

Digital code

At the centre of discussion about digital media language and the wider debate over the impact of new technologies on media, stand two key concepts or terms, 'code' and 'digital'. Understanding digital media crucially involves an understanding of what is entailed in the digital and its code. Such an understanding of the digital, as it relates to digital media, is best approached by a comparison with another term, the 'analogue'. This comparative approach has been adopted by a number of different writers when discussing the impact of digital technology upon specific mediums. Film and photography in particular have been analysed and discussed in terms of the historical shift from analogue to digital code.

The terms post-photography or digital photography are markers of a set of differences identified between the analogue medium of photography, based in chemistry, optics and mechanics and the new digital medium of photography based on optics, electricity and computing. Likewise, film has also been approached through a contrast of analogue and digital technologies in discussing the technical form of digitised video and the cultural form of film language (Manovitch 2001:50). To a lesser extent computer animation has also been explored through a comparison with previous forms of drawn and cell film animation (Darley 2000; Telotte 2008:59). In all three cases cited here digital media has been contrasted with a previous analogue form. In all three cases digital code is seen as the fundamental basis for considering changes in the nature and use of the specific mediums of photography, film and animation.

ANALOGUE MEDIA

All recording mediums prior to the advent of digital encoding can be defined as analogue. Photography, film, magnetic sound tape, vinyl recordings and videotape

are all analogic in nature. Drawing, painting and sculpture are also analogical. All of these media contain material processes in which continuous physical inscriptions of some kind are made in or on surfaces. The brush marks on a canvas, ink rubbed into scored lines on an etching, the silver salts of the photographic print or the electronic magnetic signal on a piece of tape are all material equivalents. In all these examples one set of physical properties, light patterns, sound waves, etc., are being registered and ultimately inscribed into another physical medium. The sound waves of the human voice, spoken, or sung over the duration of time, are translated into patterns of signals on electro-magnetic tape. The light, cast across a rough wooden table top, becomes an analogous set of tonal differences registered by the light sensitive silver salt crystals held in suspension on the emulsion of the unexposed film in the camera. Both are transcriptions of one set of properties, light and sound, into another, chemicals and electromagnetic tape, which over time were developed as part of the technologies and mediums of sound recording and photography respectively. Another way of putting this is to say that the technological medium has reconstituted or transcribed the original voice or visual scene.

Analogue is a term used to define something as 'being like' or resembling something else. In the case of the photography the light and dark tones of the chemical grain of the negative is similar to the reflected light pattern of what was framed in the lens of the camera. In the case of television the light and sound of a scene is analogous to the audio-visual signals that are recorded continuously on electro-magnetic tape. An analogue sound recording on tape can be displayed on an oscilloscope as a visual representation of sound waves – the lines show all the different aspects of the signal. Simplistically, the lines represent amplitude (volume in audio – luminance [brightness] in video) – the distance from one peak (or trough) to the next represents frequency.

An easy, everyday example of an analogue recording would be a photocopy – the copy is analogous, but not identical, to the original, the image is always slightly degraded. If the photocopy is then copied and this copy is copied – the quality of the image gets progressively degraded. The same applies to analogue video and audio recordings. So analogic media record and store 'information' through some kind of material transcription, which transfers the configuration of one physical material into an analogous arrangement in another. The photographic negative is analogous to the light pattern, the videotape is analogous to sound and image recorded over time. One hour of unedited videotape equalling one hour of real time. The physically recorded material is culturally and technologically coded, so that the machines and their materials, together with our knowledge of seeing and listening, reconstitute the original through the analogy.

The continuous nature of analogue media marks a crucial difference from the digital. Electro-magnetic tape is a continuous surface upon which sounds are transcribed. The relationship between the sound and its recording is also continuous. The same is true for photography in the image forming properties of light sensitive film and papers. The photographic negative records the latent image of reflected light in a

continuous relationship to the light as it strikes the surface of the film in different intensities. Putting this the other we can say that, neither magnetic tape, nor photographic film, record or transcribe the original signals by breaking them down systematically into units or bits. In analogue mediums there is no code as such, only the continuous medium of transcription.

