentrate and reconstitute the agitation of a ball of energy and the light of the cosmos. Sistiaga, by bringing a painter's gesture to the film, reveals the brilliant intensity of colour as the light shines through the images during projection.

Opus III goes farther in pushing the limits of figuration. The metamorphosis of geometric figures that move through the film (squares, lines, rectangles, etc.) is the result of their changing outlines, but also the changes in colour from one shot to another. In this Opus, Walter Ruttmann plays with forms in a limited number of colours: black and white, blue and violet, shift and flicker under the viewer's eyes. It seems that we are watching a painting come together and break apart, as if variations of a painting were explored while we look on. It is like discovering the act of creation in live action.

All of these filmmakers have a particular approach to colour, which affirms the artificial nature of the worlds presented, worlds born of the artist's fantasy. Colour also reveals the tools that were used in making the film (brushes, stencils, etc.) and the techniques for application. Underpinning these various uses of colour, we sense the presence of the filmmaker, his gestures, his hand. In this way, the chromatisms of experimental cinema are doubly subjective: they affirm the presence of the filmmaker, they convey his feelings to us.

The colour in Notes on the Circus comes directly from real-time filming, but is no less subjective. In the film, the circus rings are often in darkness, which brings out the lit elements: the animals, the circus performers and their accessories. The way they are captured makes these figures look more like spots of light and colour. Mekas highlights them on the black background, catching the spectacular effects of the show, and creating the impression that the figures are memories he holds deep within.

2. MUSIC

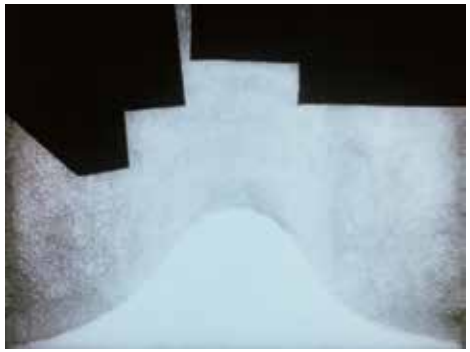
Cat Listening to Music by Chris Marker, *Opus III* by Walter Ruttmann, *Rainbow Dance by* Len Lye, *Shadows* by Hansjürgen Pohland, *Virtuos Virtuell* by Maja Oschmann and Thomas Stellmach.

Music holds a special place in experimental cinema. By the 1920's, avant-garde filmmakers were often inspired by the musical model: many film titles refer to musical composition (symphonies, opus, etudes, variations, etc.).

Music is the art that best expresses and transmits sensations and impression without the need for narrative. For experimental filmmakers, it is a driving force that propels the search for rhythms to develop. Whether the music already existed or was written for the film, it feeds it by proposing an interpretation, rather than merely playing in parallel. It is not just music to accompany the film, but acts a rhythmic force, like the editing process, shot composition, the vivacity of the colours – in synch with or in disruption of to the images.

Walter Ruttmann, with his Opus series (Opus III is in the programme), tries to create music for the eyes. His film can be seen without the music (composed a posteriori), because the volumes alone, their appearances and changes, set the rhythm.

The music for Shadows (also composed after the film was made) plays a different role. Through their length and sequencing, the shots in the film have their own rhythm. The jazz score, with its sustained beat, enters into a dialogue with the images, makes them more dynamic and less static in appearance. In addition, the music serves to invoke the agitation of the city before it actually begins: the quick tempos at the outset suggest that the city, still sleeping, will soon be up and about. The film paints a portrait of the city, without words, with



Opus III, Walter Ruttmann

Schatten (Shadows), Hansjürgen Pohland

Cat listenning to Music, Chris Marker

Virtuos Virtuell, Maja Oschmann et Thomas Stellmach

"commentary" provided by the music.

This same dialogue between images and music exists in Cat Listening to Music and Virtuos Virtuell. In the first, Chris Marker shares his cat's state of tranquillity with us. The cat is listening to music in the room; we understand this because of a shot of the speaker. The melody of Pajaro triste sounds sweetly as we observe this moment of solitary abandon. The music creates the continuity: throughout the film we see parts of the animal separately whereas the music plays uninterrupted.

Music is an experience that unfolds over time. It allows for variation in feelings: we move from fear to joy, we experience emotions. The main characters in Virtuos Virtuell are a very thin line struggling with a thicker one. Their movements, encounters, and changes in size follow the notes of the opera The Alchemist by Louis Spohr (1832). Maja Oschmann and Thomas Stellmach transpose the music – its rhythm, its tempos, the feelings it evokes (fear, jollity, exaltation, etc.) – interpreting it through animated images in the form of a graphic representation of musical variations, making what we listen to visible.

3. SENSATIONS

Impressions From the Upper Atmosphere by José Antonio Sistiaga, Notes on the Circus by Jonas Mekas, Rhus Typhina by Georgy Bagdasarov and Alexandra Moralesovà, While Darwin Sleeps by Paul Bush.

