## OUR DIGITAL SELVES

KHiO 2016 - Felleslab for tegning, digital tekstil og dLab

Felleslab for fagområdene Tekstil, Grafikk og Tegning, og Digital Form Red.: Trine Wester, Hege Bratsberg, Tiril Schrøder og Karen Disen

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#### INNLEDNING

Med utgangspunkt i en felles interesse i digital teknologi og innmeldte ønsker fra studenter om at det skulle være mer undervisning på tvers av fagområdene, bestemte vi oss for å samkjøre noe av undervisningen ved vårsemesteret 2016. Tegnelabb (ved Karen Disen og Tiril Schrøder), Digital tekstil lab (ved Hege Bratsberg) og dLab (ved Trine Wester) har gjennomført felles foredrag, workshop og seminar med tema vi har vurdert til å være av interesse for alle fagområdene.

Siden hver lab har hatt sine spesifikke innfallsvinkler til det digitale feltet, har den enkelte lab også hatt egne opplegg ved siden av fellesprogrammet.

Semesteret startet med at vi arrangerte Kunst og Håndverks første Agenda seminar i 2016, på Kunstnernes Hus den 15 januar. Temaet var 'Our Digital Selves' og temaet ble belyst gjennom forskjellige foredragsholdere fra ulike felt. Det var fullsatt sal, og gode tilbakemeldinger. Hele seminaret ble tatt opp på video og streamet, og ligger på KHiO's hjemmesider.

Vi har hatt lab hver mandag mellom 13-16 og dette er noe av programmet:

18.1-22.1: Dr. Francis Robertson fra Glasgow School of Art hadde to forelesninger: "*Print to pictures, drawing for print, learning from print*", som tok for seg strektegning, kartlegging og fortellingsbygging, og la grunnlaget for en videre workshop om «mapping and narration» av en ukes varighet. Her arbeidet studentene i små grupper med å lage felles «printed matter» hefter, basert på tegninger de laget i løpet av workshopuken.

Forelesning to; '*I want to be a machine': factory dreams and digital materialities'*, var basert på Robertsons egen forskning på maskinell tegning. Forelesningen tok utgangspunkt i kontekstuelle og historiske eksempler på utvikling av teknisk tegning og maskinell tenkning, og så deretter på den post-Duchampske kunstverdenen og moderne

problemstillinger knyttet til tegning og autentisitet, belyst av argumenter fra John Roberts *«The intangibilities of form: skill and deskilling in art after the readymade»* fra 2007. Dr. Robertson hadde også individuell veiledning for en rekke studenter.

25.1.2016: Artist talk/forelesning med den amerikanske kunstneren Adriane Coulburn. Coulburn hadde også individuell veiledning med noen av studentene.

8.2.2016 Forelesning og mini-workshop med Birgitta Cappelen fra AHO om e-tekstil (elektronikk integrert i tekstil).

22.2 workshop med 3d scanning, der vi lærte om ulik programvare, ulike fremgangsmåter og så på dLab's maskinpark innen dette, og alle fikk 3D scanne seg selv og arbeide videre med filen i programmet Sculptrise.

På dLab har det også vært visning av TED talk med Trevor Paglen, utprøving av VR briller og Augment teknologi, droneflyvning og demo av laserkutter og vannskjærer.

På Digital Tekstil Lab har det også vært kurs i digital Print og i Digital Vev og foredrag om digitalt broderi ved Hans Hamid Rasmussen. Et samarbeid med Materialitet og Fortelling Lab-en resulterte i en fin dag med Refleksjon og Lunsj, der MA studenter ble invitert inn til å presentere noe de ønsket å dele, evt få en diskusjon rundt.

Dette har vært første skoleår med Tegnelabb på Kunst og Håndverk. Det digitale semesteret, i samarbeid med Tekstil og D-lab, har i stor grad tatt utgangspunkt i Frances Robertsons tanker rundt tegning og det digitale. I tillegg til fellesprogrammet for alle tre labber, har det på Tegnelabben vært forelesning og tegneøvelser innen geometri ved Alec Howe, tegneøvelsene «50 Briefs» ved Karen Disen, forelesning om ornamenter og ornamentkonstruksjon ved Karen Disen, gruppediskusjon av studentenes arbeider med Steinar Elstrøm, felles innføring i bruk av skolens A3 skanner ved Tiril Schrøder og individuelle veiledninger for studentene.

I tillegg har vi opprettet en egen Facebookgruppe: <u>https://www.facebook.com/groups/</u> 487638954772868/

Dette magasinet er en oppsummering av undervisningen, i tillegg til at den enkelte student har levert et arbeid som reflekterer over temaet 'Our Digital Selves'. Dr. Francis Robertson har generøst bidratt med en tekst til magasinet. I tillegg til noe dokumentasjon over aktivitetene dette semesteret, har også vi ansatte bidratt med tekst og/eller arbeid.

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In Western societies, straight line has ubiquitous... the straight line has emerged as the virtual icon of modernity, an index of the triumph of rational, purposeful design over the vicissitudes of the natural world.

m Ingold (2007) Lines: a brief history ndon: Routledge, p. 153

#### 'I want to be a machine': factory dreams and digital materialities'

For my visit to KHIO in January, I prepared this lecture informed by my own research into 'machine drawing', that presented: 1) contextual and historical examples of the development of technical drawing and machine thinking, 2) the post-Duchamp artworld and contemporary issues that relate to drawing and authenticity, using arguments from John Roberts's 2007 book The intangibilities of form: skill and deskilling in art after the readymade. Roberts elaborates a labour theory of culture in order to investigate the dynamics of avant-garde art and changes in our notions of what constitutes artistic authorship, given that value may no longer be attached to some notion of the trace of the artist's hand. 3) 'drawing machines' are the engine holding this discussion together, from early nineteenth century drawing aids through to rule-based techniques of process artists in the last part of the twentieth century. I examine line-making and iterative drawing programmes and routines of 'computer art' and its descendants, and end with some questions about current intuitive and hybrid practices.

'I want to be a machine': factory dreams and digital materialities This lecture was centred on art practices and mentalities of the late twentieth century but it also examined the prehistory of artists' embrace of industrial and managerial-style modes of behaviour, a kind of convergence of art and industrial/ commercial visual expression derived from a general post-Duchampian ethos. At the close, I then moved to consider new, digital, styles of machine drawing, a technological/ conceptual shift that raises more questions to be answered in the future, through future work. I discussed drawing practices specifically because my own research focus lies there. As the art world after Marcel Duchamp is routinely celebrated as one of delegated dematerialised conceptual work an emphasis on drawing sounds paradoxical and perverse, but as I hope to demonstrate, a recognition of the material presence of things deemed to be immaterial tells us unexpected things about the distribution of power in culture-it helps us to see who has status, and alternatively, whose work and whose voice remains hidden. I talk about artists but also about other kinds of agents who use drawing to think with and to have a physical effect in the manmade world, such as designers and engineers, and latterly of course, hackers and computer programmers. But at the start of my talk I stepped backwards 200 years, to the era around 1800 when art and industry were not seen as separate, to the very beginning of the 'machine age' and industrial expansion driven by factories and by steam power. I discussed the development of technical drawing and machine thinking, the separation of art from industry, informed in part by

ideas taken from John Roberts's book *The intangibilities of form: skill and deskilling in art after the readymade* (2007).

Let's start with that agitating word 'deskilling' in relation to capitalist industrial production. It is more profitable to break labour down into small units and have poorly paid workers repeat the same process over and over without having to think it through. Time and motion studies 'scientific management' have reinforced the drive to substitute machine for the intelligent human labour. The technical division of labour destroys established forms of skilled craft labour and creates routinized sub-operations, and this has broken the former control that workers had over the workplace and production/ design decisions. The systematic analysis of labour was first carried out by mechanical engineers who invented so-called 'self-acting' machinery to replace skilled workers; this would save money on wages and would also control the unruly working classes, break their power to negotiate better conditions. [Industrialist-inventors (such as James Nasmyth) purged his factory workforce by getting rid of troublesome skilled craft workers, through employing instead 'extensive use of active handy boys to superintend the smaller class of self-acting tools. To do this required very little exertion of muscular force, but only observant attention. In this way the tool did all the working (for the thinking had before been embodied in it), and it turned out all manner of geometrical forms with the utmost correctness' (Nasmyth 1883: 308).]

Today, even more than ever, automation continues these deskilling processes and their accompanying degradation of labour. Overall de-skilling means several things: 1) using science and technology to analyse and control the labour process, and 2) to organise workers under management control. Nobody involved in the work has any concept of the whole or of how their work contributes to the final product. So intellect and hand work are divided; John Roberts's concern in his book with its 'labour theory of culture' is to discuss how artists have reacted to these changes in 'general social technique', and how art, in somewhat visionary or utopian manner, might achieve Marx's aim of reintegrating art and life for everyone. Roberts investigates through labour theory the dynamics of avant-garde art in the twentieth century and changing views of artistic authorship. In the past, and amongst conservative art lovers, authorship and value has been attached to some notion of trace of the artist's hand; evidently, contemporary artworld interest in drawing as a somewhat primal mark-making medium still carries a great deal of that ethos, however 'post-modern' and sceptical we may feel ourselves to be about the status of the author. As a prelude to this subject, I discuss various kinds of 'drawing machines' and their fore-runners in the early nineteenth century, and also more recent

machines and rule-based techniques of process artists in the last part of the twentieth century. I touch on line-making and iterative drawing programmes and routines of 'computer art' and its descendants, and end with some questions about current hybrid practices.

[In Western societies, straight lines are ubiquitous... the straight line has emerged as the virtual icon of modernity, an index of the triumph of rational, purposeful design over the vicissitudes of the natural world. Tim Ingold (2007) Lines: a brief history London: Routledge, p. 153 ]

Ruler and compass-in my own PhD research into the development and reception of technical drawing I asked how an apparently inexpressive and somewhat boring looking convention took fire and spread so rapidly through workplaces and general public culture at the start of the nineteenth century. Drawings suddenly were used everywhere in the design process instead of older craft methods of making prototype objects by trial and error. Engineers drew the machines they proposed to build to their customers; drawings were used to direct and control workers in factories. As a result work changed, skilled workers became machine minders repeating the same simple task endlessly throughout each day. Images of industry and machine drawings gained a fearful power as avatars of mechanised production that threatened to unleash the demonic future world of empty workerless factories, producing an endless stream of commodities through an unstoppable and relentless 'autogenesis' (Edwards 2001: 28). The calm mask-like controlled surfaces of technical drawings could be seen as a cover for the ugly new reality of the satanic mines, roaring furnaces and steam engines of 'iron Britannia' (Daniels 1994: 70). The straight line came to symbolise the technocrat and his ruthless rationality, carving a motorway or railroad through the wilderness.