Analogue media developed as part of the industrial revolution and the mass production of artefacts by a system of the division of labour and the replacement of human labour by machines. As such analogue media reflect the processes of standardisation in which production was divided into separate, simple, sequential activities, which could be endless repeatable such as the frames of a film or the dots of the half-tone process of newspaper photographs. However, analogue media were not interchangeable and each developed its own materials, properties and apparatuses. A camera could not be used for recording speech, just as the newspaper could not reproduce moment. Of course, film could reproduce a visual moment and sound but only by combining or synchronising the separate analogue media of film and magnetic tape.

Analogue media can now be defined retrospectively from the vantage point of the digital as continuous data or information in which the axis or dimension that is measured has no apparent indivisible unit from which it is composed. Conversely, we can understand that converting continuous data into a numerical representation is digitisation.

BINARY DIGITS

In contrast to the analogue the digital medium is not a transcription but a conversion of information. Digital media store information as formal mathematical relationships in abstract electronic forms. Digital is the generic term used for the processing and recording of information using binary code, the digits 1 and 0, which are represented in the registration of two different voltage levels in electronic circuits or in transit as electronic impulses. A digital file, whether it is a text, image or sound file is effectively a mathematical set of instructions, a long string of zeros and ones, written in computer code. The digital medium is defined precisely by the fact that it creates a systematic, intermediate code of discrete units. Digital code breaks everything down into uniform and exchangeable bits (or bytes). The full significance of this difference between analogue and digital takes time to appreciate, but it is this single fact of digital code, which accounts for most of the radical possibilities in the convergence of media and the creation of digital media.

The strings of binary digits are founded as mathematical formulas or algorithms, which constitute the digital code. It is this feature of digitisation which has meant that images can now be thought to exist as electronic data and not as the physical medium. Digital data is created by capturing and sampling at regular intervals.

DIGITAL CAPTURE

Capturing is achieved through interface devices with single or networked computers. The keyboard and mouse, for instance, are a means whereby a computer software program can capture the typing of this text. If I was in a drawing program right now I would be using the mouse and its screen avatar (an icon), to designate shape and colour which would be captured, or using a wackboard with a 'pen'. More easily grasped would be the example of image capture through a digital recording device. In the case of the light formed image of photography, a digital camera has a charge-coupled device (CCD) image sensor in the place of the older analogue film which captures an intensity and gives it a numerical, binary value. The analogue characteristic of chemical photography – the grain, tone and colour of an image – is simulated by assigning a value to a pixel in a digital image. With video it is the software that grabs frames, which can be streamed as video.

SAMPLING

The frequency of sampling determines the resolution of the data. Sampling turns continuous data into discrete data, which is quantified by being assigned a numerical value. Each sample intensity is converted to an integer number value.

STORAGE

It is the translation of the analogue image or sound into a numerical code that now enables them to be electronically stored and transmitted. What happens to any analogue media work once it has been digitally captured and electronically stored within the network of networked computers radically changes the ways in which we regard the work, how it can be used, who owns it and how it is controlled. Digital photographs circulating freely on websites and attached to emails are now regarded as 'information' along with everything else. Most obviously the digital image can be manipulated, combined and re-contextualised in any number of ways, as can textual and sound files.

CODE

It is the coded nature of digitised media that has resulted in a photographic or sound recording being understood as 'information'. A digitally produced, or reproduced media object becomes subject to algorithmic manipulation and it is the system of algorithmic coding, which allows us to now think of media as conforming to programmable rules. The importance of digital code is underlined by Manovitch (2001:27–48) who describes five principles of digital media as numerical

representation, modularity, automation, variability, and transcoding. This is a useful taxonomy in which each term describes how digital coding treats a surface or a frequency as a set of separate elements that retain their separate identity while being able to be combined into more complex structures and functions. The above account of digital code functions well at a technical level. It is the account of the technical transcription or encryption of one form into another. Manovich's taxonomy goes some way to helping us see that digital media artefacts are products/outcomes of a specifically technical set of possibilities. Modularity creates the ability of digital media to clone any part of its code and make new combinations, for example, while variability creates the characteristics of mutability and change and so on. What a technical account of digital code doesn't do is help us understand how any digital media artefact means anything, other than at the very abstract level of saying all digital media is information. In order to understand how digital media artefacts mean anything we are thrown back into the cultural realm of language and it is here that we find the term code given precisely the role of explaining how meaning in language operates.

