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ABSTRACT

Today when the digital image is but an instance existing in multiple versions, the aim in this paper is to investigate how each instance may differentiate. In the research that follows it is suggested that it may not be possible to fully gauge the implications of a digital image at the moment of its production or through the sharing of its popularity in transmission – this may in fact only emerge some time later. This measure may be introduced as a material durability, yet a central issue arises in that it is only by assumption that this can be known, given that the digital age is relatively recent. In the absence of any substantial digital history, we can only postulate what digital duration may be. It is to this end that my work and research is focused.

The final body of creative work in the graduate exhibition has been produced in a manner that oscillates from screen to print and back again, across a range of objects using artistic and commercial services. A digital painting is printed in multiple outcomes, stratified across a host of surfaces and sites. It is with humor that a game situation is invoked, where each instance must silently compete against the others through time. The game is not just about which one lasts longest, but most beautifully, faithfully, or poorly. A website has been established to document the digitized versions of the work. It is hoped that this exhibition may go some way to exploring the ways in which an image belongs to a network.

(www.conditionreport.tumblr.com)
DECLARATION

This is to certify:

i. The thesis comprises only my original work towards the Masters except where indicated in the preface,

ii. Due acknowledgement has been made in the text to all other material used,

iii. The thesis is less than 12,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Ry David Bradley
ACKNOWLEDGMENTS

To VCA staff who have been guides: Barb Bolt, Bernard Sachs & Su Baker.

To my research supervisor Stephen Haley, a thousand thanks.

To the beautiful Tara Cook, whose support made this possible.

Finally, this essay is to dedicated to artists in the 21st Century.
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INTRODUCTION

The research that follows investigates the material conditions of contemporary art employing a digital paradigm. As an artist who is engaged with screen-based and networked culture, I have aimed to interrogate how an artist who works with digital tools negotiates the relationship of digital work to material outcomes. Many issues face the artist who fabricates their work from a computer file to an object. The paper is divided into seven chapters that target various aspects of the problems that face the digitally produced object within the context of art. The central argument is formulated in locating the durational capacity of a digital image across various material instances. I use this position in contrast to other theoretical and aesthetic measures of the digital image: its velocity in the network, its poverty in degradation and compression, and finally its disposability in an economy of limited attention.

The overarching concern is in establishing a measure of the digital image that aligns it with a broader history of artistic production. Considering the array of outcomes that digital images may be constituted to, the proposition is that not all instances persist equally.

The paper is divided into seven chapters that focus on specific aspects of the digital image as it is transferred from computer screens to other surfaces. In the first chapter (Command+P) I seek to outline the relationship between the digital image and the digital print. At this stage I seek to reposition the digital toward a state of reflexivity.

In Chapter 2 (The Unprinted) the text focuses on defining characteristics of the digital image when it is screen-based, and how this has been historically misconstrued as an immaterial state. Here I draw upon earlier categorizations
of images, and outline a series of conditions whereby we may now move
toward a materialist understanding of file and screen based states.

In Chapter 3 (Printed Matter) I then introduce how this materialist
understanding of the digital image begins to affect a type of digital
embodiment that is still flexible enough to consider the migratory and
reproducible aspects of digital production.

Chapter 4 (Fabbing) interrogates the range of options that a digital image can
be exported to from its screen-based state, and how these other formats then
begin to align and misalign with other art objects. The commercial aspect of
this relationship is queried in the actual composition of the file, the screen and
the digital fabrication. The constitution of these materials in terms of their
durability, potential beauty and inherent failures are then raised.

Chapter 5 (Instances) takes these material possibilities or reproductions and
seeks to define the conditions inherent to encountering a duplicate. It is then
postulated whether it may be possible to detect the trace of the digital image
in other objects by residual effect. What each instance then carries with it are a
set of prior conditions. The material carrier for each is relative to all other
instances. What sets them apart ultimately is found in their ability to maintain
that state. This is a kind of fate to which the digital image is subjected in the
course of this paper.

Chapter 6 (Condition Report) details my work in the graduate exhibition and
its relationship to the durational character outlined in this paper. A set of
outcomes have been fabricated from the same file to stratify and then query
how each state is relative to its others. After a presupposed duration each
state that the work is in may begin to carry the image quite differently.
In the conclusion the durational measure is finally contrasted against the demands of popular 21st Century culture, with its demands for rapid access and disposal. The artists’ position within this digital milieu may then be to question what will be the most effective carrier of a digital history.
If we are to accept that digital images are ‘now routinely transitioning beyond screens into a different state of matter’¹, it is important to outline how that matter is constituted. The relationship between the computer screen and printing is an intimate one; printing is always a keyboard shortcut away. Of course there are other ways in which digital images can transition beyond the screen, but for the sake of this paper I will focus on the relationship of the digital print to its image and screen based culture.