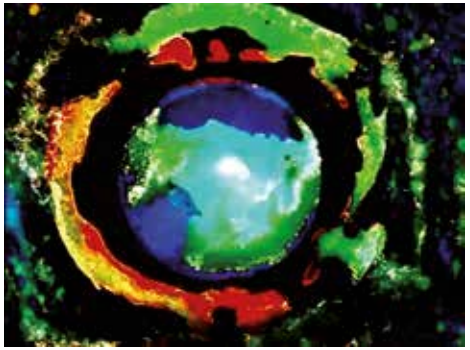
The rhythm of images, their colours and their plasticity, can be used to transmit sensations and impressions. With his special way of filming – very short shots and ruptures of scale – Jonad Mekas creates a cinematic vision of the unique pace of the circus show. The superimpositions mixed with the sharp camera movements create a feeling of vertigo. Jonas Mekas gives us the impression that we are watching the show through his eyes, shifting from one thing to another, trying to record the least movement, enchanted by the acrobats and the bright lights.

In Rhus Typhina as well, Georgy Bagdasarov and Alexandra Moralesovà use short shots on 30 metres of 16mm film to create an effect of superimposition. We partake of the filmmakers' curiosity as they are on the lookout; we step into their shoes. In Rhus Typhina, the tactile dimension is also very important: through a strategy of progressive approach, the filmmakers invite us to share their experience of touching plants. This sensation is produced by repeated shots of the hands; we are reminded that an encounter (in this case with leaves and berries) also involves contact. This tactile dimension is backed up by the work on sound. The constant presence of the rustling of leaves and the filmmakers' footsteps carries us into an environment where we perceive the slightest rustle. Beyond visual impressions, experimental cinema invites the other senses.

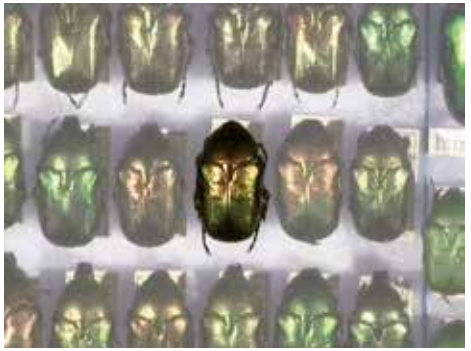
The tactile dimension is also present in Impressions From the Upper Atmosphere through the work on the material of the images, as we perceive their texture. The paint applied by Sistiaga makes the planet in the film "tangible": it is easy to imagine what it would feel like to run a finger over one of the spots of colour. A change in the rhythm of a movement can alter or transform its tone or character. Sistiaga masterfully ignores the rules for creating the illusion of movement, which produces the slight twitches and constant restlessness of the motifs. He wants to produce impressions of the upper atmosphere, rather than a scientific document (like images filmed through a telescope or from the space station); he does so through shapes, colour, rhythm and the vibration created by sound. Far from seeking to compose a realistic image of what it is like in outer space, the filmmaker offers to plunge

Notes on the Circus, Jonas Mekas

Rhus Typhina, Georgy Bagdasarov et Alexandra Moralesovà



Impressions From the Upper Atmosphere, José Antonio Sistiaga



While Darwin Sleeps, Paul Bush

us into the dream-like sensation of an intergalactic traveller dazzled by the discovery of an unknown planet.

Movement is an important way of transmitting sensations. Sistiaga works with the alteration of the continuous flow of rhythm; in While Darwin Sleeps we see another interrogation of continuity of movement. Using pixilation (image-by-image shooting), Paul Bush creates the impression that the photographed insects are moving. Progressively, we begin to see them move, come to life, they seem about to fly out of the frame, and, by extension, the museum itself. Paul Bush restores a sensation of joyful freedom and gives the will to fly back to the dragonflies, beetles and butterflies. This “reanimation” achieved through shooting techniques returns the pinned insects to life.

4. DANCE

The Growth of Plants de Jean Commandon, Serpentine Dances by Alice Guy and the Lumière Brothers , Opus III by Walter Ruttmann, Rainbow Dance by Len Lye, Virtuos Virtuell by Maja Oschmann and Thomas Stellmach.

There is a link between dance and experimental cinema that goes beyond the simple act of creating or recording choreography. These two arts have something in common with regard to their research: they seek to be free from tools and constraints – the dancer from her body, the filmmaker from the camera and film – to achieve the dream of accomplishing the possible and the impossible. Dance, in traditional cinema, can tip the story into a different set of codes; for example, in musical comedy it is a sort of parenthesis in the representation of real life, wherein any object’s purpose may change to fit into the choreography, as dance enables the establishment of unreal or even abstract universes.

The dancer’s gestures in Rainbow Dance are a pretext for his imaginary journey from one artificial landscape to another. His movements beckon new settings: a jump or a hand on the forehead to see a far distance and the world is transformed. At the same time, Len Lye calls on dance to go farther into the idea of manipulation of movement. Indeed, the dancer jumps and moves, these are actions that really took place and remain in the field of the “possible”. At two moments, however, Len Lye breaks down the dancer’s jump. Successive positions, artificially stopped as the jump develops, form a trail behind his body. Thus, Rainbow Dance reminds the viewer that any continuous movement in the cinema is based on the principle of the illusion of a re-composed movement.

Serpentine dances were among the first attractions to be filmed (the Lumières, Alice Guy). That is not surprising: the new art was anxious to record everything that moved and Loïe Fuller’s choreography was the perfect incarnation of the dream of absolute movement. It was not the dance in itself that interested filmmakers, but the fact of capturing a metamorphosis underway; the undulation of the gauzy costume transforms the dancer into a serpent, butterfly or lotus flowers (the application of colours to the film adds force to the metamorphosis).