I am interested in the concept of *people* as drawing machines—of workers, apprentices and engineers forming themselves through bodily practices of drawing and copying. The ruler and compass can be conceived as the first reprographic equipment—intended to make it easy to copy and reproduce the same marks and the same forms over and over again. That is what technicians and mechanical inventors trained themselves to do.

[William Weston's manuscript notebook c.1780-98 Institute of Civil Engineers] We can see that early engineers prided themselves on being able to draw just like a machine, like a print, with fine lines and hyper-accurate forms. But such 'production' values also had a vogue on fine art too in the first Romantic period the technological sublime. The 'outline style' elevated the characteristic straight ruled line, what I call 'unmodulated' line. By this I mean the draughtsman attempts to make the line absolutely uniform along its whole extension, with the same width and the same depth of pigment.

[FLAXMAN] WE see in Flaxman's *Fall of Lucifer* his use of unmodulated line on the white ground to abolish illusionistic space: we don't know where the viewer is, or anything else about the location and relative placing and orientation of the figures. The line itself carries no clues about shape orientation or depth creating a 'negation of space' similar to the use of line in technical illustration. Such perspective without vanishing points has no implied physical viewpoint and thus becomes a type of utopian vision (that is, a view from nowhere). This type of line emphasises the flat surface, it attaches the image to the picture plane through the decorative formal pattern on the surface and encourages a playful interplay between 2-D surface decoration and 3-D depiction.

[Chantrey] Machine drawing in 1800 meant the use of optical aids that help transform sight into accurate contour drawing, to deputise vision. Such edge drawing helps the maker to move back and forth between two and three dimensions. Here we see a sculptor's customer 'mug shot' full face and profile, registered on paper ready to transfer to a block of marble to start cutting—the artist's judgment and even his hand skills have deputised into this process, and the drawing functions very much like a technical production drawing, with front and side elevation views to project onto the marble block.

[Printing as industrial production slide] Technical and machine drawing was in service to the production of multiples; multiple images and multiple objects. Making exactly repeatable copies was the goal of the machine industrialist and engineer. Copying, reproducing without feeling, these are things that have become feared in industrial machine culture, and yet also the subject of fascinated cult status. In image making, printing, mechanical reproduction in Walter Benjamin's phrase, have been seen as the opposite of creative meaningful art, the enemy of originality. As I argued in my lecture on Monday, however, print comes first in artist training, and has done so since the Renaissance.

[SLIDE lines from 'Graduation'] I'm interested in prints and printing, but also in the conceptual force of copying and printing multiple identical copies within industrial technocratic society, this is what I really mean by 'machine drawing' and its eventual re-discovery and re-exploration by artists. Unlike artistic drawing, technical drawing was intended to be a mechanical process that could be reproduced at will and by anyone—the most humble apprentice was expected to copy and reproduce the same drawings as the elite engineer. For these operations simple draughtsmen's tools such as compass and ruler acted as the most basic reprographic machines, encouraging uniformity and discipline.

In print, straight lines were 'energized'—if that's not a rather perverse way of describing machine uniformity—with lines inscribed by the ruling machine invented by the engraver Wilson Lowry around 1790. These unvarying and regular diamond etched lines crept across thousands of plates for encyclopaedias, self-help publications and mechanics' magazines—initially used to depict machines and technical publications, eventually machine-ruled lines became the industrial background shading of all graphic communication in the nineteenth century—from landscape views to advertisements for women's clothing.

[SLIDE Clements ellipse] More complex forms, such as ellipses, were equally the target of drawing machine inventors. While it was often claimed that drawing machines were simply the most efficient means of image production, the excessive and superhumanly regular forms they made went far beyond functionality. [SLIDE Farey machine] The inventor of this elliptograph, John Farey, was quite candid about his use of ellipse machines in place of careful hand drawing and calculation, he said all you have to do is indicate roughly where the ellipse will fall and let the machine do all the rest. He is quite clear that in place of hand-eye coordination skills that were previously valued, he puts an engineered solution to the task of observational drawing, deputizing his conceptual knowledge to the machine. Although many artists had used such devices in a secretive way, Farey did not hide this aspect of his practice. Instead, he celebrated mechanical drawing aids, and shared these techniques through publication. His unvarying inked lines, laid in by machine and diamond point, were produced by a self-registering technology that had no need of hand crafting skills and gained authority because they were mechanically drawn-so Farey asserts a new and opposite virtue from embodied craft skills. Farey's drawing machines supplanted personal body discipline, and instead asserted the ability to control and command endlessly repeatable and accurate copies.

[SLIDE Rose engine motifs] Engineers also ingeniously devised drawing machines that automatically generated complex forms that were completely outside the skill of the human hand, for example with the invention of the rose engine in security printing for banknotes.

[SLIDE engine of the actual lathe, then slide of more motifs] A rose engine lathe is a specialized kind of geometric lathe. The headstock rocks back and forth with a rocking motion or along the spindle axis in a pumping motion, controlled by a rubber moving against a rosette or cam-like pattern mounted on the spindle, while the lathe spindle rotates. Rose engine work often also called guilloche work, produces rosette shaped flower patterns, as well as convoluted, symmetrical, multi-lobed organic patterns similar to those of a Spirograph.

Engineers are famous for building bridges or steam engines, but they also created visual communications and graphics unlike any others. Their machine drawing displayed new and specific professional skills that marked a clear separation from artistic and even design practice. [Where such aids would only be called on covertly, and forged allegiances with other activities such as instrument making and the scientific measurement.

Accurate measurements and reliable standards in both machines and in drawings were central to the development of standardization later in the nineteenth century; machine drawings were a promise to deliver such custom-made designed goods in the material world. ]

Machine drawings; technical drawings were a means of shaping people too; the first stages for apprentices when working in drawing offices, in training on the job, was to copy existing drawings, executing the same actions as one's predecessors. Habitual actions bypass the conscious centres of the brain and inscribe tacit knowledge directly as muscle knowledge, an interaction of training, education, human skills and practices. Drawing education and hand drawing practice, as Foucault reminds us in Discipline and punish, was and is used as selfdiscipline, a means of controlling one's own expression. Thus as engineers gained power, status, and legions of industrial employees in the nineteenth century, art and industry diverged. Industrial work was seen as de-skilled, repetitive, non-creative, whereas craft and art was seen as a haven for creative making. Artists and art lovers came to value things that seemed separate from work and from industry, they started to place a high price on expression, on gesture and on what was seen as natural hand-craft skills and hand crafted objects.

[SLIDE Large Glass] So, while in the art world drawing is often conceived as the trace of an intimate autographic gesture, engineers aimed to standardise the actions of the hand on the page. By the end of the nineteenth century, due to the efforts of technical professions on the one hand, and of artist agitators on the other, mechanical and technical drawing had come to be seen as the absolute nadir of art. Nothing could have been more debased, more lowly and indeed more low-class, than simple technical drawing as taught to schoolboys destined for the factory floor. That is why Marcel Duchamp used this style repeatedly in his work, for example in the water mill motif in the lower panel here of the *Large Glass* (1912-1926 'definitively unfinished' state) also the chocolate grinder next to it—and I'll return to the topic of grinder later.

In Duchamp, we see technical drawing functioning as an anti-art style, thus filling it with the satanic power of negation. And continue same slide while discussing Roberts

Roberts, John (2007) *The intangibilities of form: skill and deskilling in art after the readymade* London: Verso

As I already stated, John Roberts uses a labour theory of culture to examine the dynamics of avant-garde art and the expansion of notions of artistic authorship since the readymades of Duchamp. With the rise of the readymade the former link between handcraft and skill, formerly valued in art, began to dissipate amongst avant-garde artists. As the artisanal or traditional craft skills faded from the category of art, authorship came more and more to incorporate the non-artistic hands of others and the development of mechanical/ technical and executive skills. The artist came to be viewed as a synthesiser and manipulator of extant signs and objects. Like many socialist-inclined art historians, Roberts, in accord with the ideas of early writers like Walter Benjamin, insists on the relevance of general conditions of technological reproduction in understanding the meaning modern cultural forms; Benjamin was not so interested in the traditional world of fine art and elite privilege, he believed that art is a form of production directly linked to technological developments, so he paid attention to the twentieth-century mass culture industries, such as news magazines with photographs and adverts, films, or radio. To early twentieth century avant-garde artists such as Duchamp, painting was an embarrassment. As Roberts has it, 'dabbing, pushing and smoothing paint across a surface' no longer had any connection to the normal everyday experiences of modernity, of living in a world of hard, reified things. The readymade demands a different relationship between hand and eye. By not painting the artist's hand is able to act on intellectual decisions in a different kind of way. The hand moves not in response to sensuous representation of the external world, but in response to the execution and

elaboration of a conceptual schema, as the architect/ designer or engineer might. In a world where intellect and hand work are divided questions of skilling/ de-skilling come to the fore; Roberts's concern in his book is to discuss how artists have reacted to these changes in 'general social technique', and how art, in somewhat visionary or utopian manner, might achieve Marx's aim of reintegrating art and life for everyone. In utopian or revolutionary vein, Roberts expresses this as re-skilling, rather than a simple loss. The artist is not deskilled, rather reskilled as the artwork becomes open to other skills and other use values.

[SLIDE Stepanova] Other avant-gardes at the time of Duchamp tried to achieve that integration of art and life in a deliberately utopian manner, for example the Constructivists in the early years of the Soviet Union. Constructivism and the art of materials: Varvara Stepanova First Moscow textile factory. I'll also remind you in passing, but not show, the intense interest of the other early DADA groups in chance, and the continuation of chance and automatic processes in surrealism—concepts that gained renewed importance in the post WW2 period also and fed into early 'computer art'.