As Clare Bishop has noted of this intersection between digital images and physical objects, we are often drawn into a ‘digital divide’². This is implied by artworks that require a screen to view and those that do not. By examining the material basis for the digital image across various instances, we may begin to relate to it not in division, but reflexively. One may imagine digital printing as a ‘discontinuous twin’³ to the screen. Whilst they are not the same, they are bound within each other. Printing can mean that which is encountered off-screen is subject to a different order of material register. The surface of a print whether 2D or 3D yields a texture that no screen can yet claim. The network, the screen and the print all have material conditions that this paper seeks to explore.

In digital printing a parallel to the screen emerges, where content is extricated from one format to another in a chain of possibilities, also known as fabrications, or fabbing. Images that travel within the voracious exchange of a

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screen-based network are fixed when printed. Their ability to disperse in the network is momentarily withdrawn - yet the ease at which a print can be immediately photographed on a mobile device and uploaded back to the network denies the print, and most other objects for that matter, any permanent autonomy. As Rosalind Krauss suggests, the hydra-headed nature of the image leads toward a space where no single instance seems to provide a formal unity for the whole of its possibilities. But if the print possesses any slowness contra to the migratory nature of an image online or in digital form, it resides in the time it must take in becoming its fabrication, and in an alternative duration presupposed by the physical properties of that printed condition.

It might be possible to assume that the time it takes to print an image is possibly analogous to the time it takes to upload one, supposing there is equal access to a printer and a data connection. Yet in an increasingly prevalent culture of Internet mobility, it is potentially far more likely to find access to a data connection than a printer, in which case it may be easier to enter the network than to exit it.

Why in that case might preference be given to something seen off the screen, something that has briefly exited the network? Furthermore, can anything ever truly exit the network? To take Rosalind Krauss’ argument of the postmedium condition at face value, where works can be encountered in a variety of states that exist beyond any particular intended medium, or as David Joselit proposes, in a plethora of ‘formats’. Perhaps the defining difference of the

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5 Krauss, A Voyage on the North Sea, 2000, 9.
digital print is found in components such as increased scale and physical characteristics, that are offered by printing variant objects to alternative substrates that the format of screen sizes cannot achieve. If then printing is the analogy of the digital, what does it do that is digital, and more importantly, what does it do that is not digital?

What happens when an image is ousted from the digital network and committed to a substrate or object? Without the temporal acceleration, deterioration and compression that Hito Steyerl characterizes as the rapid flow of the poor image and its degradations in the network\(^7\), the print is not unlike a fermata in the overall passage of image states. Yet to pause is not to stop. Open ends are a characteristic trait of anything that exists in any digital sense. All digital fabrication can do is open a sequence of alternative endings to those that are already in existence. The fabrication or the print in this way is likely to appear dormant until re-activated. As Seth Price notes in the final moments of *Dispersion*, ‘production is the excretory phase of appropriation.’\(^8\) When the image is reproduced as print, it may briefly begin to approach the condition of painting in its out-of-screen context, as Whitney Davis suggests in ‘How to Make Analogies in a Digital Age’ – where printing lingers beside all digital efforts. Here he suggests each mode relays its other\(^9\). Perhaps this could be found in their shared aesthetic traits, the visual evidence of a digital image is bound within the print, its effects are carried to any further manifestations unless they are intentionally edited out.

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\(^7\) Hito Steyerl, “In Defense of the Poor Image”, *E-Flux* 10 (2009), 7.


The digital image as a print removes itself from the mutability of its screen-counterpart, becoming the realization of that state for an unknown duration. While the screen-based image may change dramatically, as a relatively permanent print it cannot. It is perhaps in this moment that a digital image may be contemplated outside of the screen, outside of context. When one prints something they see it for the second time with a material embodiment not previously witnessed. Here the digital image’s characteristic speed and propensity for animation is severed, almost frozen if not for the weathering effect of what will now be its material decay, expressed through fading, cracking and other durational decomposition. The conversion to another order of materiality, from digital storage to liquid spray for example, becomes an extension of the digital image. It may also exist simultaneously in other file-based instances, occupying an array of stratified locations, contexts and proprietorship across the network of digital sites. This is not to say that once printed the images trajectory is halted; for it is just as likely the printed object itself is digitally photographed and finds its way back into online flows.