In *The Growth of Plants*, plants and flowers become dancers. Using photographs taken at regular intervals spaced out over time, the plants change before our eyes. We discover that a blooming flower or flowering plant goes through a series of stretches, twists and other movements that look much like organised choreography. In the case of The Growth of Plants, Jean Comandon records not only movement that would be imperceptible without film, but also creates fantastic dancers.

Other impossible dancers are seen in Opus III and Virtuos Virtuell. In the first, Walter Ruttmann directs a dance of coloured shapes that seem to be appearing on a theatre stage. The shapes do not always move together, the rhythms are sometimes unconnected. Thus, they look like dancers doing different movements within the same choreography. Sometimes the shapes

Rainbow Dance, Len Lye

Serpentine dance, Auguste et Louis Lumière

Serpentine dance, Alice Guy

The Growth of Plants, Jean Comandon

enter from the left or right side of the frame as if from the backstage wings. In *Virtuos Virtuell,* the lines run, leap, change size and thickness, and undergo metamorphosis throughout the film. Their movements are in perfect agreement with the music; working like choreographers, Maja Oschmann and Thomas Stellmach found inspiration for the movements in an existing piece of music. In *Opus III*, the movements and volumes stay within the borders of the frame. In *Virtuos Virtuell,* on the contrary, the displacement of the lines is an opportunity to free the camera movements. The image follows the racing lines, takes its cue from their direction and speed. The filmmakers create a double dance: the lines with one another and the lines with the camera.

Virtuos Virtuell, Maja Oschmann and Thomas Stellmach

5. OBJECTS

The *Growth of Plants* by Jean Comandon, *Vormittagsspuk/Ghosts Before Breakfast* by Hans Richter, *Rainbow Dance* by Len Lye.

Objects have assigned functions, they are all around us and have specific uses. They are silent and obliging; in *Vormittagsspuk/Ghosts Before Breakfast,* Hans Richter sets them on the path of rebellion. The director's objects are not chosen randomly. He uses items that represent a recognisable social category, by means of dress (the ties, the hats) or with a nice coffee service. One morning, without warning, these objects stop obeying their owners: panic! The situation imagined for the film, as well as the movements of the characters and their useless, repeated gestures, recall burlesque cinema, where characters used objects for purposes other than those intended (the cane to hit an adversary's head, a shoe cooked for dinner). In *Vormittagsspuk/Ghosts Before Breakfast,* while we hear quirky and rather rustic traditional Bavarian music, the objects choose to leave their purposes behind, to refuse to allow human beings to determine their occupations. This is achieved through animation and special effects, combined to create a free and wacky world, the world Richter stood up for in opposition to the Nazi regime – the reason for his exile.

We also see the burlesque treatment of objects in Rainbow Dance. As soon as the rain stops, the character closes his umbrella, which he then handles like a stringed instrument. Through the magic of cinema, the umbrella actually does become a guitar; the simple fact of using it in a different way is enough to transform it. Next comes the tennis racquet; it doesn't turn into something else, but helps the dancer as he moves. The tennis balls multiply, fly in all directions, take on all different sizes. At last, all the dancer can do is watch them bounce across the frame and back: the balls have become coloured circles, pure graphic signs in a world where change is the only constant.

Vormittagsspuk/Ghosts Before Breakfast, Hans Richter

Rainbow Dance, Len Lye

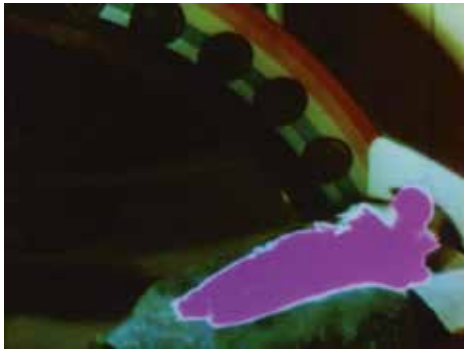
6. HOW MUCH TIME HAS PASSED?

The *Growth of Plants* by Jean Comandon, *Vormittagsspuk/Ghosts Before Breakfast* by Hans Richter, Notes on the Circus by Jonas Mekas, Rainbow Dance by Len Lye, Rhus Typhina by Georgy Bagdasarov and Alexandra Moralesovà, While Darwin Sleeps by Paul Bush.

Vormittagsspuk/Ghosts Before Breakfast begins and ends on a shot of a clock. At the beginning of the film it is 10 a.m., at the end it is noon. Two hours of the objects' rebellion is concentrated in the seven minutes of the film. This style of condensing time is common to all films, it is rarely the case that the duration of the film corresponds to the reality of time (among the exceptions, *The Rope*, 1948, by Alfred Hitchcock). However, Hans Richter shows us the hands of the clock spinning, as if they, too, were taken up by the spirit of the revolt. This begs a question: how much time actually passed? With his film, Hans Richter tells us that in a world without rules, the measurement of time is meaningless.

Vormittagsspuk/Ghosts Before Breakfast, Hans Richter

La Croissance des végétaux, Jean Comandon



Rainbow Dance, Len Lye

Notes on the Circus, Jonas Mekas

Notwithstanding its scientific purposes, The Growth of Plants reaches a similar level of freedom with its images. Manipulating the speed of movement of plants (we perceive the acceleration of time thanks to the presence of a clock), Jean Comandon seeks to study their inner workings and understand their evolution. However, this work on the deregulation of time has an incomparable poetic depth.