[SLIDE Warhol Cologne cathedral] Roberts, John (2004) 'Warhol's "Factory": painting and the mass-cultural spectator' in Paul Wood, ed. Varieties of modernism Yale and London: Yale University Press and Open University: 339-361 Amongst the neo-dada avant-gardes of the 1960s Warhol in his 'factory' wanted to bring art in realignment with these new forms of mass reproduction. Having started to use the photographic readymade in his work, Warhol also realised he could use many people to contribute to a painting's serial reproduction, he elaborated a creed of 'commonism' as collaboration in a 'performative flow'. Warhol wanted to dissolve the heterosexual and individualistic ego of the studio, in his eyes part of the hubristic male expressionist American Modernism and its robust craft or worker persona. But later, around 1868 he pulled back from this and adopted a practice much more analogous to a managerial master-atelier style system (just as Koons and other more recent superstars also operate) [127].

According to John Roberts, with Warhol we see 'a repositioning of the modernist artist within the public forms and collective fantasies of post-1950s capitalism'. For Warhol performing the dissolution of the artists' ego in the anonymous processes of the mechanical image is a way of embracing the seductive and abstract power of new cultural forces (of capitalist image technologies of the post-War 'society of the spectacle). By identifying painting and art with mechanical reproduction, he brings painting into full alignment with both the democratising and festishising aspects of mass culture. Warhol systematically incorporated the reality of an alienated and disenchanted mass production into art, aiming somehow to re-enchant it. I'm not showing the screen printed multiples, you know these perfectly well, but here is another more informal machine type drawing, typical of Warhol's whole approach to drawing via mediation that was established during his time as a commercial illustrator, a pencil tracing of Cologne cathedral that was drawn off a projected image, a generator of other forms and prints, a stage in production in the assembly line of art and the same kind of traced outline we saw in the sculpture workshop of Chantrey from the start of the technological sublime embrace of machine thinking when art and engineering had not yet split apart.

But although Roberts has spent a lot of time on Warhol in his writing, I want to move away from him, because he is such a 'standard' element in established art writing on machine processes in mid-twentieth century art; after all he is renowned for his statement: 'The reason I'm painting this way is that I want to be a machine, and I feel that whatever I do and do machine-like is what I want to do.'

[from 'What is Pop Art? Answers from 8 Painters, Part 1', G. R. Swenson, in *Art News* 62, November 1963] But if Pop in America was devoted to mass media and mass consumption –coca cola/ burgers/ tinned spaghetti—in the UK and in Europe there was a far stronger industrial and technical fascination on Pop art.

[SLIDE Paolozzi] In Britain changes in art education helped to develop new modes of machine drawing—and new rapprochements between art and 'general social technique'. One thing that is really important in the 1960s, and is ignored in accounts that remain in the US, is the experience of war and warlike techniques of drawing and visualization amongst new artists, many of whom had been serving in the second world war either as soldiers or more importantly, as the backroom workers of intelligence gathering, data processing and scientific war research. In the 1950s and 1960s these new students—slightly older and with technical outlook entering new art schools trying out new and experimental education methods, with much more emphasis on print and copying as a language of drawing, and also in different explorations of cybernetics and computer programming in art.

Students from many social classes had chances to enter higher education after WW2. Art schools were no longer establishments of refinement and elegance, but were home to a new generation who had been soldiers and involved also in various backroom activities of military data processing and experimentation-such as mapping, bombing exercises, and early computing. I start this section with some pages from the sculptor Eduardo Paolozzi's book Metafisikal translations produced while he was teaching a course on Surrealism at art school in Hamburg, entitled 'The translation of the Experience' which made extensive use of James Joyce's Finnegans Wake. During the course, Paolozzi and his students created collages out of many gathered damaged books. Many of these collages were used for the short film History of Nothing (1962). Metafisikal Translations, a fragmentary text, includes a shooting script for History of Nothing and some of the books images appear in the film. But the image itself here folds back and back on notion of copying, printing and machine drawing. The page is recycled from other pages, and is reproduced through photomechanical image capture. The objects and the drawing styles here are at the base, a simple, linear frontal technical drawing, at the top of what looks to me like an engraved metallic surface, decorated through the action of the rose engine. [SLIDE] protocol sequences-another Paolozzi print, presents and assemblage of the visual detritus of simple computer programming actions and of the hardware of computers-such as printed circuit boards

[SLIDE Basic design] New approaches to art education, following the 1960 Coldstream Report that urged an 'intellectual and cerebral' approach to art, and the instauration of degree programmes that would eventually displace the old craft oriented studio based Diploma courses. One very influential course was led by the artists Richard Hamilton and Victor Pasmore (incidentally Hamilton also made the second 'reconstructed version' of Duchamp's The large glass in 1955-56 that is now in Tate Modern). In Basic Design, there was a move away from 'selfexpression' towards a technical abstracted approach (de Sausmarez 1983; Yeomans 1977). 'Self-expression' with splurgy gestural mark making was seen as a hangover of the outmoded cult of the romantic artist, and also as somewhat childish, appropriate for the infant school but not for the expanding rational and intellectual faculties of the adolescent and young adult. Instead Basic design educators urged engagement with the worlds of industry, science, commerce and technology, with first-hand experience of tools and processes. Print methods and mass media sources displaced encounters between the artist and 'nature'. Richard Hamilton in particular examined the commercial designed environment by considering the symbolism of colour through corporate brand associations (a certain pink for Cadillacs, ice blue for Frigidaire refrigerators). As we see from this slide of basic design works, the course definitely reprised many of the Bauhaus methods of exploration of materials from first principles and also much of the ethos and aesthetic of constructivism-see the repeated modular units of that paperclip construction.

[SLIDE] Other non-standard, technological approaches explored in art at this time included very early computer art, as we see here with Laposky's oscilloscope drawings—he photographed analogue waveforms from a modified oscilloscope (Taylor 2014: 67-9

[SLIDE] I also want to show the analogue machine drawings of Desmond Paul Henry that were also in vogue at the same time: Henry was a Manchester University Lecturer and Reader in Philosophy who also experimented with machine-generated visual effects at the time of the emerging global computer art movement of the 1960s (The Cambridge Encyclopaedia 1990 p. 289; Levy 2006 pp. 178–180). He constructed a succession of drawing machines from modified bombsight analogue computers which were employed in World War II bombers to calculate the accurate release of bombs onto their target (O'Hanrahan 2005). Henry's drawing machines were unlike the conventional computers of the 1960s since they could not be pre-programmed nor store information (O'Hanrahan 2005). His machines relied instead, as did those of artist Jean Tinguely, upon a 'mechanics of chance' (Pontus Hulten in Peiry 1997, p. 237). That is to say, they relied upon the chance relationship in the arrangement of each machine's mechanical components, the slightest alteration to which, (for example, a loosened screw), could dramatically impinge on the final result. In the words of Henry, he let each machine 'do its own thing' in accordance with its mechanical features, with often surprising and unpredictable results. Henry's machine-generated effects went on to be exhibited at various venues during the 1960s, the most major being Cybernetic Serendipity (1968) held at the Institute of Contemporary Arts (I.C.A) in London (and partially funded by the US Air Force, Taylor 2014: 29). -it's actually a kind of non-standard 'rose engine' it draws parabolas and other geometric forms that are deformed by its many variables and operating tics.

[SLIDES Paul Brown] In the early 1970s the Slade School of Art, University of London, established what was later called the 'Experimental and Computing Department'. The Slade was one of the few institutions that attempted to fully integrate the use of computers in art into its teaching curriculum during the 1970s, offering unparalleled resources with its in-house computer system. Other centres for early computer art included less 'artistic' sponsors such as the US Military establishment or commercial R&D departments such as aerospace corporations or electronics corporations (Taylor 2014: 27-9) and many informal collaborations such as Experiments in Art and Technology EAT of Kluver and Rauschenberg in New York in 1966, and from the 1970s on, computer science sources in universities—see Special Interest Group on Computer Graphics SIGGRAPH conferences held from 1973 onwards (Taylor 2014: 44; 111-2) and Bell Labs, University of Utah, New York Institute of Technology, etc

Paul Brown studied at the Slade from 1977 to 1979. His computer-generated drawings use individual elements that evolve or propagate in accordance with a set of simple rules. Brown developed a tile-based image generating system. Despite using relatively simple forms, it would have taken a long time to write a program to produce a work such as this. Brown was fascinated by 'tiling' procedures, but he was also fascinated by various ideas he encountered in Ehrenzweig's book *The hidden order of art* and the notion of accessing the unconscious. Brown chose to use chance procedures as a stand-in for the unconscious, and invented various random number generators in order to position tiles, a means of removing the self and objectifying the art-making process. So this patterned figure with three-shaded hexagons in different orientations was generated in this random fashion.

Brown and other artists such as Lloyd Sumner (Intuitively yours, 1968 Taylor 2014: 121), Kerry Strand and Larry Jenkins (Plexus 1968 Taylor 2014: 71) or more recently Pascal Dombis are exponents of what is sometimes called 'generative art' –that is a mathematical algorithm or sequence of actions is set in motion and creates unpredictable and complex forms from often simple starting conditions. This is the same basis as fractal or 'chaos' art that became very fashionable and exciting in the 1980s. Most artists in this field are and have to be interdisciplinary—they needed to be able to code, especially in the first decades of computing before the user-friendly graphical interfaces were developed in the 1980s.

Pascal Dombis Irrational geometries 2008: Wiki image credit: "Dombis 1687" by Cracksinthestreet - My own work, I took the picture myself. Licensed under Public Domain via Commons https://commons.wikimedia.org/wiki/File:Dombis\_1687.jpg#/ media/File:Dombis\_1687.jpg

As a result of the more 'user-friendly' interfaces—the development of the internet (not the same thing as 'computers', although reliant of computing) and the much more ubiquitous spread of general digital interfaces, the term 'computer art' is now somewhat out of date, giving way the notions of internet art, that is broader and has many more preoccupations than plain computer art. This example I'm going to show you a few more recent examples of computer art—with some differences from these abstract exercises I shown so far. David Em synthetic computer graphic techno futurist fantasy images, using ultra-photorealistic modes e.g. persepol 1980 Em working at Jet Propulsion Laboratories California Institute of Technology (Taylor 2014: 159-161)—and in world of art, dismissed as trite spin-offs from gaming and computer graphics industries.