What the print then takes with it to all screen-based instances henceforth are but caricatures of its purported material condition. The print, perhaps, is one of the most substantial footprints a digital image makes in its life of continuous, global traversal - that is to say, if it ever becomes one.
THE UNPRINTED

Of course there are artists who do not seek to print their work and prefer to display it natively on the screen. A screen is effectively without patina - when screen-based images possess traces of the grain that the flat glass of the screen lacks, they become compelling only in absentia. On a website like Tumblr the popular fascination with close range shots of highly textured materials is testament to the screen-based distance of experience, found in images of bodies, creased surfaces, of liquids, environments and interiors. These elements are seen as projections of a former physicality now at odds with the glossy, backlit and hypnotic glow of an LCD panel. Michael Sanchez writes in Art Forum10 of this condition bleeding out into the way art galleries attuned their fluorescent lights to make gallery walls “pulsate like a screen” in a collision of screen and space achieving prominence in a slew of art websites in 2011, most notably Contemporary Art Daily11. The screen condition:

Fed back into the white walls of the gallery... rendering them more easily photographable for instantaneous distribution onto a scrolling surface [where the screen] brackets the gallery space from both sides12.

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What the screen offers artists more than anything is perhaps an alternative economy of scale – a website has the potential to connect to a far greater audience than a print, unless of course the print is digitized and dispersed. Orit Gat suggests that ‘the economy of [online] attention is radically different than anything known in print.’¹³ When the cost is mitigated across the personal investment already outlaid by users of the screen-based devices with which audiences view an image, the artists’ financial outlay is diffused. In effect, the audience pays a small startup fee to view the network as the artist pays to disperse within it – here the network cost is cumulative among its members.

By releasing an image or exhibition to screen-based consumption it automatically becomes far more public than in traditional exhibition settings. As such the screen enables accessibility and vulnerability to software based re-editing, of the type that we may understand as a process of \textit{prosumption} (an audience of authors) or \textit{versioning} (a work with multiple authors). As an unprinted image then uploaded to a network, the screen increasingly allows for the audience to intervene in the source on native terms. Spiraling chains of re-authorization may then ensue, where ownership is increasingly difficult to locate as the image is collected, aggregated, sometimes altered by various states of public access.

As such these conventions are wrapped up and experienced in a viewers reception of the Internet image, screen orientated and active as it is. A parallel exists in its precedent – the passive image of broadcast television. Jean Baudrillard’s critique of electronic images challenged the indexical reference to the truth of an image, considering them with a heightened sense of distance and abstraction from the real world. Baudrillard reiterated the principle strategy:

\begin{quote}
By means of which [images] always appear to refer to a real world, to real things, and to reproduce something which is logically and chronologically anterior to themselves\textsuperscript{14}.
\end{quote}

\textsuperscript{14} Jean Baudrillard, \textit{The Evil Demon of Images and the Precession of Simulacra}, (St Louis: Left Bank Books, 1987), 14.
In ‘The Evil Demon of Images’ he laments that the ultimate fatality:

Lies in this endless enwrapping of images (literally without end, without destination) which leaves images no other destiny than images\(^{15}\).

By condemning this condition of imagery to a state of baseless, perpetual vertigo, the resulting character of the image in his view cannot escape itself in the confines of the perfection of its own model. It is here that in addressing the materiality of the image that we may begin to relocate within real world parameters Baurdrillards’ abstracted model.

The televisual image, posed as an infinite swirl, bore semblance to early characterizations of the digital and its image currents as immaterial. Yet this spiraling Baudrillardian condition could not foretell of a later return toward materiality. That is, without regard for the material conditions by which these images circulate, analyses are limited in their scope. Writers such as Margaret Wertheim described common early perceptions of the Internet as an infinite and immaterial ‘space’\(^{16}\) unable to be adequately apprehended but in fragments on account its global scale - these are now no longer sufficient, nor were they then.

Despite the assumed scale of the network today it is likely that a viewer will eventually see the same image more than once. For someone to share a link that had already been seen or read or for a friend at a party to show a YouTube clip that in fact everyone had already watched. What was once


positioned as infinite utopian space is no longer the case – the network is finite, limited to data centers and content channels, and more importantly among its users, the experience is vernacular.

Against a materialist outlook\(^\text{17}\), these early descriptors of a transmissive vacuum within which images circulated bore fundamental and critical absences that a current reassessment now brings forward. The global promise of an immaterial paperless office in a 1975 issue of *Business Week*\(^\text{18}\) is eroded by the physicality of the tapes and then disks and then flash drives and globally laid undersea Internet transmission pipes upon which an image’s traversal is inextricably dependent. This materiality is of course furthered by petrochemical and subsidiary industries that produce the network hardware in use.

Speaking about a later form of images than the televisual form Baudrillard referred to in the 1980s, Lev Manovich suggested that ‘before digital computers, data was typically recorded in some permanent medium.’\(^\text{19}\) To him this meant that the format within which historic recording took place was essentially fixed. Hidden beneath layers of effective and strategic marketing that we would currently refer to as the somewhat absurdly abstract *cloud*, Manovich then noted that this was the point at which the ‘physical representation of data, its logical representation, and its user representation became separated.’\(^\text{20}\) Essentially when we cannot see the actual location of the image, and only perceive its screen-based representation it is no surprise


\(^{20}\) Manovich, “Data Stream, database, timeline”, 2013
that the referent became as Baudrillard suggested – an ‘inverse negative relation.’ In a proposed model for network materiality, referred to as the ‘stack’, Jay Springett suggests ‘we cannot have a conversation about something whilst it remains unseen.’ The industrial constitution of the network upon which digital images flow is of pivotal importance to any discussion of them.