In Rainbow Dance there is no indication of the time of day or of the year. The artificial colours feed into the confusion between day and night, from one second to another we find ourselves in very different places: a mountaintop or a tennis court. Len Lye's film takes on some of the principles of a dream, where nothing is impossible, and the passage from one temporal realm to another needs no justification. .

In Notes on the Circus and Rhus Thyphina, the real duration of the event is of little importance; all that matters is the intensity of the experience. We know that the perception of time is subjective, depending on our state of mind. The circus show attended by Jonas Mekas or Georgy Bagdasarov and Alexandra Moralesovà's hunt for Rhus typhina may have lasted two hours or several days; these films do not take place within a chronology so much as within the filmmakers' subjective perception of time. Their use of in-camera editing adjusts their relation to time, fitting it into the duration of one reel (3 minutes), which necessarily gives rise to gaps.

V – PEDAGOGICAL APPROACHES

These teaching suggestions accompany the programme as you go along, and are designed to help young viewers define their impressions and feelings while learning about the different techniques through hands-on activities.

The suggestions are made for each film, and also for films studied together in this double programme.

BEFORE SCREENING

To raise pupils' awareness of films that are different from those they might usually see, you can :

> Ask, "What is a film?"

> Most often, there is a story, characters, of course. But what if a film didn't tell a story with characters, what remains of the film? Light, movement, rhythms… These films show us the world in a dream, where everything is possible. In a dream, do events follow the same logical course as in real life? Explain to the pupils that some films are adventure stories with unusual characters: colours, shapes, and spots...

> Ask the pupils to pay attention to a shape that they choose beforehand: the line or the circle, for example; they become detectives investigating images and details, concentrating on graphic aspects that they don't ordinarily pay much attention to. The circle, for example, can be seen in the circus hoops in Notes on the Circus, the sphere in Impressions From the Upper Atmosphere, the tennis balls in Rainbow Dance, the clock in Ghosts Before Breakfast, the carrousel where children play in Shadows.

> Sound plays an important role in several of the films: It guides the images to give them rhythm, it transmits feelings and emotions. It is a good idea to choose one of the films where sound is especially present (Cat Listening to Music, Rhus Thypina, Virtuous Virtuell) and to listen to the sound without the images. Ask the pupils to listen without seeing the images and let their imaginations run free. What do they "see" or perceive?

> Some of the films express joy (Notes on the Circus, Rainbow Dance), others fear or exaltation (Virtuos Virtuell). In order to better evaluate the impact of the film on the pupils' senses, you can ask them to identify the one that best represents how they are feeling that day. Save the discussion for after the screening.

Jacquot de Nantes, Agnès Varda, 1991

AFTER THE SCREENING

> Ideally, show the pupils a piece of film (24 images), or the picture of film in the booklet (page 47).

For many children, this may be the first time they have actually seen or heard about the physical objet that is film! Now explain the principle of breaking down movement to create the illusion of movement (see the sheet on Impressions From the Upper Atmosphere). (Also see the Glossary: Flicker, and Film/Emulsion). You can give a simple demonstration with a one-second gesture. For example, lift an arm: if the movement were filmed, the camera would break it down into 24 steps, each recorded on a photogram. On the film, you would see one step on each photogram: first, the arm on the side of the body, second the arm rises slightly, and by the 24th and last photogram the arm is fully raised.

You can also ask simple questions about the physical film, made of celluloid (a plastic substance that is used to make various objects such as ping-pong balls and piano keys): there are images on it, holes on the sides (perforations), fine white lines on one of the edges that are the soundtrack. What would happen if they were to scratch the images (see the sheet on Rainbow Dance), if they coloured them with a felt pen or added ink spots? You can explain that marks made directly on the film are visible when the film is projected.

If you do not have any pieces of film available, there are some good images on Internet. You could also use slides (if you have any) or rhodoïd (plastic sheet): these transparent materials let the light through as film does (see the Glossary: Direct animation). To paint on this material, you need alcohol ink or permanent markers. To experiment with scratching, you can spray paint a rhodoïd sheet; once it has dried, the paint can be scratched off (with a stylus, a quill or a pointed object).

DISCUSSING THE FEELINGS AND IMPRESSIONS :

> Which film best expresses the way the pupils are feeling? Why? In Notes on the Circus, the performers' gestures (jumping, running, juggling), the rhythm of the succession of images that change speeds, the fast movements of the camera, the music and the flashes of light communicate feelings of joy, or even trepidation, and pull our attention in several directions at once. What about Virtuos Virtuell, Cat Listening to Music, Serpentine Dances and While Darwin Sleeps ?

> You can ask the pupils: In which films does time move differently than in reality? Ghosts Before Breakfast, While Darwin Sleeps, Rainbow Dance, The Growth of Plants… Using the suggestions in "Dialogue between films" page 38, you can respond to the pupils and explain how filmmakers created these strange sensations of time.