CULTURAL CODE

We have indicated how binary code is an essential technical characteristic of electronic digital media and computational systems, but code is also a central part of the analysis of cultural systems of communication. The concept of code is not new to thinking about digital technology. Code has been a broader way of thinking about communication throughout the twentieth century, both technically in analogue apparatuses and culturally in the analysis of meaning in language. The very idea of a media message involves the concept of code. Media messages are encoded by a sender and decoded by a receiver. In media and cultural studies code is generalised as, the rules or conventions by which communication takes place within a given medium. The coding and decoding of messages in newspapers, photographs, or Hollywood cinema are understood to have developed over time and subject to change because cultural rules can be broken and new rules learned. Code here is being used as a the collection of rules at any one time that govern the overall construction of film genres such as the western, thriller, comedy or those of a television soap-opera. In all of these cultural forms, codes and conventions organise the structuring of the story, plot, characters, acting, camera positions and lighting.

LINGUISTIC CODE

The specific analysis of linguistic code owes its origins to the foundational work of Ferdinand de Saussure (1857–1913) who developed the systematic study of signs. The study of sign systems was late taken up and applied to a wider range of ideas

and objects, which could be said to be sign systems. Claude Levi Strauss (1958) applied a structuralist approach in anthropology to the study of totems and taboos. Roland Barthes (1975) applied a semiotic analysis to photography and cultural activities such as writing, fashion, exhibitions and film. The theoretical work of Jacques Lacan (1901–81) was an application of structural linguistics to Freudian psychoanalysis. But it was Ferdinand de Saussure who first developed the concept of language as a system of signs, in which the sign, composed of the signifier and signified, is the basic unit of meaning.

LANGUAGE AS A SYSTEM OF SIGNS

Conceptually the sign is the smallest unit of meaning in a system and is composed of the signifier and the signified in which the signifier is the material existence of the sign, while the signified is the mental concept to which the signifier refers. The relationship between the signifier and signified is arbitrary because there is no necessary relationship between the signified. The relationship between the sign and its referent, the object or idea to which it refers is arbitrary within the system and is governed by cultural rules and conventions.

THE ARBITRARINESS OF THE SIGN

In the writing of Roland Barthes we can see the application of a semiotic analysis to the medium of photography. Barthes's analysis of the photograph returns us to the analogical nature of the medium of photography. On the surface the photograph does record, or sample and store, in digital terminology, visible reality into the discrete grain of the negative. On closer inspection, literally by physical enlargement the grain of the photograph cannot be meaningfully identified as units in a larger system, which could be defined as a code. This is why Barthes calls the photograph the perfect analogon and why he went famously to analyse the photograph as a message without a code. In 'The photographic message', Barthes develops a structural analysis of photographic meaning and in doing so identifies what he calls

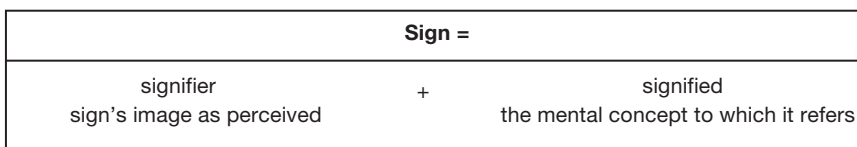


FIGURE 16.1

Diagram of Ferdinand de Saussure's analysis of the sign composed of two elements, which is central to semiological analysis

'the photographic paradox'. The photograph, unlike language, has no systematic structural code because the analogue medium of light sensitive chemicals on the celluloid negative, which forms the image cannot be broken down into discrete units. In the photograph there is the scene, which is a reduction but not a transformation of the literal reality. It is not necessary to divide the photographic message into units and signs, which are different from the object, as in language, there is no relay, no code, the photograph is an analogon. This is why Barthes says that the photograph is at this level message without a code, it is a continuous message. There are other messages (analogue mediums) without a code, yes, drawing, painting, cinema, TV, theatre, but they have an immediate and recognisable supplementary message which is the treatment and style. Barthes introduces a way to distinguish between the order of these messages:

- The analogon itself is the *denoted* message – the literal scene – the continuous message.
- The cultural message is the *connoted* message.