Acknowledgement of image from Wikipedia "Julian fractal" by GARDEN Licensed under Public Domain via Wikipedia - https:// en.wikipedia.org/wiki/File:Julian\_fractal.jpg#/media/ File:Julian\_fractal.jpg

[SLIDE] for example, this 1990 image again from the V&A 'computer art' page: James Faure Walker has been integrating the computer into his practice as a painter since 1980, incorporating computer-generated images into his paintings, as well as painterly devices into his digital prints. He moves between the tools of drawing, painting, photography and computer software, blending and exploiting the different characteristics of each. His work frequently plays on the contrast between physical paint and digital paint, and sometimes it is difficult to differentiate between the two.

[Faure Walker aims to complete at least one drawing each day, either in pencil, pen or watercolour. These drawings are always abstract, and have their roots in gestural mark making, rather than being figurative drawings of objects. In the same way, the artist uses software packages such as Illustrator and Photoshop to explore digital motifs, or linear marks and patterns. A motif that has been created digitally might then be projected onto a canvas using a digital projector, where the artist can begin experimenting with the pattern or motif in the physical medium of paint. Faure Walker creates digital photographs of his paintings in progress, so that he can try out changes and additions on the computer before adding them to the canvas. He applies this same method to his production of large digital prints such as 'Dark Filament', incorporating found imagery such as a botanical illustration.]

[SLIDE] Picabia *Portrait of a young American girl in a state of nudity* 1915. I want to close with a few questions and reflections on 'machine drawing': we've seen many ways that artists have played with the 'general social technique' of the mechanical industrial age through drawing—through the processes, marks, materials of drawing as much as through subject matter—using print, sharp inscribing lines, mechanical drawing aids. Behind the calm and often deliberately unemotional quality of much technical drawing, there are other much more turbulent forces. I mentioned at the start the fear of machine production, the 'sorcerer's apprentice' nightmare of a demonic fantasy future of empty workerless factories, producing an endless stream of commodities through an unstoppable and relentless 'autogenesis' (Edwards 2001: 28). The unconscious and automatic aspects of machines mesmerised viewers, especially in the wake of theories of instinctual animal urges coming from life sciences and theories of the unconscious from psychoanalysis. Picabia and his friend Marcel Duchamp deliberately explored these erotic elements of the machine; in the 'Bride stripped bare' we see a sad allegory of the frustrated but ceaseless urge to copulate in the poor bachelors, helpless in the toils of the 'love gas' emanated by the chaste and separated Bride, in this image of the literally sparky American girl, Picabia mines the same schoolboy obsessions with machine sexuality and endless but fruitless production.

[SLIDE Money Supply] I want to show in this vein some work from the end of the twentieth century that to me unites some of these anxieties about machine copying, endless replication and the meaning of wealth of value in Blair Robins's 'The Money Supply' artist project. The conceptual artist and graphic designer Blair Robins also reflects on the multiple registers of print communication in his practice, but with reference to contemporary digital graphic styles of assembly. For example in the project The Money Supply Robins presented a critical analysis on the ways in which both art and money are accorded value through agreed systems for creating surface markings, while also thinking about the instant visual recognition aimed for in brand identity. Robins examined the processes and histories of banknote production originally developed through steel engraving in the nineteenth century, and reinvented these characteristic motifs through the glossy contemporary languages of digital drawing. Robins developed a series of digital prints covered with insistent and hypnotic patterning derived from the same geometric procedures that were used to make rose engine patterns on banknotes. Instead of the lathe-driven steel engraved patterns in the original banknote patterns, Robins used a computer-drawing programme that he pushed to the limit, breaking the symmetries of the form, and creating instead by random process images that resembled cloudy viscera built from multiplying fibres (Figure 7.1). This project deliberately invoked problematic aspects of digitised production in relation to the value given to artworks and money by manipulating the strategies of security printing. In fine art, printing in multiples threatens value based on notions of originality and authenticity. Digital imaging, severed from the baseline of observed reality that was so valued in photographic image capture, generates deceptive illusions. Banknote production depends on an artificial and mutual agreement to trust in the purchasing power of millions of identical scraps of paper. The Money Supply references the procedures of banknote design with

their dense patterning of reiterative marks where every space is filled, and filled again, with abstract patterns and micro-lettering that compete in information overload, while the obsessive serial permutations of pattern also conjure the compulsive actions behaviour of repression and nightmare. Robins joined many references to moments of art and design history in this project, and combined them through contemporary languages of commercial display in print. Although the image shown in Figure 7.1 is in simple black and white, The Money Supply project also presented a suite of large colour poster-like prints in glossy high definition, invoking the appearance of corporate print campaigns, in brochures, banners and advertising. By exploiting technologies of image reproduction, and playing on the psychology of repetitive behaviour, Robins considered the continuing role of printed communications in providing an envelope for systems of value that are normally only discussed in the abstract.

Taylor, Grant D. (2014) When the machine made art: the troubled history of computer art London and New York: Bloomsbury Greene, Rachel (2004) Internet art London: Thames & Hudson Rush, Michael (1999) New media in late 20th century art Brown, Paul, Charlie Gere, et al, eds (2009) White heat cold logic: british computer art 1960-1980 Cambridge, Mass.: MIT Press Gere, Charlie (2002) Digital culture London: Reaktion