> Association of ideas: several of the films are abstract, which does not mean that they are completely foreign to pupils. You can ask them what they think of when they see: the circle in Impressions From the Upper Atmosphere (a planet, a molecule?), the shapes in Opus III (buildings rising up in the sun?), the lines in Virtuos Virtuell (plants, trees?). The Growth of Plants and Serpentine Dances are not abstract films, but some of the plant movements filmed by Comandon resemble the acrobats' movements, and the dancers' costumes look like butterfly wings.

DISCUSSION, FILM ANALYSIS :

> After asking the pupils if they have seen the circle or line motifs in several films (which ones?), you can ask them about other recurrences. Each pupil can suggest two films that have elements is common: for example Notes on the Circus and Rhus Typhina use very short shots; While Darwin Sleeps and Serpentine Dances have a butterfly theme; While Darwin Sleeps and Rhus Typhina use the sounds of nature; Shadows and Opus III feature geometric shapes.

> Which films have human characters? Rainbow Dance, Shadows, Notes on the Circus, Serpentine Dances and Rhus Typhina show men and women. In which films have the people have been directed by the filmmaker (you can explain, which characters were given instructions from the filmmakers and/or knew in advance how they were supposed to act)? The dancer in Alice Guy's Serpentine Dance knows very well when she must come on stage and face the camera; the dancer in Rainbow Dance prepared his choreography before filming (or it could not have been integrated in the backgrounds!). It is apparent that the characters in Shadows have been directed, because they all walk at the same speed, and near the end the lovers' embrace is perfectly framed by the shadow of the window.

SOUND EXPERIMENT :

Like with music, sounds guide the viewer's gaze and convey sensations. In the films in the programme, sounds may be very present or totally absent; they may be accentuated, suggestive, or have no apparent connection to the known world. You can choose a sound from a film (for example, the buzzing in While Darwin Sleeps) and ask pupils to recreate the sound using objects, their voices or their bodies. You could also try to compose a new musical score, different from those heard in the films, using simple sound effects. To create the soundtracks, the pupils can be divided in different groups: some can snap their fingers (sound of the rain in Rainbow Dance); others can crumple sheets of paper (sound of walking through the brush in Rhus Typhina or Ghosts at Breakfast); others can blow into their cupped hands (the wind in Shadows); others may use their voices. These experiments in sound can change the way the film is perceived: for example, adding the sound of wind to The Growth of Plants may create the feeling that the scenes are outdoors (whereas they were clearly filmed indoors); you can analyse the effect produced by the mismatch of the sound and the image.

EDITING EXPERIMENT :

Editing is the operation of selecting and arranging shots (see the Glossary: Editing). Each splice produces different sensations and meaning. It is easy to demonstrate this through a simple activity that also teaches about the shot. Give the pupils six small rectangular sheets (the shape is like a cinema screen) where they draw: a close-up of a cat with open eyes, then with closed eyes; next the same cat with open eyes in a medium shot (filmed a bit farther off, which shows some of the surroundings); then sleeping on a keyboard; then a detail of the cat in close-up (an ear, a paw); finally, images of musical notes (representing what might be in the cat's mind). Variations in the order in which the images are presented produce different stories and feelings: the cat wakes and falls asleep several times; the cat is sleeping and the music wakes him up, etc.

The teacher can also arrange the images, following the pupils' instructions. The six pictures can be prepared ahead of time, and shown to the pupils as the rules of the game are explained. See what ideas they come up with.

PRACTICAL ACTIVITIES

The films in the programme use several effects that you can explore in workshops. These activities are fun and the pupils can get a better grasp of the principles of "special effects" seen in the films.

SUPERIMPOSITION

Present in *Notes on the Circus*, *Rhus Thyphina* and *Ghosts Before Breakfast*, this effect is the superimposition of one (or several) images (see the sheet on *Rhus Typhina*). You can make a thaumatrope (a "wonder turner"), one of the earliest toys to use optical illusion. This enables the pupils to consider the effect and think about framing, positioning and the shape of objects in space.

How to make a thaumatrope: ask the pupils to draw images that go together on two sides of a cardboard circle, for example: a lion on one side and a ring of fire on the other. If your images have an up and down component, they need to be lined up with one of the images upside-down or the magical illusion won't work properly (before making the second drawing, turn the first picture upside down). Punch two holes on opposite sides of the circle, then thread a piece of string through one hole and tie the ends together to form a loop. Repeat for the other hole. Spin the disk by twirling the strings: this creates a third image, the result of the rapid superimposition of the two drawings.

Intervention workshop on film

DISCOVER THE ILLUSION OF MOVEMENT :

Make a flipbook: a flipbook is an optical toy that creates the illusion of movement. Give the pupils 15 to 25 small rectangular papers and have them draw the steps of a simple movement. Each picture must be slightly different from the one before. Clip the pieces together with a drawing clip, then flip through the pages using your thumb. This activity can be used with several of the films in the programme. For example, the pupils might recreate the movements of the tie or the pistol from *Ghosts Before Breakfast* or the dragonfly wings in *While Darwin Sleeps*, or they might draw the same figure on each sheet (the serpentine dancer or just a circle), and change the colours from one page to another. The colours should progress through shades (don't go directly from blue to orange, but dark blue to light blue to green, to yellow to orange).