However, this duality of messages is not evident in the photograph. In the photograph the mechanical analogon, the light formed image fills its substance leaving no room for a second message, he calls this analogical plenitude, however this purely denotative status of the photograph is mythical – that is, its objectivity. The analogue photograph is not a transcription but a direct inscription of light, which makes it a message that is continuous with its referent. Barthes says that since meaning cannot proceed from this 'first order' of the photographic message, because the photograph has no code, then meaning has to develop through a 'second order', which is a cultural code of associative, or connoted meanings. The paradox is thus the co-existence of two messages the one without a code (the photographic analogue) the other with a code (writing, treatment, rhetoric of the image). This is a paradox not because of a collusion of the two messages, but that the connoted messages develops on the basis of a message without a code. The reason why it is important to understand the photographic paradox is because digital technology introduces a discrete technical code into the photographic image. As we have said the digital camera samples light values and converts them into a binary code, which are then given discrete values as pixels. The 'death' of analogue photography and the ushering in of the post-photographic era is based precisely upon the substitution of a digital code for the perfect analogon, which was the chemical photographic negative. Crary argues that we are in the midst of 'an image revolution in the formalisation and diffusion of computer generated imagery heralds the ubiquitous implantation of fabricated visual spaces radically different from the mimetic capacities of film, photography and television' (Crary 1999:1). Much of the general argument that the photographic image could no longer be trusted, ignored the fact that the photograph has always been a selective and constructed document, which gains meaning in its passage through technical mediation and cultural context. The fact that the digital image does have a technical

Table 16.1 Diagram distinguishing the technical differences between analogue and digital media

Analogue	Digital
transcription: the transfer of one set of physical properties into another, analogous, set	conversion: physical properties symbolised by an arbitrary numerical code
continuous: representation occurs through variations in a continuous field of tone, sound, etc.	unitised: qualities divided into discrete, measurable and exactly reproducible elements
material inscription: signs inseparable from the surface that carries them	abstract signals: numbers or electronic pulses detachable from material source
medium specific: each analogue media medium, bounded by its materials and its specific techniques	generic: one binary code for all enabling convergence and conversion between them

code has led to changes in photographic practice and a culture's reception of digital images. The digital code of the photographic image destabilises the relatively fixed analogue image and adjusts us to the mutability of code. This adjustment is still taking place in the emergent practices of digital image production, which make the intentional processes of image creation more apparent and compels us to be more knowing about how images are created.

Digitisation is also the effective precondition for the entry of photographic images into the flow of information that circulates within the contemporary global communications network. It is the translation of the photographic image into a numerical code that now enables it to be electronically transmitted and effectively become electronic data.

Case study

Curating the networked image

Interview with Katrina Sluis

Can a still image be still any more, or is it always changing when it is on a network? Photography has produced some of the most important imagery of the last century but digital processes through hardware and software have changed what a photograph can be and how it can operate. This conversation addresses how networked images can be produced by multiple people, or agents, and can operate in multiple ways for different purposes. It also considers what it means to exhibit digital images in a gallery and how digital literacy is replacing visual literacy as an important way of understanding the world around us.

KATRINA SLUIS: I am the Curator of the Digital Programme at The Photographers' Gallery, London. I am responsible for researching and producing projects, commissions and exhibitions, both online and offline. Working in the programming team, my specific focus is on recent social and technological shifts in the way photographs are created and disseminated in culture.

CURATING DIGITAL MEDIA

PETER: What is your background and how did you become involved with photography and digital media?

KATRINA SLUIS: I have a background in Fine Art. I originally studied painting and defected to the photomedia department in my final year. I was funding my studies by working on the helpdesk of the CompuServe, one of the world's first Internet service providers.

I was in the darkroom, making photographs but then also on the Internet and messing around with that. I initially saw these activities as of two separate sides of my life. But then cameraphones appeared, and photographic images became 'networked' through social platforms, and I became fascinated with the way that the web and photography were converging.