### ARBEIDER

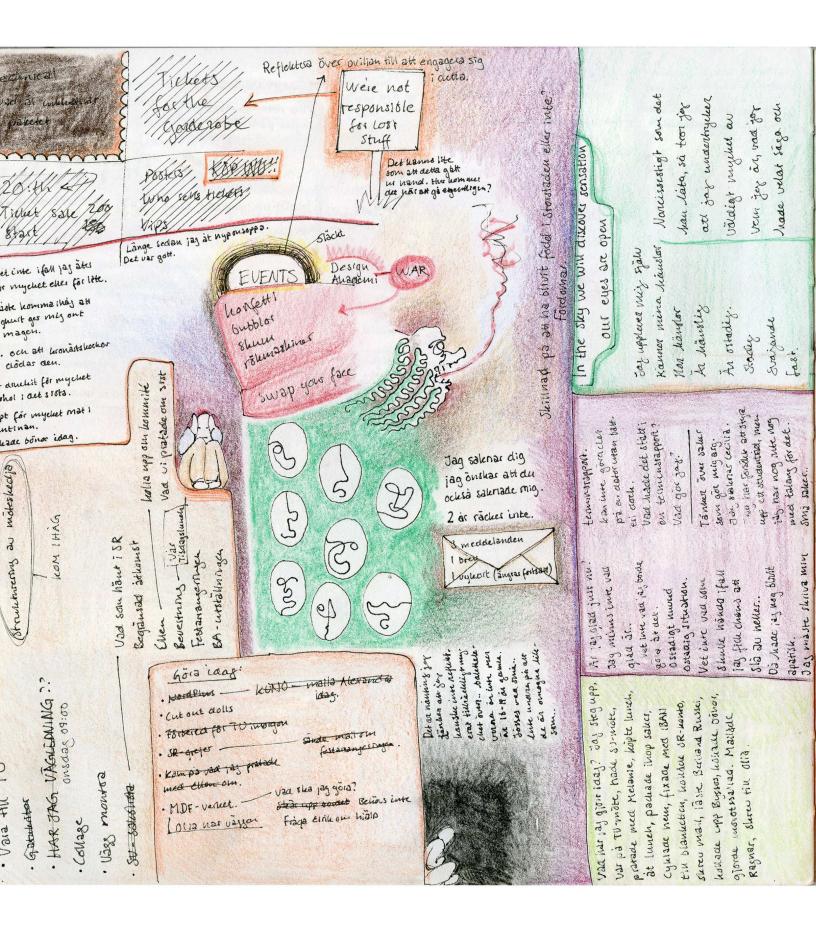


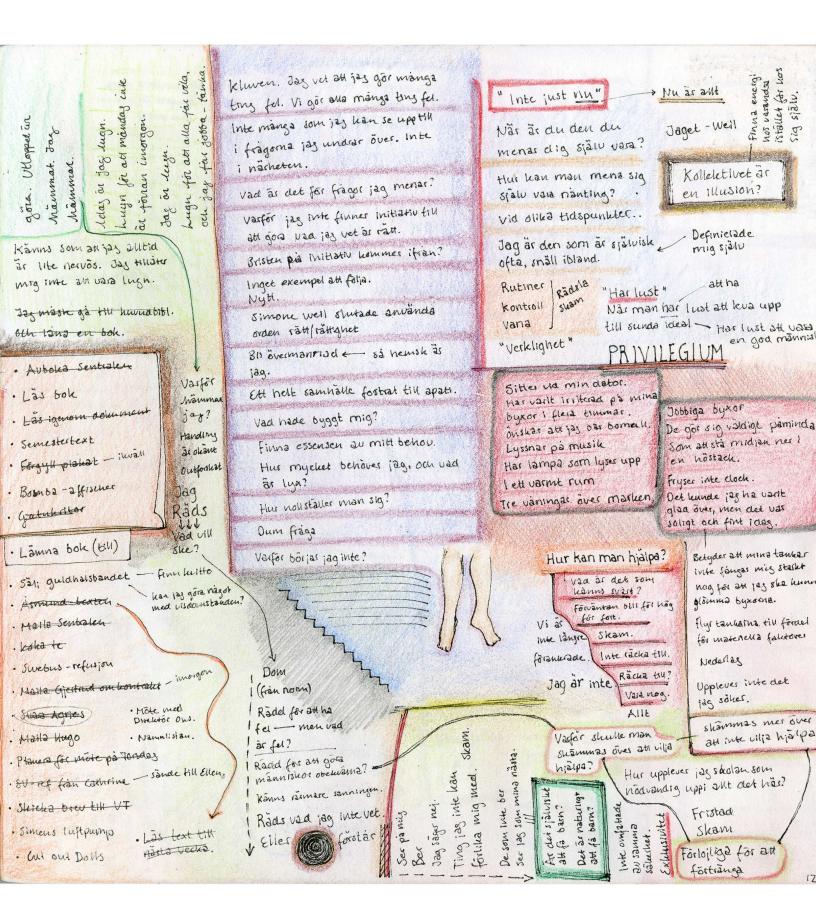




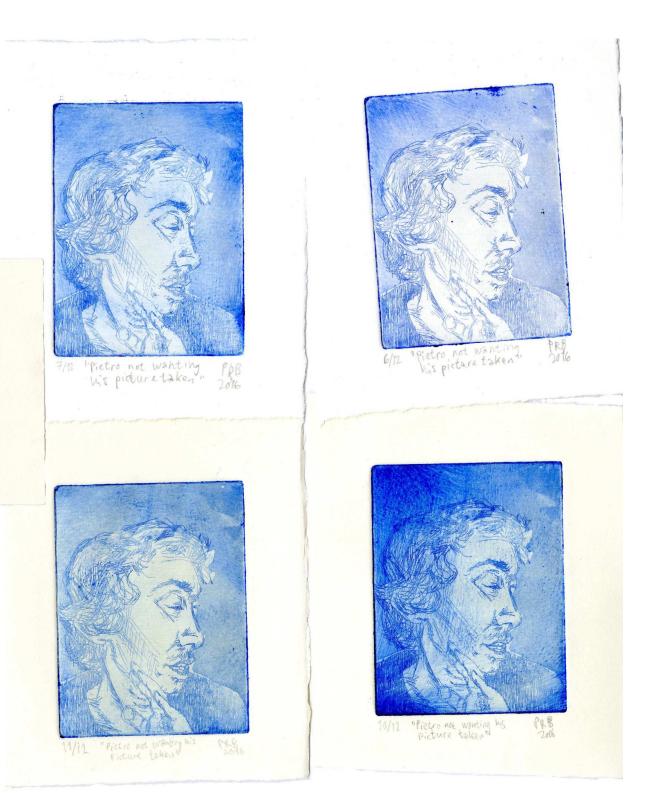
#### «THE NEW MEMORY LANE»

I WANT TO TELL YOU SOMETHING ABOUT MYSELF I'M IN EVERY CELL REFLECTION AND THOUGHT I'M IN YOUR SLEEP AND I WILL ALWAYS WAKE AGAIN AGAIN AND AGAIN JUST LIKE YOU UNTIL THE DAY YOU ARE NO MORE I'M NOT VISIBLE BUT CLEARLY ENOUGH THAT YOU TALK WITH ME ACTUALLY I SHOULD NOT BE HERE BUT AS YOU CAN SEE I'M CAPTURED I CAN NOT ESCAPE YOU CAN JUST MOVE YOUR GAZE LOOK AWAY AN ESCAPE ROUTE NOT ME I'M STILL HERE AND THIS TIME I'M CAPTURING YOU **RIPPING YOUR IDENTITY** LEAVE YOU IN PIECES INHIBITED POOR FRAGMENTED I MISS TO BE HONEST WITH YOU BUT NO I BETTER CONQUER THE SCENE ACTING WAS ALWAYS MY FAVORITE ISN'T IT SAD? SUCH A POTENTIAL









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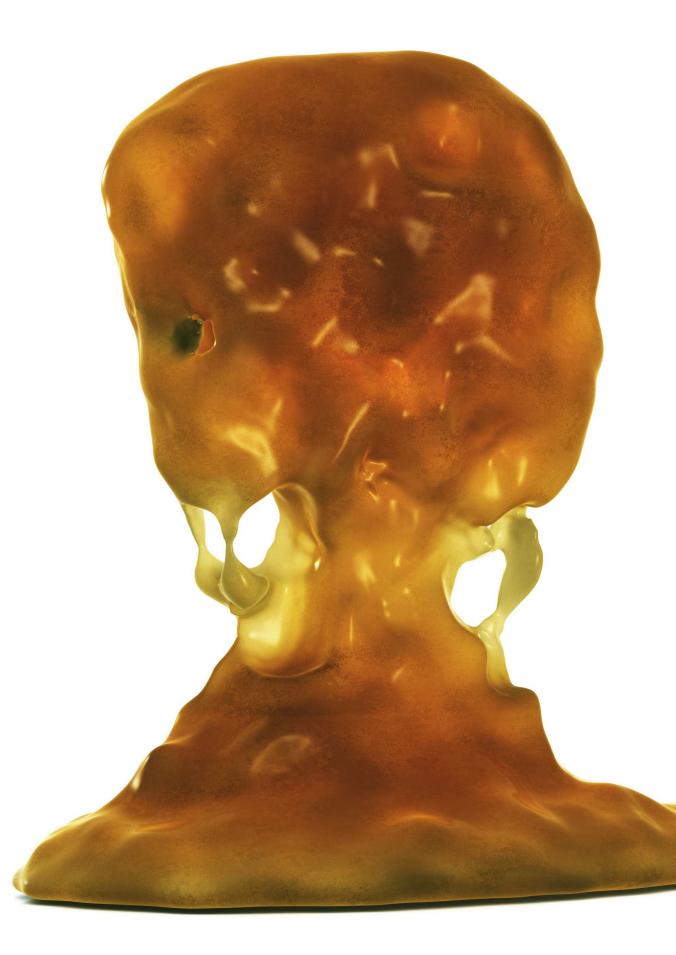








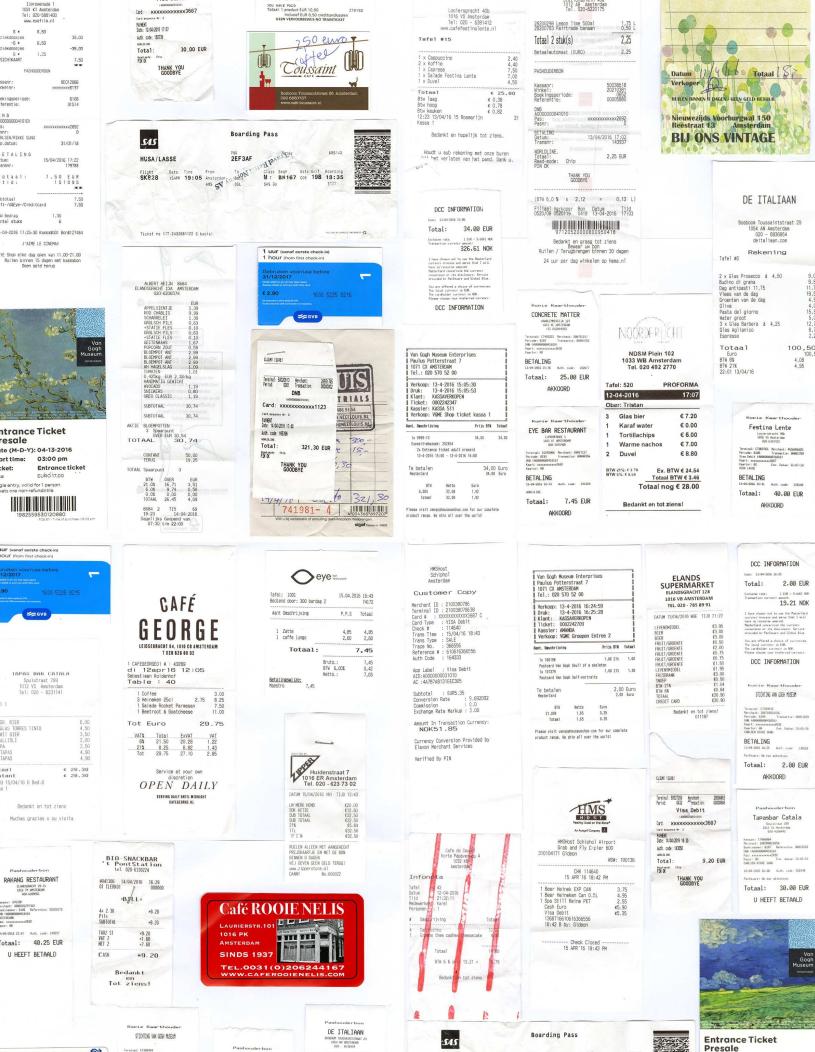




Because the essence of technology is nothing technological, essential reflection upon technology and decisive confrontation with it must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it. Such a realm is art.

Heidegger, from «Questions concerning technology/Vorträge und Aufsätze» 1954

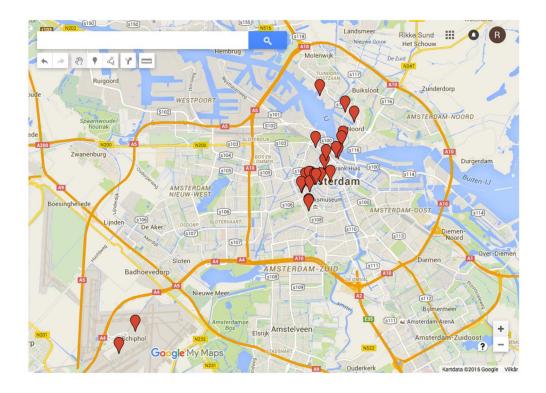


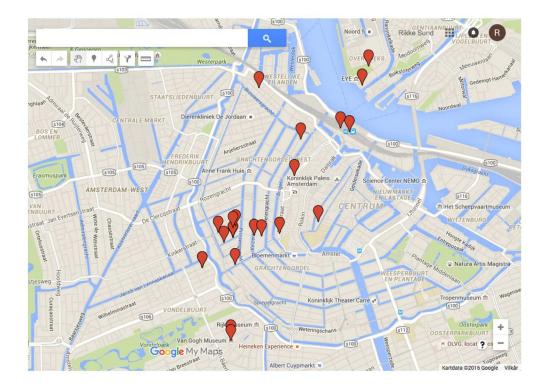


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Presale









### Tilstander

Karen Disen



Our digital selves, hva viser det til? Hva har det digitale med vårt selv, - vår identitet å gjøre?