Estonian artist Katja Novitskova on her website offers a more recent position invoking media theorist Manuel De Landa, where she surmises he ‘goes against the still post-structuralist claim that our access to reality is bound by language and media,’ and that by ‘shifting away from idealist relativism, new material realism allows seeing culture as part of nature, subjects as complex objects, digital as physical.’

In his book *Tubes: A Journey to the Centre of The Internet*, Andrew Blum describes the situation when in 2006 a 75 year old woman in Georgia accidentally put her spade through a cable in the ground, the entire neighboring country of Armenia lost its Internet connection for five hours. The materiality of the Internet is today undeniable, and should be fundamental to any discussion of it.

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Access to electronic images is reliant on a deeper architecture of materials that transmit them - and without these, they cease. Blum states:

If the computational technology is incredibly complicated, the basic physical process is shockingly simple... light goes in one end of the ocean and comes out on the other. It comes from a building called a landing station, often tucked away inconspicuously in a little seaside neighborhood. There are amplifiers that sit on the ocean floor that look like Bluefin tuna and, every 50 miles, they amplify the signal.\(^{25}\)

To further this material simplification of the network Orit Gat asks ‘so what does it mean to print out the internet?’ in the introduction to *Invalid Format* where ‘the editors discuss their initial speculations as to the possible longevity of web-based publication:

We had a sense of the inevitability of obsolescence - think cassette tapes, LaserDiscs, Mosaic Netscape 0.9 - and the need to safeguard our work being reduced to so many broken links and 404 errors. The idea of publishing books based on the online journal came up as a way of ‘artful archiving\(^{26}\).

Within these conditions Italian media theorist Domenico Quaranta poses the question: ‘a concept of postmedia that takes all these strata into account would prove a useful key to the art of the present.’\(^{27}\)

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The search for an exclusive truth today in one digital instance over another would be futile at best. Rather than on the basis of purity, perhaps we can differentiate between instances of the same thing by their durational capabilities or lack thereof. After all, history requires its carriers. Durability is this measure, yet it is largely speculative in the digital present. What a materialist return might be better suited to when regarding the digital is situating the disembodiment of digital images within a range of materials to which they have become estranged, along with them our relationship to the physical world.

Digital embodiment is a primary instance of this need. Writing recently on the possible materiality of power Levi Bryant suggests:

> If materialism is true and only matter and void exist, if it is true that mind is brain and that everything that is requires a material carrier to act in the world, then it follows that beliefs, institutions, ideologies and language are themselves material entities.28

While it may be that within art discourse it is somewhat démodé to resurrect the battered spectre of medium, the continued if not central importance of some kind of object in the experience and production of art is perhaps an issue that is pivotal to the ongoing practice of artists who work digitally. If language itself is also now considered a material entity, perhaps a postmedia treaty may be struck between those who favor the idea over its substrates. But in order to move forward, the digital must be spoken of in terms that address

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its ever-present locations and what composition enables them. Now, just as in 19th century science, there is no mysterious aether through which digital images traverse - instead there are dirty, sprawling cables and pipes across the earth.

Yet this is not to say that digital embodiment is in any way implicitly about its material makeup, as its operations are inherently migratory - while this understanding must be flexible, it must not come at the expense of its real world localities. The file always occupies an array of surfaces. If they are not in your room, they are in another room you cannot see. The goal is to now situate whatever material forms the digital assumes within a broader history of materials. Only then can it be increasingly understood within the extended lineage of art, without the immaterialist disjunction that has demarcated most characterizations of newer media. Anything new cannot remain so, eventually like all else into layers of history it is sown, or lost.

Figure 2 - Oliver Laric, Bordeaux Altar Cast, 3D scan of Resin Cast from Roman Period Millstone Grit Original, 2013, http://lincoln3dscans.co.uk
Whilst it is not fruitful to differentiate these materials to the exclusion of each other in terms of an essential truth, it will be through the durational capability of storage and recording that we begin to see which digital carriers persist over others. The same file online in an offshore server, written to a local flash disk, printed to paper - their difference is not immediately important so long as access to them all is equitable. Possibly the only measure of difference between them will be found in their longevity. Some formats will outlast others either through public or commercial favor, good weather or timing.