DISCOVER THE EFFECTS OF PIXILATION AND STOP MOTION:

Make a short film using pixilation. Ask the pupils to imagine an object or part of an object moving: they can choose one from a film or one in the classroom (a pencil, a chair, a pair of scissors), or the hands on the clock. Using a still camera, take two pictures at each phase of movement: two pictures with the clock hands on noon, two with hands marking one o'clock, etc. Be sure not to photograph the hands of a person moving the hands of the clock! After you upload the photographs onto the computer, you can move quickly from one to another. It will appear that the clock hands are advancing very quickly or that the object is moving on its own. You can also print them out and collate them in a flipbook.

STOP MOTION :

Imagine a situation in which a character or an object suddenly disappears, for example: there is a cup on the table, the cup disappears. Choose where to place the camera: close, far, overhead (high-angle shot). Film the first part of the situation: a hand puts the cup down then withdraws from the frame. Then stop the camera and remove the cup. Take care not to move the camera, so that the frame stays exactly the same, otherwise the viewer will be tipped off. Turn the camera on and film the empty table. Load the two films on the computer and play them one after the other. It will appear that the cup on the table has disappeared on its own. Stopping the camera creates jumps and gaps that can be seen in programme films (*Ghosts Before Breakfast, Notes on the Circus*) and also some early cinema films (see Méliès in the Early Cinema programme).

MIXING TECHNIQUES AND MATERIALS :

Several techniques are used in Rainbow Dance: painting and scratching the film, filmed images, animation, etc. (see the sheet, page 16). You can ask the pupils to make a collage in the style of Len Lye, using a variety of materials: hand-coloured paper, pieces of plastic, fabric or cardboard, newspaper cuttings, etc.

When the collages are finished, photograph them. Does the photograph give a good idea of how different the materials are? Yes, but you cannot touch them, run your finger over them. Just like in cinema!

A DROP OF INK IN WATER :

In *Virtuos Virtuell*, black ink streams over the image. You can get this effect with one or more drops of ink in a jar filled with water. You can see the ink spread out progressively until it is completely diluted in the water. You can try it with different colours of ink.

SHADOW PLAY AND COLOUR FILTERS :

After watching *Schatten (Shadows)*, you can suggest that the pupils play with their shadows. If you don't have powerful lights, one or two flashlights should do. Facing a white wall or screen (a white sheet will work too), the children can make stories with their hands or even their whole bodies (using accessories). The shadows can become characters such as bats, wolves, birds or machines. As they move closer to or farther from the white wall, the size of the shadow changes.

You can also cover the beam with a magnifying glass or a filter (a transparent coloured sheet). With a magnifying glass (you can also use eyeglasses, or a drinking glass), you can play with the shape of the shadow and produce an effect or an "underwater" atmosphere. With a filter, you can see the shadows projected on the wall change colour. This effect resembles certain shots in Notes on the Circus where blue or red colours spread out over the image. There is also shadow play in *Rainbow Dance.*

Intervention workshop on film

IN OR OUT OF FOCUS :

There are unfocussed shots in *Notes on the Circus* and *Rhus Typhina*. You can ask the pupils what it means to be out of focus (compared to in focus) and the effect on the viewer. An out-of-focus shot may create a sensation of confusion, dreaminess, or surprise. How do you create a blurry image? The lens makes it possible. The lens is on the front of the camera and the projector as well; it is adjusted to obtain a clear image, the “image point”; the settings can also be used to create a blurry image. Blurred elements in a film are harder to recognise, and leave room for the imagination.

To create a blurry image, use a piece of white paper to “break” the beam of light (by placing it between the lens of the projector and the screen). The section of the image on the paper will be blurry. The closer it is to the screen, the sharper the image on the paper.

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OTHER TEACHING SUGGESTIONS

- The excellent files on *Virtuos Virtuell*, *Schatten (Shadows), Rainbow Dance,* written by Stefanie Schlüter for the MiniFilmClub (Deutsches FilmInstitut in Frankfurt) https://www.dff.film/bildung/modellprojekte/minifilmclub/

- on *Vormittagsspuk/Ghosts Before Breakfast*: https://upopi.ciclic.fr/transmettre/parcours-pedagogiques/exploration-du-cinema-experimental/seance-4-un-cinema-de-reve

- on scientific and experimental film: https://upopi.ciclic.fr/transmettre/parcours-pedagogiques/exploration-du-cinema-experimental/seance-2-de-la-science-l-art

Crédits Images

p. 4 *Vitesse de la voiture*, Giacomo Balla, 1913, Mart, Museum of Modern and Contemporary Art of Trente and Rovereto
p. 8 *L'Enfer* d' H-G Clouzot, Serge Bromberg 2009, Lobster Films
p. 9 *The Little Daisies*, Vera Chytilovà 1966, Ústřední Půjčovna Filmů
p. 10 *Loïe Fuller*, Henri de Toulouse-Lautrec, 1893, Brooklyn Museum
p. 14 *Polyphonically set white,* Paul Klee, 1930, Museum of Fine Arts Bern
p. 17 *Sherlock Junior*, Buster Keaton 1924, Splendor Films
p. 19 *Guillaume-en-Egypte* / Exhibition « Chris Marker – Les 7 vies d'un cinéaste », La Cinémathèque française, 2018
p. 23 *Butterflies*, Emile Deyrolle, 1870 / Maison Deyrolle
p. 25 *Squares and concentric circles*, Vassily Kandinsky, 1913 / Lenbachhaus, Munich
p. 26 *The Flying Gull*, Étienne-Jules Marey, 1887 / Ader Nordmann
p. 33 *Children and shadows in the park*, André Kertész, 1951 / Ministère de la Culture-médiathèque de l'Architecture et du Patrimoine / la Donation André Kertész
p. 34 *Fuge, Rhythmus 23*, Hans Richter, 1923, DR
p. 44 *Jacquot de Nantes*, Agnès Varda, 1991 / Ciné-Tamaris
p. 46-47 Intervention workshops on film, Braquage association
p. 49 The different formats of cinema film, DR