PETER: How do you define your position as a Digital Curator? What's the remit of the job?

KATRINA SLUIS: The job is mainly focused on creating projects that explore photography's life online and onscreen. This involves working with artists and photographers, writers, online communities and members of the general public. I also work closely with my colleagues in education and marketing who are also challenged by the way in which the digital is transforming all levels of the organisation. At the moment, the primary platform for the projects I curate is the media wall on the ground floor of the Gallery.

My role cuts across a number of different areas of knowledge, from contemporary art to media and cultural studies, computing and interactive media. Unusually for a curator, it requires a good practical understanding of software and other tools – one day I could be troubleshooting a video compression issue, the next day I could be giving a talk on search engine optimisation and photography.

PETER: Is your role also to introduce issues around digital culture into a relatively traditional organisation that works primarily with analogue culture?

KATRINA SLUIS: Definitely. The Gallery developed the role as it recognised that the medium was changing at tremendous speed and they needed to develop a digital strategy and a way of reflecting it through their programme. The way we interact with images online and through mobile platforms are changing older ideas around visual literacy, authorship, audience, creativity and the role of the gallery or museum. How does network culture challenge older curatorial models of selection, authority and value? How can the image world of the Internet and the gallery meet? These are questions we are grappling with.

PETER: What approach do you take to exploring the visual image in digital culture? All images are data and a great number of images are produced as visualisations of data and are not even necessarily intended to be seen with human subjectivity. However, do you think there is an increasing cultural need to examine material which is specifically designed to be used and read and exchanged as images?

THE IMAGE BEYOND THE PHOTOGRAPH

KATRINA SLUIS: The problem with the image is knowing where it begins and ends online. Is the notion of a discrete image a valid concept when you are dealing with the boundlessness of the Internet? Is the computer's interface an image? And which version of an image do you attend to? What is really interesting



FIGURE 17.1

The Digital Wall at The Photographers' Gallery, London. The Wall sits on the ground floor of the Gallery and is visible to passers-by on the street as well as Gallery visitors. The 2.7 × 3m video wall consists of 2 × 4 rows of 60 in Sharp PN-V602 LED Screens in portrait format mounted flush with the wall. The image detail shows a screen capture of an amateur home page from the free web hosting service Geocities, presented by artists Olia Lialina and Dragan Espenschied as part of their exhibition *One Terabyte Of Kilobyte Age* (2013)

Credit: photo Peter Ride

about the networked image is that an image can potentially be everywhere at once and be accessed simultaneously. Photographs now come to us in rapid volleys, presented on luscious displays, as slideshows or 'photostreams' yet at the same time it can be even more abstracted and diffused through computing and the conditions of its production. So I would say that what is really important about the image today is its ability to operate simultaneously as a photograph but also as data.

PETER: If the image still has an important place in our culture the role of photography must be more contested – or what a photograph is. On one hand we could say that, because the data can be output in any different form, a photograph is only a photograph if our frame of reference expects it to be that. But on the other hand we could also say that there are some qualities about the photographic image and the way photography has a role in our

social life and culture that make photography remain a powerful force. As someone who started off working with photography, are you still intrigued by the photographic image or has your interest moved towards different forms of images?

KATRINA SLUIS: I'm definitely fascinated by the social and cultural life of images but I'm very interested in networked images as opposed to singular printed photographs. I'm particularly interested in working with photography that emerges from the contemporary image environment: from the proliferation of cat photographs online, citizen journalism, satellite and military imagery, the creation of 'photographs' by gamers to document their adventures in virtual worlds, for example.