Aside from their rapid flow throughout the network, as contemporary history has shown, an archival perspective, one that takes into account not subjective measures of quality or value, but the durability of images - is something to which the digital condition will ultimately be subjected.
The path from screen to object is lined with industrial bridges. How one crosses them is highly customizable yet, the path to digital fabrication is one that is commercially geared, not artistically, toward the production of prototypes, merchandise, and other short-lived commercial needs. While specialist digital art production facilities do exist, they often use exactly the same printers as any other facility but do so under the guise of an *archival* quality. Why is it that artists demand archival quality in their prints from specialist printers, and down the road at non-specialist printers the customers do not? Are artists inherently more interested in posterity? Are they more interested in materiality and beauty? Is it that the results will be scrutinized at closer quarters on a gallery wall? Are they making deferred requests on behalf of gallery dealers who in turn defer to the whims of the collector, who intonates, “If I am to pay $30,000, will this thing last?” The truth is nobody really knows. It could be a long time, but as with anything, the conditions under which it is kept are paramount.

In a 2009 article on the website *Rhizome*, titled ‘Means of Production: Fabbing and Digital Art,’ Greg J. Smith asks:

If galleries are going to be increasingly populated with arrays of fabricated artifacts, what will the tone and context of these exhibitions be? Fantastical product launches? Featured objects with extensive accompanying media to document process? Or “business as usual” strategies for sculptural display?²⁹

Due to the high cost of large format printing machines, the point at which an artist wants to produce a print or object from a screen-based instance is a pathway that requires the services of advertising, marketing and corporate production facilities that are specifically geared toward campaigns of mostly seasonal duration. This is strange ground for the art object as it has been historically produced. Whether intentional or not, that which constitutes the art historical record are objects of great wearing capacity, like stone.

When those who fabricate the artist’s work are at the same time fabricating work for blitz campaign style industries not intended for the art gallery, the artistic intent is blurred with a corporate sensibility. Unwittingly the artist who makes a print must engage with the business bound nature of the increasingly popular formats of the commercially driven aesthetics options that are on offer at the time. Pull up vinyl banners, card prints that are stock photographic in style, intended for a place where business cards are exchanged in congenial greetings at product conventions beside a water-cooler and faux-fernery, custom images on printed venetian curtains, beige office furnishings, desk orientated PowerPoint presentations, gridded website templates, logos on coffee mugs, caps and collared polo shirts, lanyards and magnetic swipe cards - the office style is a universal driftnet that harvests a characterless professionalism and personal neutrality. Here at the edges of a depersonalized hell, most digital print solutions cater to business needs first and foremost. Their aim is to place the brand on as many poor objects as possible. Low cost graphic display systems hope to adorn all surfaces.

In this international style, encapsulated perfectly in the homogeneity of airports, it is only once you leave the airport that the ruins of the nation can begin.
If only the digital graphic displays were not so rapidly replaced, and left to fade, their durational character may emerge. We would then have a condition not unlike that left behind by the once hand painted signwriting industry, where in strange corners of architecture you may still witness the faded trace of a painted sign from a time long before graphic digital fabrication outcomes that are geared toward a specific cycle: remove and replace.

To this end, most of the digital production facilities that exist are geared toward fabbing objects for the commercial business environment, for the trade fair, shop, van or advertising campaign. As such the marketing and promotional materials they offer intend only to carry a brief message for a short period of time before being soon after discarded – they are certainly not intended to be kept like a traditional art object. The production materials in use are largely plastic, lightweight, and low cost on account of the fact they are intended to be produced in large commercial runs. Vinyl, acrylic, and cheap metals abound. From a material standpoint, a fork in the road presents itself to the artist who wants to directly fabricate what they see on the screen into its alternative embodiment as 2D or 3D printed object.

In a hierarchy of value bestowed upon materials in the trade economy, where one may assume gold is somewhere nearer the high end of the scale, plastic is perhaps somewhere near the bottom. Some materials that have been traditionally used to cast the art object, like bronze and marble are as materials alone commercially precious – while others like wood are not, until of course they are employed to create art.
These materials however, do exhibit a physical weight and patina that has carried them through human history for hundreds of years and as such they are dependable carriers of any beauty or meaning ascribed to them by their patrons, historians, museumgoers and social commentators. The paradox with plastic is that despite its ubiquity as a cheaper material - it may be that it lasts just as more traditional materials, given that its failure to decompose is currently an extreme ecological problem. What then? As a robust polymer that can withstand all manner of extreme conditions, it becomes the effective carrier of a contemporary age. Weightless, toxic and synthetic but highly customizable - able to mimic a vast array of looks and feels. In its early deployment plastic was once rigid, lurid and brittle. Yet now, the interior of a late model vehicle is testament to the softly furnished, velvet finishes of the plastic suite, with plastic chrome, plastic leather - everything with a finished, even organic touch. It is perhaps no surprise digitally produced art of the present reflects these outcomes, just as those Southern Californian finish fetish artists in an earlier phase of industrial collusion in art that took place during the late 1960s and 1970s artists, Larry Bell prominent among them\textsuperscript{30}.