Det samles på informasjon fra alle steder en bruker digitalteknologi. Siden jeg bare er en bruker er jeg ikke eier av hva jeg legger inn. Det er dem som har laget det jeg bruker som definerer seg som eiere av alt som kommer inn. Å være produsent av mening, egne tanker blir noe jeg selv ikke har hele råderetten over om jeg deler dette på nettet. Jeg får dermed et «nett» rundt meg. Jeg aner ikke hva av dette som kan bli brukt når. På grunn av dette har jeg bestemt meg for å være irrasjonell. Jeg kan doble alle søk jeg gjør på nettet. Det ene er det jeg vil vite noe om og det andre noe fullstendig vilkårlig. For da framstår jeg ikke samlet. Det blir ikke fullt så enkelt å finne mønsteret mitt. For hva som er mitt reelle søk og hva som er bare noe helt vilkårlig kan bare jeg vite og servere kan foreløpig ikke gjette Slik kan jeg lage et noe utydeligere blide. Min digitale profil blir derfor litt rar.

Å lage skaper mening.

Å gjengi en skikkelse slik at den sier noe er utfordrende. Å samle noen forskjellige tilnærminger til det å gjengi en skikkelse har jeg gjort for å få sagt noe om menneske og få sakt noe om fremstillings måte samt tilstander.

1. En visuell klar gjengivelsen kommer nær innpå en ytre materiell sannhet, - det ligner, hun kjenner jeg.

2. En ruglete ståltrådstrek ut i luften som balanserer på sine to ender, blir fra noen synsvinkler tydelig en som riser seg opp, eller bøyer seg sammen. Å kjenne igjen noe menneskelig gjør vi fort. Det er ikke mye som skal til for å fatte helheten og at det et menneske det handler om.

 Et flerstemtkomposisjon med mange skikkelser i sterke bevegelser med stor rekke vidde, kanskje forvirrende mange muligheter. Det er virksomme krefter både i skikkelsene og utenfor dem.

4. Hva skjuler seg i det indreliv? Det er mye som er utilgjengelig for en selv og også mellom mennesker. Farger og følelser, klar og rufsete kontur, en halvpart gjennomsiktige med kompliserte ornamenter den andre dekket og lukkede øyne.

5. Bevegelse penselstrøk, - en dans?

6. Portrett bak røde blomster. I livet er bevisstheten om at døden alltid følger livet en sannhet.

Så lenge vi reflekterer over våre valg og vår liv kan vi finne andre svar og lete videre for det er mye å gjøre. Det er på tide å ruste oss for å bli i stand til å rykke på stivnede former i samspillet mellom mennesker.