There is a very interesting shift going on which is about the way in which the photograph has been part of the Cartesian representational scheme, in which its veracity and rationality has been part of its relationship to the 'real'. Now I



FIGURE 17.2

'Born in 1987: The Animated GIF', an exhibition of GIFs on the media Wall at The Photographers' Gallery 2012. This exhibition addressed a unique form of image which is best experienced via a screen: the animated gif. The GIF is an image file format created in 1987 by CompuServe as a portable, low bandwidth image file easily rendered by a web browser. Restricted to only 256 colours, and able to store multiple frames in a single image, the GIF brought animated movement to the static webpages of the 1990s in an era before YouTube and Flash (<http://thephotographersgallery.org.uk/the-wall-2>)

Installation photo © Kate Elliott, courtesy The Photographers' Gallery

think the image is a two faced thing. On the one hand it points to objects that are real in the world: an image of a cat is still an image of a cat and we still recognise it as such. But at the same time, the way a single photograph can be simultaneously part of multiple sets, streams and interfaces, creates a kind of temporality that's related to dissemination and the way in which time operates over a computer network. Photography has been traditionally conceived as a frozen slice of time, a 'death mask', an indexical trace – but the networked image shows us something very different, it becomes much more relational and about multiple positions.

TECHNOLOGICAL INNOVATION AND ACCELERATION

PETER: Rapid technological innovation has affected all the media forms that dominated the twentieth century and if there were presumed certainties, or at least accepted ways of conceptualising media, many of them have been disrupted. Do you feel that it is possible for you to address the way that digital innovation is changing the way that photography is understood to operate?

KATRINA SLUIS: Digital technology is accelerating so quickly that I think it's very hard to keep abreast of how things are shifting. For example, the development of facial recognition technology and other kinds of computational processing are having a massive change on the way photographs are exchanged and potentially used. The new field of computational photography has emerged in which 'software is the new optics' and the camera is becoming increasingly software-ised. It calls for a much more transdisciplinary approach to the image. For scholars not familiar with the technology it is easier to stay at the surface of the image and continue to account for it using older methods. From this perspective it can seem that although there are increasingly multiple forms of images and practices, the photograph still operates in the same way. And as a result, even within new media studies having a straight trajectory or discourse about it is very difficult.

This is of course also a problem for the Gallery. It is therefore very important that the digital programme foregrounds the expertise of different online communities and diverse practitioners and find ways of collaborating across multiple fields and constituencies.

PETER: The cultural institution, as you have discussed, is very much based around the idea of the authorship of the image and the significance of its contribution towards visual culture. Do you think these concepts are still viable in understanding the digital and networked image?



FIGURE 17.3

GIF by Wendy McMurdo exhibited as part of 'Born in 1987: The Animated GIF', an exhibition of GIFs on the media wall at The Photographers' Gallery 2012

Installation photo © Kate Elliott, courtesy The Photographers' Gallery

THE CHALLENGES TO AUTHORSHIP AND AUTHENTICITY

KATRINA SLUIS: Authorship is a very interesting issue in photography. Historically – writers have debated whether it is the camera or the artist that makes the image. Questions of authenticity and ownership become even more contested in networked image culture, where images can be appropriated, reproduced, remixed and remade in a few clicks. When someone looks at an image online it potentially modifies its context and potential future circulation. I am very interested in the politics of tagging, search algorithms, the role of metadata in relation to authorship, attribution and visibility of images online. The computer network challenges fixed notions of there being an authentic image or fixed viewing position. So it offers up a very different relationship between artist/author and audience to that of the museum.

PETER: These concepts can have huge impact on the role of exhibition and distribution of images. It creates major changes in the way that photography is seen as a highly popular and public medium. Many of these issues must present conundrums to a gallery. As a curator, what do you find are the challenges to grapple with in working in an art institution?

KATRINA SLUIS: Working in a contemporary digital image culture is extremely challenging because institutional frameworks aren't really set up to deal with the digital with all it means in relation to the ubiquity of images. On the one hand, photography institutions like to play off the fact that photography is a democratic and much more accessible form of art. But they also are steeped in the allure of the real and 'authentic' artefact. At the same time they have to ask how do you incorporate the public within the museum and how do you enable participation in an intelligent way. Of course the Gallery is very aware of this contradiction and a role like mine is needed so that the institution can explore these fundamental questions through practice and through research.