If the same digital object were cast in bronze, marble, stone, glass and plastic - which material will fail first? To engage subjectivity, which one weathers most beautifully? Assuming they are all made at exactly the same time, is there an immediate hierarchy of desire bound within the constitution of each? Computers, flash drives, and the fabricated print are all written into a composite of materials to which the art object has only recently been subjected. A strategy to recast these plastic prototypes in bronze or ceramic may place the digital fabrication into a broader history solely on account of its

material condition and any subsequently applied aesthetics. It is questionable whether it should. Perhaps it will not have to as digital fabrication channels expand into utilizing other materials. As Enrico Dini has shown, it is possible to 3D print in stone.

![Figure 3 - Enrico Dini, D-Shape, 2012, Stone Composite, http://fablabsf.org/d-shape-life-size-3d-printing-enrico-dini/](image)

Perhaps the recast object that alludes to the digital is in fact a failure to adequately consider what is at stake. If one paints a digital image, it relates as much to painting. Perhaps fabrication services become more attuned to the organic, or artists in the 21st century locate ways to output screen content without deferring to primitive methods. Perhaps only when digitally fabricated art finds a way to exit the shortsighted nature of the product launch will it find parity with art history. Or conversely, the product launch becomes art history.
Yet the real issue with digital fabrication in this light arises in intentionality. If the intention is there in the artist’s output to critique these commercial systems of production from which it must be produced, there is no problem. The issue is apparent however only when the artists work which makes use of these commercial services is unable to refuse to comment on this commercial aspect. It is little surprise that echoes of Marcel Duchamp’s readymades are continuously positioned within this mode of art production, certainly it is warranted, but is it wanted? There appears no space for sincere use. Just as Andy Warhol’s prescience also lingers in the commercial reliance given to contemporary art, it may only be that they are continuously invoked in order to anchor some precedence in a world long steeped in variations of what we now refer to as commodification.

The fact that Duchamp’s urinal was made of porcelain was radical not only in concept but in its material condition. Ceramic objects align closely with many art historic objects, being the material base for some of the most ancient cultural artifacts in possession. To what long ascribed material history does the plastic or digitally fabricated object insert itself other than to historic notions of cultural merchandise and its exchange?

It can be prohibitively expensive to make a digital print, which may go some way to explain why images tend more often to stay in their screen-based state. To make a print requires an investment, and as such it requires a level of commitment or belief on part of the artist. In a culture of rapid exchange, short attention spans and overabundance of image content - the print becomes somewhat of an antithesis to the screen. It is here that the digital image loses its context, may increase its scale, and weathers with the rest of us.
From the standpoint of immediacy and accessibility, two of the strongest market demands of the Internet age, the printed image is at odds. Yet from a durational perspective to which the Internet will eventually be subject, if it is not already, the print accords with historic concerns for longevity. It is in this way that the print is in fact not digital, unless of course we co-opt the materiality of the digital substrates with the materiality of printed substrates. Whatever has been carried over to print is an imperfect transcript of screen and file-based origins. In short, a print is an image that reveals its materiality more than its screen-based counterpart does. If the artist were to then paint it, possibly all this act seeks is an even more explicit veering toward a materiality that is perhaps now rendered painfully obvious.

The intentionality of the print, the investment that is bound within its committal to surface, forms something of an artists reckoning with the relationship between screen-based culture and objecthood. Not least because the financial outlay made to produce a printed counterpart for the image is relatively high, particularly at scale - commercial printer ink is sold for 7 times the cost of human blood, 16 times the cost of Dom Perignon and 9,444 times the cost of aviation fuel\(^\text{31}\). Printer ink is arguably one of the most expensive liquids on the planet and may be a primary factor in most digital images remaining unprinted.

As such, making a digital print at scale is an undertaking that demands the artist is invested in the image to an extent that goes against the low cost to rapid movement of the digital image’s actions in the network. Perhaps here in the once digital, printed image, a whole set of enquiries can be engaged that cannot in screen-based reception. The image appears in the perfection of the screen-based model as a slippery surface perfectly geared toward an instantaneous short lived viewing. Scrolling motions, fleeting glances, quickly discarded on the limited real estate of small screens to allow space for the next.

The resultant problem with locating digital materiality is manifold: substrates where files are stored are not made visible, the networks through which they traverse are also buried within engineering infrastructure and are as such misunderstood. Like children at the gates, all that we see is the import of the magical screen, glowing before us, dividing its screen appeal from its materiality. To move beyond this binary we must account for the image as a material model, built to be reproduced.