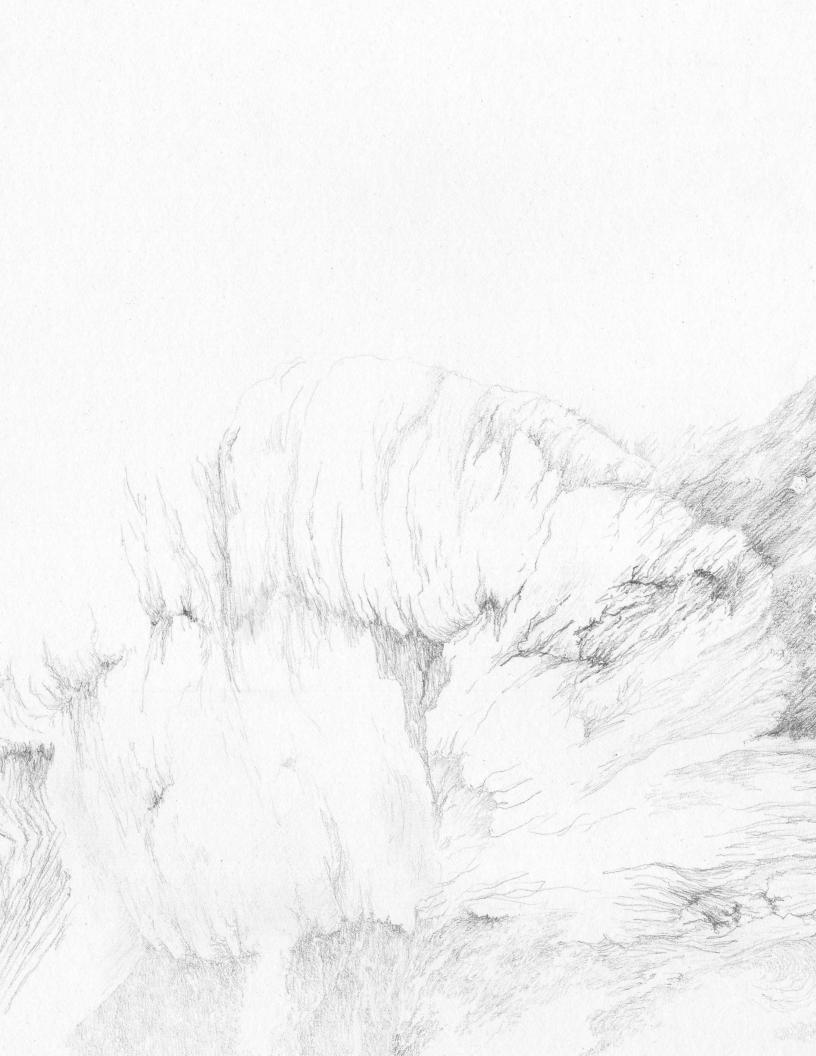


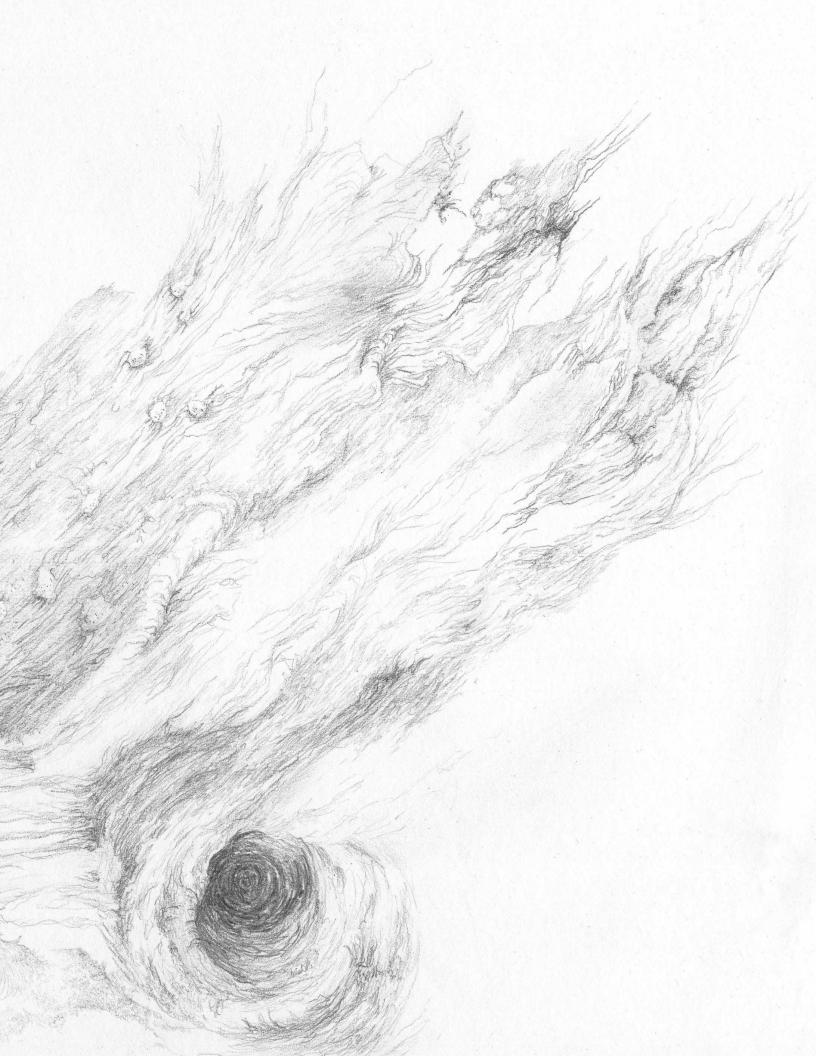




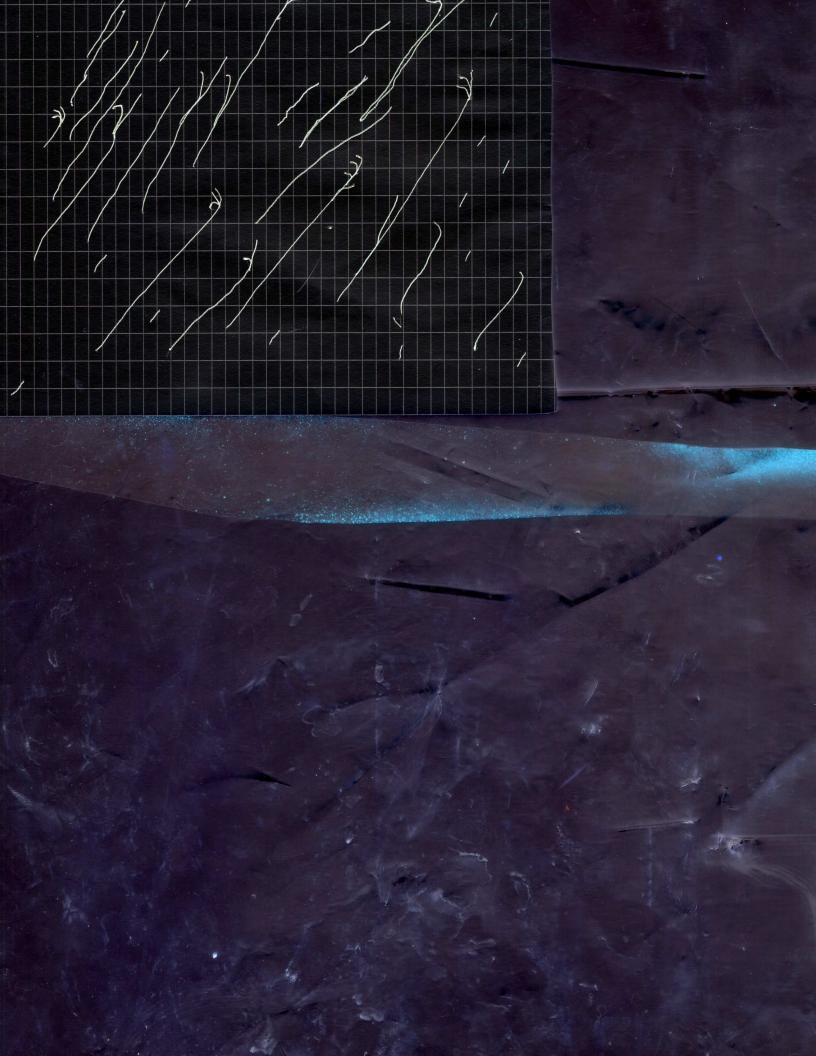














### Virkning i olika former

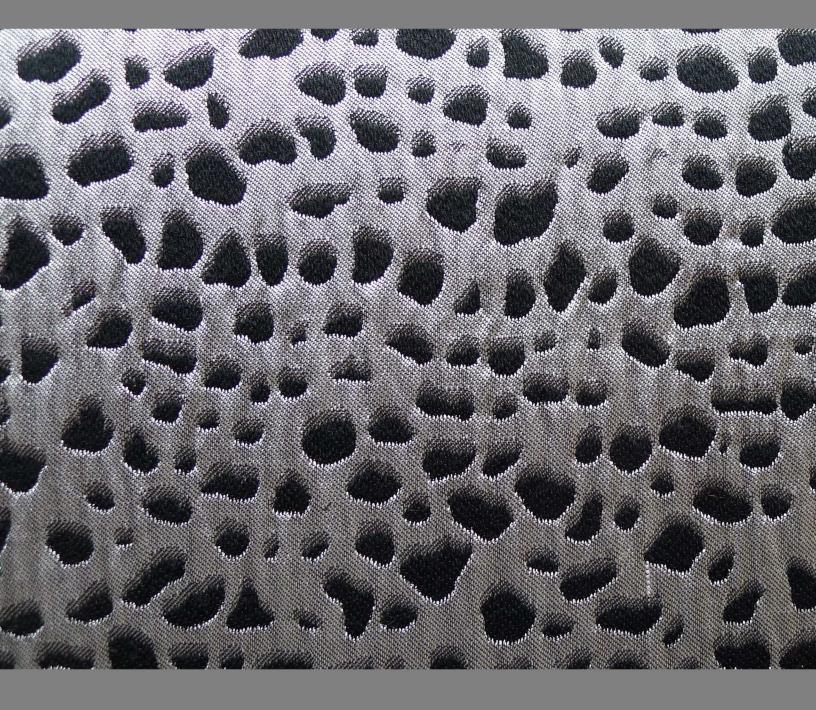
Jag utforskar förhållandet mellan den tredimensionella handvirkningen och den tvådimensionella digitalt textilprintade virkningen.

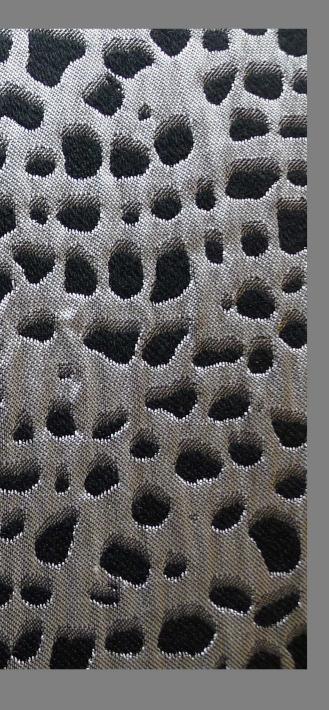
Genom varierande struktur, storlek, materialitet och teknik vill jag experimentera i upplevelsen av vad de olika uttrycken ger för resultat. Hur vi då tolkar virkningen och vilka sociala och historiska kontexter vi tillskriver de virkade objekten.





Når jeg tar ett steg ned Inn eller dypt ned i det urørte Det som har fått lov til å ligge der uberørt Vil det ta skade eller bli ødelagt Eller er det jeg som vil bli berørt På en måte som aldri kan bli ugjort Vil det skje noe ugjenkallelig Vil jeg miste roen, likevekten eller fatningen Vil det kjente og trygge noen gang bli trygt igjen Vil jeg noen gang få hvile eller fred Etter at jeg har sett og forstått Noe som jeg ennå ikke har sett og forstått Har det allerede gått for langt Eller er det allerede for sent Er det ingen vei tilbake Er det skam å snu Jeg forstår nå helt plutselig at jeg kan stoppe Jeg kan trekke meg ut av det og gå videre Uten å gå i dybden Men jeg har fått et stempel på meg Det har allerede merket meg Og jeg kan ikke bli den samme Fordi jeg har forstått noe Jeg ikke har forstått eller sett før At det er noe mer Noe veldig mye mer Og da er jeg ikke lenger uvitende Og med denne kunnskapen Kan ingenting bli som før jeg fikk den I så fall vil jeg lyve for meg selv Lyve meg til uvitenhet Og hvem kan leve lykkelig med det For det er vel det som ligger der, bak alt Drivkraften, livslysten Det å være lykkelig Det er det jeg lengter etter Det og bare det Når alle lag er fjernet Og jeg kommer inn Helt inn Jeg bærer den i meg nå Lykken Og samtidig vet jeg At lykken kan jeg aldri eie Den kommer som en venn Den stikker innom Og blir der på ubestemt tid Jeg kan legge alt til rette for dette møtet **Disse stundene** At de skal vare så lenge som mulig Og vi kan møtes lykken og jeg Jeg kan likevel ikke holde på den Eller den på meg Vi er som to frie mennesker Lykken og jeg



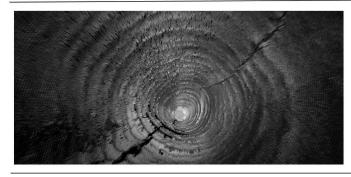


## 

# AKTIVITETER

# "OUR DIGITAL SELVES"

kunst&håndverk agenda



### Friday, January 15 10:00 – 16:00 Kunstnernes Hus Wergelandsveien 17 Oslo

The theme of this first Agenda seminar in 2016 is the continuous and rapid development of (digital) technologies, and how this ubiquitous presence is influencing our analogue selves and our everyday life. This implies questions concerning how we are seeing ourselves through technology and how we can - and why we should engage with the continuous flow of new technologies.

#### 10.00 Intro by moderator, headmaster at KHiO: Jørn Mortensen

10.10 Torgeir Waterhouse, Director IKT Norge, "Digital representation and presence in digital societies"

11.05 Kate Cooper, artist talk: "RIGGED"

LUNCH 12-12.40

12.40 Axel Tidemann, Research Scientist, Telenor Research "Artificial Intelligence in Artistic Applications"

13.30 Prof Susanne Winterling, artist talk: "Vertex, Life of CGI Images and the Materiality of Touch"

14.05 Prof Jill Walker Rettberg: "Seeing Ourselves Through Technology: How We Use Selfies, Blogs and Wearable Devices to See and Shape Ourselves"

Moderator: closing words

PAUSE 10 min

#### Kl. 15.00 Movie screening: Atelier Bolombolo:"#Artoffline" (61min)

**Torgeir Waterhouse** works as the Director for Internett and New Media at IKT-Norway. He has especially focused on cases regarding copyright issues and digital medias. He is one of the founders behind the movement "Lær kiddsa kode" ("Teach Kids Programming") and MachUp; an Norwegian tech accelerator.

Kate Cooper is a British artist working with CGI technology in her artistic practice, raising questions about the digitally constructed body; the post representational female subject, and the agency of these representations. The engagement with the feminist discourse is a premise behind her work.

Axel Tidemann is working as researcher at Telenor Research, working with artificial intelligence and machine learning. In his Phd Thesis he constructed a artificial drummer, which he learned to play the drums. Some of Tideman's work has been presented as part of art installations.

Susanne M. Winterling is an artist currently living and working in Oslo and Berlin. She holds a MA in philosophy, is one of the founders of the art collective Akademie Isotrope, and is a professor of contemporary art at Oslo National Academy of the Arts since 2011. Winterling is working across a variety of media, including film and photography,

Jill Walker Rettberg is professor of digital culture at the University of Bergen. She is writing/teaching about computer games, digital art, electronic literature, social media and blogging.

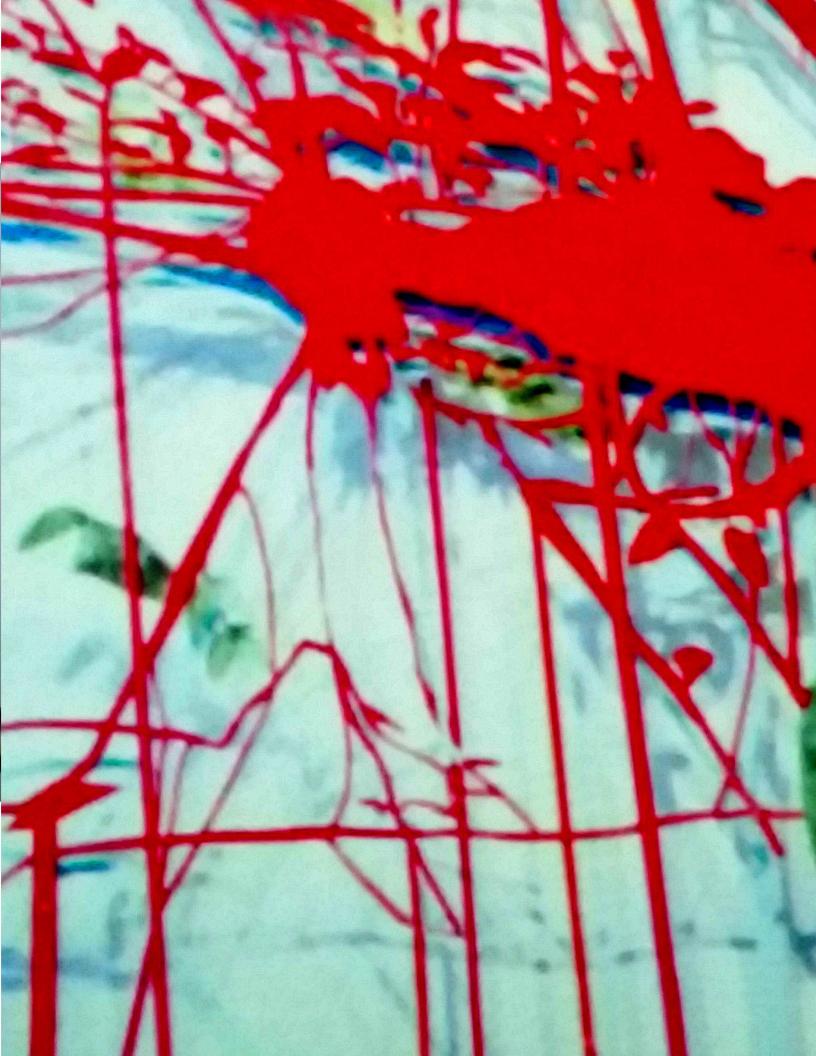
#ArtOffline is a feature documentary exploring contemporary art's problematic relationship with technology; and its intersections with the internet and digital media. Director - Manuel Correa

The Art and Craft department seeks to elaborate on the relationship between art and life, on matters of materiality (production, sustainability, the global), on design and architecture, and on artistic practice in social and political contexts in a contemporary perspective. The department's ideology derives from the early British Arts and Crafts movement and the German Bauhaus workshop traditions with the ambition of integrating art into the social, public and private spheres. The department offers an art education in which the contextual significance of materials is as important as their intrinsic properties.