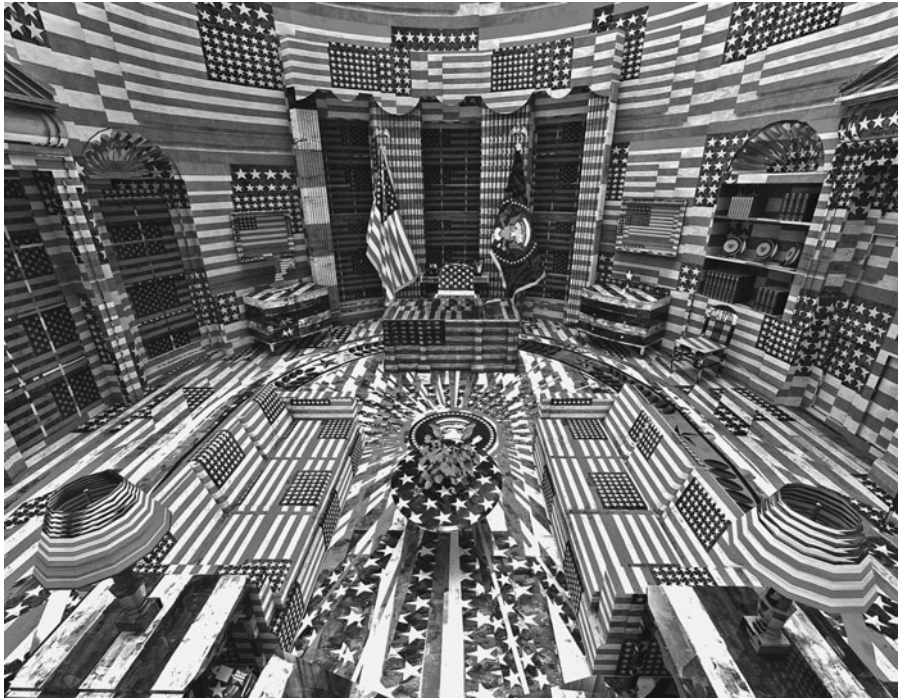


FIGURE 17.4

Jon Rafman *Jasper Johns Oval Office*, 2010. Jon Rafman *BRAND NEW BRAND NEW PAINT JOB*, exhibited on The Wall at The Photographers' Gallery 2013. Originally disseminated in blogform, Jon Rafman's *Brand New Paint Job* is a project where famous paintings are used to wallpaper amateur 3-D models collected from Google 3-D Warehouse. The project moves through a succession of hyper-real, lobbies, office spaces, cars and lounge rooms using a virtual camera. The resulting images reference the world of interior design magazines, 3-D gaming, social media mashups and synthetic photography

As a result there are huge challenges in terms of people getting to grips with questions of how an organisation can change culturally and how to bring in new ideas to the organisation. Another challenge is dealing with the idea that digital is cheap because it's seen as 'immaterial' and the presumption that there's not a lot of labour required. But of course it's never that easy, and while there are certain things that you are concerned about with a physical exhibition you don't have to worry about for the digital exhibition, there are other details that need to be considered.

THE NETWORK AND SOCIAL EXCHANGE OF IMAGES

PETER: You've spoken particularly about the importance of the network. What especially interests you about the way in which images can be exchanged and what this might mean as a form of social activity? How can you explore this within your programme?

KATRINA SLUIS: I think one of the most fascinating areas to consider is the social exchange of images. How is global image exchange undoing or calling into question, older forms of knowledge production and artistic production including notions of aesthetic potential? My strategy is to see the digital programme as developing a number of research questions and collaborating with others in order to start unpicking some of the questions about network creativity. I think a multi disciplinary approach is necessary because I don't think we can necessarily have the answers from one cultural perspective but these are questions that the institution is in a good position to grapple with and it can lead on.

PETER: In other words an important part of your programme is being developed through creating dialogues and creating conversations around the issues?

KATRINA SLUIS: Yes, absolutely, both with our audience and with various kinds of practitioners, whether they be scientists, bloggers, photographers, contemporary artists.

PETER: Without doubt there is much for a gallery to explore in the way that images have life in the world today and how they operate in the public sphere. To concentrate on the way images are exchanged and distributed, what aspect of the network image would you examine?

KATRINA SLUIS: I think we need to address the global image economy and the way in which images travel and migrate and consider how public institutions are part of that. Or to put it another way, what is the place of a photography institution in a culture where the average teenager is in contact with thousands of images every day?