If the fabrications of objects from the network are at best prototypes, rather than finished objects, textiles or structures, they offer promise. In this way the digitally printed object may be a harbinger for the end of the finished object as such, with or without customizations. If we are to accept the low quality outcomes of cheap graphic display systems that dominate the retail marketplace, that are also when placed in a gallery as pieces of art, we make an easy failure. But at the same time, we draw an analogy of means. At best, these digital outcomes are combined within other histories. At worst, and perhaps most radically, art produced by these means is functional only as philosophical merchandise.
When speaking of the moving image, Ross Lipman notes in *Artforum*:

> The most fundamental sea change wrought by the digital revolution is the loss of the singular work... this new dispensation challenges prior notions of authenticity, even those applicable to mass-reproduced works.\(^\text{32}\)

It is perhaps then that the technical support of the digital is not its finality, but one of many finalities. It may in fact prove to be its strength, being translatable in future iterations. Lipman suggests:

> It is ontologically impossible to replicate one medium in another...
> [But] a type of cultural loss ensues when works that might successfully survive translation are withheld from it, in adherence to a rigid Platonic ideal. Ironically, some works can be if not “restored” then reimagined and re-embodied, precisely in their transformation.\(^\text{33}\)

At this point one thing is clear, there is more than one way to prefigure the shifted *aura* of a reproduction, particularly for that which was born digital - yet most of these lines of enquiry are self-annihilating.

The materiality of the digital does not necessarily need to locate an essence, but it does need to address its ecological and cultural position without deferring to immaterialist ideology. This to date has been the primary cause for dislocation.

\(^{32}\) Ross Lipman, “Conversation at a crosswords: The restoration of a film by Bruce Conner”, *Artforum* (October, 2013), 89.

\(^{33}\) Lipman, “Conversation”, *Artforum* (October, 2013), 90.
That the digital is facilitated by global industry incorporates it within a tenuous relationship to the environment - which in some way aligns with the notion of ecological *footprinting*. Footprinting is in itself a speculative measure of an implied materialist measurement. Perhaps in this way a materialist outlook upon the digital epoch seeks to locate and account for the failures of disembodiment and the abstracted fear of reification.

![Figure 4 - Daniel Temkin, 1, 2012, Custom Sandal, http://www.higherpictures.com/ImageViewer.aspx?id=2408&c=50](image)

In the 2012 exhibition ‘Brand Innovations for Ubiquitous Authorship’ at Higher Pictures, a large group of internationally based artists were asked to produce an object using [an online] custom printing or fabrication service such as CafePress, Zazzle and Walmart, which delivered the objects in sealed boxes directly to the gallery.
As Michael Connor notes in ‘What’s Postinternet got to do with Net Art?’ these rules of production:

Circumscribed the process of artistic creation entirely within the more or less truncated forms of customization available on the internet; one might reasonably draw the inference that all forms of creative production are similarly circumscribed\(^\text{34}\).

If the artist can send a file to a factory that then produces the finished object on their behalf and sends it directly to exhibition without the artist ever having seen the object, the fabbed object presents a studio-like model of authorship. Perhaps these services are the 21st century’s foundries. The object itself becomes a placeholder for a globalized condition. That it is poorly made is part of its allure, for the critique of corporate systems would alter drastically were it cast in bronze. At worst, the fabbed object is just another cheap product intended only for a specified campaign, in this case, an exhibition. At best, it ends up in the museum cabinets of tomorrow alongside stone arrowheads.

Without interrogation of the processes offered by the digital fabrication company, the artist is recast as just another corporate customer. Perhaps only through customization, alteration and experimentation can the digitally fabricated object escape its own nature as a token of the poorly made. Or, seen another way, it is the pinnacle of the offshore condition - locating the artists’ production as a concept expressed in commercial material. The image can be solidified in so many ways that are yet all vaguely similar.

The period in which they are produced unites them in production values – here art like all else is found chained to industry.

In a recent project from 2013 entitled ‘Printing Out The Internet’, founder of UbuWeb Kenneth Goldsmith harvested the voluntary submissions of 20,000 people online who printed out and sent whatever they deemed important from the internet. The final result was displayed as a 10 tonne pile of A5 paper in a gallery in Mexico City. The project drew global media attention and in its course attracted a sizeable response to the environmental impact of such a usage of paper. Yet as Domenico Quaranta noted in the October 2013 issue of Flash Art magazine among many other possible invocations for the project, at its heart lay a disavowal of the long-term storage potential of the digital medium – having yet no proven history of durability when comparable to all other means of the writing of history.

The rate at which library and museum collections are digitized seems overwhelmingly to assume the promise of network accessibility and stratification, both strategies at tackling a durable historiography of the present. At the same time there is a tenuous bond to what happens to the digital record if it is not periodically migrated.