Forelesning med Adriane Colburn



### OM DLAB

**dLab** skal utforske digital teknologi både som konsept, som kontekst og som verktøy for en kunstnerisk praksis.

Utgangspunktet for aktiviteten ved dLab er problemstillinger knyttet vår omgang med teknologi. Ved å se dette i et bredere kulturelt- sosialt- og politisk perspektiv skal studentene utvikle en kritisk bevissthet i forhold til dagens og morgendagens digitale teknologi. Basert på kunnskapen om dette skal studentene gjennom praktisk arbeid undersøke hvordan dette kan omsettes til kunstneriske problemstillinger, praksiser og arbeider.

Aktiviteten i **dLab** vil ha varierende form og er satt sammen av demonstrasjoner, seminar, workshop, forelesninger, diskusjoner, tekniske øvelser, utstillings-besøk, atelierbesøk, gjestelærere, temaintroduksjoner, presentasjon av aktuelle kunstnerskap, egen-arbeid, tekstlesing, individuell veiledning og oppfølging.

**dLab** har en klar forankring i det medium og materialbaserte. Gjennom sin ustabile karakter betraktes det digitale som et plastisk materiale. Som en metode kan digitale prinsipper og teknikker være modell for alternativ tenkning.

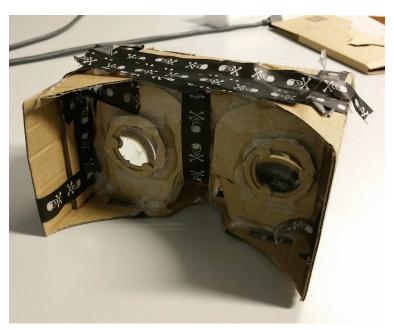
Verkstedet dForm er arena for det meste av **dLabs** aktivitet. dForm er KHiOs verksted for digital form og digital fabrikasjons-teknologi. Gjennom praktisk bruk skal vi utforske disses kreative potensiale og tilpasse disse til den enkelte students verkstedpraksis.











### Om K-LAB Tegning

På K-LAB Tegning er vi opptatt av tegning som utvidet felt; tegning som verktøy og uttrykk, fra blyanttegning på ark til tegning i rom, tegning som bevegelse og overgangen til 3-dimensjonal tegning. Refleksjon og kommunikasjon rundt tegningen som faglig felt, og hvilken funksjon tegning har i samtiden er også viktig. Innholdet på K-lab tegning vil variere fra semester til semester, slik at enkelte temaer/problemstillinger kommer ca hvert 3 år. Dette semesteret vil vi fokusere på å etablere tegnemiljøet på Avdeling Kunst og Håndverk og i felleskap utvikle K-Lab Tegning.

Undervisningen har varierende innhold; forelesninger, diskusjoner, tegneøvelser, utstillingsbesøk, temaintroduksjoner, workshops, egenarbeid, tekst, diskusjoner, gjestelærere og individuell oppfølging/veiledning. Vi henter inn problemstillinger fra studentenes egen kunstneriske virksomhet, og være innom ulike kunstnerskap, se på spørsmål i samtidskunsten, og på ulike teknikker, metoder og verktøy.

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VELFERDSTINGET



Horning .

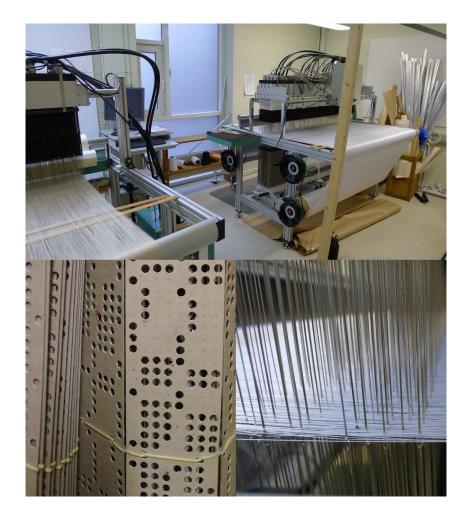




Digital Tekstil Lab skal sette fokus på og løfte refleksjonen rundt kunstneriske muligheter i det digitale feltet, både innen filosofisk tenkning, i forskning og i praksis . Vi vil fokusere på hvordan ny teknologi endrer vår sansning, våre metoder og bruk av materialer og teknikker.

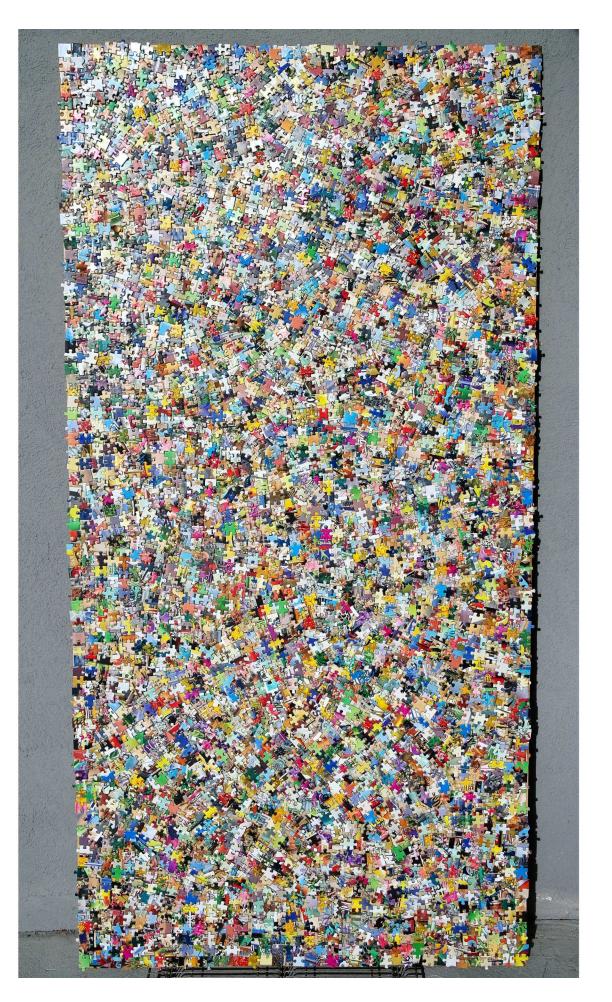
Det opprettes møtepunkter med D-lab og tegne-lab. med felles forelesninger og diskusjoner.

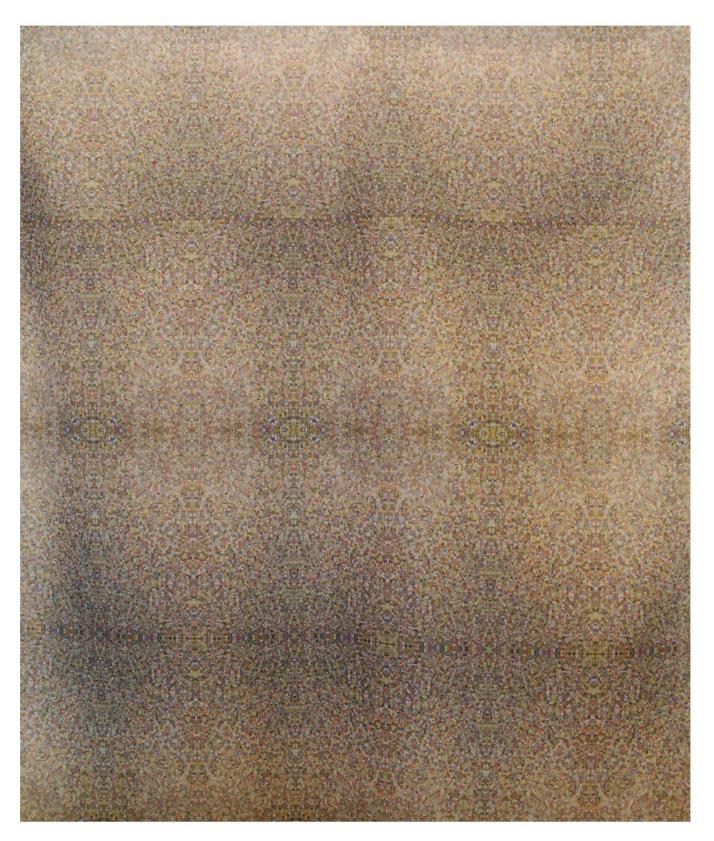
Digital Vev og Tekstil Print er valgbare kurs knyttet til Lab-en.











Originalplate og Småbrikkesilke (Tekstil print), Karin Wyssenbach Røsaker

KUNSTHØGSKOLEN I OSLO OSLO NATIONAL ACADEMY OF THE ARTS KUNST OG HÅNDVERK ART AND CRAFT