Graphism

Benjamin Vesco and Alice Hameau

VI – GLOSSARY

BY SÉBASTIEN RONCERAY

Flicker: Cinema is based on the illusion of movement, i.e. the impression that the projected images are moving. This impression is produced by the rapid succession of still images which, when projected, create the illusion of movement. To make the movement appear smooth and natural, each projected image must be only slightly different from the one before. Flicker films, however, play on the absence of connected images from one frame to the next: rather than producing natural movement when projected, they produce flickering light. In Flicker films, the images are completely different from each other. These films can, for example, alternate entirely monochromatic images or a succession of different motifs (landscapes, or other subjetcs) filmed frame-by-frame. People who suffer from epilepsy may find it difficult to watch these films. Sometimes, the images and motifs are similar in appearance, so the result is something like flipping through a catalogue quickly (as in While Darwin Sleeps). In Impressions From the Upper Atmosphere by José-Antonio Sistiaga, the difference in placement and intensity of the spots painted on each separate frame creates a vibrating effect and produces the flickering look of the spheroid shape. Flicker films agitate the gaze: by showing a succession of images that are different from one another, they create a scrambled, shimmering, accelerated effect.

Development: During filming, the film stock (similar to film used in an analogue camera) is exposed to light, which is recorded on the emulsion. For the traces of light to become visible, the film must be "developed". This process involves taking the exposed film and soaking it in different chemical baths (at least one developer solution and one fixer solution) so that the images appear on the strip of film. Depending on the type of emulsions, the images are visible in colour or in black and white. This first step creates a negative where the images appear in opposite colours: black and white are inversed, as well as all the other colours which appear as their chromatic opposites (blue is orange, yellow appears purplish, etc.).

To recover the colours as they were, the negative is copied (with an optical printer) onto new film stock, which is developed in turn, and where the colours are now "real"; this is the positive print. Going from negative to positive requires laboratory machines and it is an important step, during which images may be modified. To demonstrate the independence and freedom of the pistols in Ghosts Before Breakfast, Hans Richter underscores their dance by switching into the negative mode: the pistols turn white on a black background, thus reinforcing the disparity from the usual order of things. For Impressions From the Upper Atmosphere, painted directly on the film stock, Sistiaga uses the process to obtain the colour schemes he sought. In negative, he uses colours that are the inverse of what he wants to have on the copy that will be projected (the positive print). Experimental filmmakers were interested in all of the possibilities offered by the film medium, and often worked with laboratories to develop their films themselves (whereas, in the commercial sector, films are developed by technicians who follow instructions given by the director or producer, without any further experimentation at this creative stage).

Direct animation (scratching, painting): direct animation involves working on the film stock itself: painting it or scratching the emulsion. The film is not very wide, in general 8mm to a maximum of 70mm. The work can be done photogram by photogram (this requires great precision) or on a segment of the strip (more freely and with fewer constraints).

In this method, the filmmaker is rather like a painter or engraver. Filmmakers create shapes right on the film as they work at a table, just as painters work on drawing paper or canvas. The film can be totally transparent (plastic without any emulsion), black (with layers of chemical emulsions on the plastic) or there may already be images on the film that has been exposed and developed. Working on transparent film, it is possible to paint or draw on the surface: brushes, sponges and other tools can be used to apply colours (inks, markers, alcohol-based ink etc.) directly on the film. As with a blank canvas, there is nothing to start with, it is up to the filmmaker to add colours and apply them to the transparent film medium. This is how José-Antonio Sistiaga made Impressions From the Upper Atmosphere. When working on black film, the technique is to scratch off layers of the emulsion using a stylus, quill or other pointed object. Areas where the emulsion has been removed look like transparent rips; light from the projector passes through them, so they appear white when projected. Colours can easily be added to these scratched-off areas, as Len Lye does to create stars and other figures that pop up in Rainbow Dance. Working on a film that has already been exposed and developed (there are images on it), the filmmaker may: scratch the emulsion, removing parts of the images; colour the lighter parts of the image, as the Lumière Brothers did in their Danse serpentine (in the early days of cinema, it was fairly common to colour in black and white films).

Editing: Editing consists of arranging the different sequences of the film: choosing their duration, deciding on their order of appearance. This operation gives the film its rhythm, effects of rupture, its links, continuity or discontinuity, etc. Traditional narrative film seeks to "erase" the editing, i.e. the sequences and images should follow along in a "self-evident" way, and the viewer should not notice cuts between shots. One of the major questions of editing is the right duration for a shot; the pace of the shots as they are assembled gives the film its rhythm (Jean-Luc Godard said that directing is the eye looking and editing is the heart beating). Many filmmakers (Sergueï Eisenstein, Dziga Vertov, Orson Welles, Pier Paolo Pasolini, Ermanno Olmi, etc.) consider editing to be the main specificity of cinema, its major creative space, because it is where there is freedom to shake up the narrative, establish conflict and raise awareness… in fact, a set of positions that are at once narrative, aesthetic and political.