When photography became digital there was an intellectual crisis in which the debate was primarily about what this meant for photographic 'truth'. However,

commentators ultimately realised that even though the photograph had been transformed into pixels, we still perceived and understood photographs as we always had. We see that, for example, in the way blurred camera phone images are used in journalism – they continue to have authenticity. In a sense this concern is still part of the dominant idiom but that is not what was truly significant about the digital. Rather, I think digital photography's 'networkedness' is what is of continuing importance. This is transforming how we think about the photographic archive, visibility, time and space, private and public images. How do new platforms for image sharing relate to contemporary collectivity and cultural memory? This is a really important question.

PETER: And this is because we are now in a situation when the database is not only just a presiding metaphor for digital media but it is the actuality for much of the media that we encounter on digital platforms is driven by the database.

KATRINA SLUIS: It leads to questions of how we remember and represent the world, and the role of software in facilitating this. What forms of sociality and collectivity are possible on social media platforms?



FIGURE 17.5

Shironeko, aka 'Basket Cat' (courtesy <http://photozou.jp/user/top/167308> CC BY-NC). *For the LOL of Cats: felines, photography and the web*, was an exhibition on The Wall at The Photographers' Gallery, 2012, which traced the persistence and popularity of the cat in and across photography and Internet culture

Installation photo © Kate Elliott, courtesy The Photographers' Gallery

NETWORKED COMMUNITIES AND IMAGE PRODUCTION

PETER: Communities operate in many way of course and while there are communities of interest that gather through social media, there are also communities of practitioners who collectively make work through open source or crowd sourcing. And are there ways in which exploration of this can take place through a visual medium in the gallery?

KATRINA SLUIS: All these different kinds of practices are valuable in helping us to unpack the way images are used, exchanged and valorised. I recently curated an exhibition that looked at cat photography and meme culture – from ASCII cats to ‘cat shaming’ and other practices. The web already does a great job of curating itself, so my approach was to work with those who were recognised collectors and curators of cat photography online. Cat photography ranges from the creative and subversive, to the banal and affective – does the exchange of such images create new social bonds? Or are image sharing platforms capturing and dominating our attention as part of what Jodi Deans calls ‘communicative capitalism’? Of course the challenge is to tease out these issues in developing these projects.

PETER: In a sense you’re operating within a very traditional notion of the cultural institution being part of the public sphere and yet bring into this the networked space, which is a very different public space and you are finding an overlap between the two.

KATRINA SLUIS: That’s right. The Photographers’ Gallery is not ‘outside’ the global image economy and representing it, but is actively part of it. We need to be more self-reflexive about the way images migrate across different boundaries and constituencies, and how our audiences use and make meaning from photography.

DIGITAL LITERACY AND UBIQUITOUS COMPUTING

PETER: Do you think gallery audiences need to be computer literate in the way that it is easy to expect art audiences to be visually literate?

KATRINA SLUIS: I think computer literacy is an important problem for all of us. In the forthcoming world of ubiquitous computing, understanding the culture of the computer will be increasingly important. As software and computing gets more and more complex it becomes black boxed. We can see this in the shift to a database driven web where we are not creating our own websites we are all putting our information on Facebook and social media has made publishing online as easy as writing an email. However, more of what goes on with the back end of these interactive image systems or social image systems is concealed. That’s not to say that the cultural practices and what happens

on screen isn't important. But what will be important is to make visible the means through which images come to our screens and the techno-social systems that support them.

PETER: What trends do you think your audience needs to think about in the next five years. What do you think they should consider as something which is going shift the way that we understand an image?

KATRINA SLUIS: I would say that photography's relationship to ubiquitous computing will be increasingly evident. From a cultural level, the automated collection and management images by machines will become more prevalent, in response to the deluge of video and images. Storing data isn't the problem anymore, it's negotiating it and creating meaning. YouTube has stated that it just can't begin to cope with how much video it's got, and what this means in terms of accessibility, so it's now rethinking its organisational premise. Looking towards the future the key will be in helping people find content and how to make sense of the deluge, the ubiquity of photography.