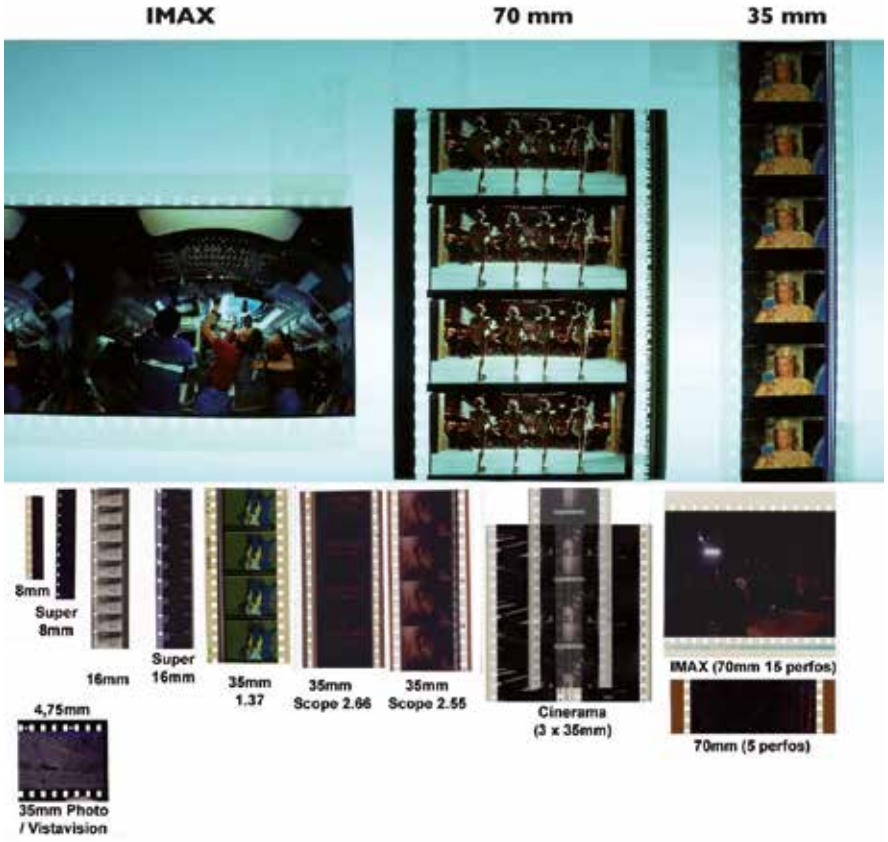
Experimental films naturally address all of these questions and develop others as well. For example, in some experimental films, editing is performed in-camera, while it is

filmed. It is then projected without any prior cutting or splicing, in the order in which it was filmed. This is a record of a temporal experience shared by the filmmaker who captures the images at a moment in time and the person who views the film when it is projected. This in-camera method was used to make Notes on the Circus and Rhus Typhina.

Other editing questions in experimental film: in films made with direct animation (such as Impressions From the Upper Atmosphere), there is no actual editing. The film stock is not exposed in a camera (filming does not occur); there is no cutting or editing. The rhythm of these films comes from the breaks between one image and another and the visual impact of the images that are in constant variation (see the Glossary: Flicker).

Film/emulsion: There are different formats of film, identified in terms of their width. These are: 8mm, 16mm, 35mm, and 70mm. The size of the film determines what tools will be required: each camera, each printer, each editing table is designed for a specific width of film. Cinema film is made of different layered elements: a transparent plastic medium with chemical coatings. The total thickness of these coatings is about 0.15mm. The thin layers of chemical products enable the recording of the images filmed. They are exposed to the light during filming and the images – or, more precisely, traces of light – are impressed upon them. This photosensitive (light sensitive) layer is called the "emulsion". During filming, light comes through the camera lens and strikes the emulsion, which is marked by it (creating the image of objects, landscapes and people filmed). While filming, the quantity of light can be controlled: Jonas Mekas uses these effects in Notes on the Circus. These variations can also be adjusted in the laboratory (during development), as for Rhus Typhina. In direct animation, the film support can be totally transparent (no emulsion coating) and the filmmaker can paint directly on the plastic; it can be opaque (this is achieved by exposing the film to light, blackening the emulsion), which makes it possible to scratch the layers of emulsions; it can have images on it (film that has been shot and developed) and may be additionally painted of scratched.

Optical printer: This machine is used in photochemical laboratories to copy images from one reel of film to another blank one (it has not been used and so images can be impressed upon it). The printer is made of two parts: one that projects, where the film to be copied is loaded, and one that records, where the blank film is loaded. The filmed images are projected on the blank film, which "re-films" them. This process goes on continuously, the original film is copied on the second reel in totality and at the same speed. It can also be done frame-by-frame. This second method uses a machine called a "Truca" (from the French word truc – trick), which makes it possible to changes speeds, make superimpositions of images, or play with light. Using the printer, it is possible to make copies of films when the originals are too fragile to project (for example if the film is covered in ink or paint).



The different formats of cinema film

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