36 Domenico Quaranta, “Printing Out the Internet,” Flash Art 312 (2013), 64.
Everyone has a story to tell about the time something digitally stored, perished without a trace. Whitney Davis suggests:

Many digital media can capture - and duplicate with utmost fidelity - the most dense and replete continuous correlations that can be rendered in any analog mode. The analog and digital replications are often indiscernible from each other and frequently they are functionally interchangeable. That is to say, analog and digital modes are now themselves wholly continuous.\footnote{Davis, “How To Make Analogies”, 2006.}

Materiality of the digital is perhaps not then a passage where one form supplants another, it is more that the trajectory from the image to object was historically assumed to be a divide. Now such discourse would be more likely to suggest a reordering that positions them inside one another to a point that almost nullifies their separation. The embodiment of the digital image is our ouroboros.
**INSTANCES**

It is a beautiful thing to encounter something in a place where you did not expect it to be. At the same time, it arouses an initial doubt as to the nature of the encounter. In the absence of direct and unquestioned trust, the situation invokes a sense of query to which meaning can be ascribed. That which requires unpacking becomes a more complex object than that which doesn’t, and so it is that duplication operates upon us. When viewing the instance of a replicated object our perceptual bias may be predicated upon an expectation that is not met, or is in some way concealed by a duplicate position or location. The double implies its transposition from one state to another, perhaps reflective of its previous conditions.

When we view an object on screen a series of duplications are enabled in that the object is not really on the screen, and neither is the file that is being displayed. The object remains in the space in which it was photographed, and the file is stored somewhere magnetically and chemically in tiny storage units that are encased. What is really being seen, the casing of the screen or device, is largely overlooked. Perhaps from a materialist standpoint it would be in seeing both the screen’s infrastructure and its image at once that any conclusion may be drawn - perhaps the most effective way to overcome the immaterial binary implied by the digital object. An issue presents itself when the screens image is mistaken for being severed from any real location, when in fact; it has a discreet set of material anchorages that the network dependent nature of contemporary images brings to bare.
Particularly with regard to digitization, by seeking to create a perfect 1:1 transfer from one site to another the only real motivator is in mitigating loss. Each time they are transferred, alternate material conditions are engaged. Without delving into whether it is in fact possible to make a perfect copy in the first place, we may understand this process as translation. The digital camera and scanner serve as entry points, the computer screen and network as dispersion points, and the printer as an exit point. Yet entry and exit from the network via these points is truly arbitrary and non-linear. A useful analogy may be found in the phase transition between states that is exhibited by materials, as described by Manuel De Landa\textsuperscript{38}, where a liquid may undergo conversions to gas and solid states. The image may be in various formats or states depending on the conditions in which it is encountered. If it were first known as a sculpture, one may believe it would always be a sculpture when it may have also become a file.

It is possible to then ask whether the image in its screen state is invoked by residual affect when viewed as a printed counterpart. When looking at a print, there is nothing essentially digital about its makeup. It does not require power to view, there is no file that is being recalled from any component media, yet there is still something digital tied within the aesthetic component of its opticality. It is assumed that while there is no file state present here in the print, somewhere, there must be. Its screen origins are revealed from certain visual cues with which we are familiar, like jagged edges or compression artifacts. Similarly, we know the signs of digital printing, the banding of print heads, the linear shift of an error in alignment. This may in fact be the co-

existence of digital experience, where one enters into a chain of relations according to various cues in any semantic instance of the digital, embedded within certain processes with which exposure makes us more familiar. It may be plausible that with time it becomes increasingly difficult to differentiate the characteristics of print and screen as resolutions and bandwidth increase. It will be through faults that we continually become aware of the underlying character of these transmissions. As such, transition between these states is one that operates upon attempts at mirroring, where perfect fidelity is sought (but perhaps never achieved) as the digitized shifts through formats, each with their own inherent losses and fills, or gain.

The measure of an image in the reproductive network may then extend from a lost aura as Benjamin proposed\textsuperscript{39}, from velocity and currency as Joselit suggests\textsuperscript{40}, and from resolution or popularity as Steyerl\textsuperscript{41} categorizes - to a materialist measure of an overarching duration, to which these aforementioned descriptors become facets. That which ascribes itself to history can often be found in the material integrity of its existence. Given enough time even the most manifold cultural object is subject to an eventual scarcity. Caught up in the cacophony of transmissions, perhaps we forget to look not at the moment of production, or its dispersion, but at their fate.

\textsuperscript{39} Walter, Benjamin, \textit{The work of art in the age of mechanical reproduction} (UK: Penguin, 2008).
\textsuperscript{40} Joselit, \textit{After Art}, 2013, 16.
\textsuperscript{41} Steyerl, \textit{In Defense of the Poor Image}, 2009, 4.
In my work to date I have sought various means to understand and locate the printed objects relationship to digital and screen-based culture. In 2009 I founded the website Painted, Etc. which now has a global readership in excess of 150,000 subscribers. Its aims were to chart the passage for painting as experienced through the instantiation of a printed condition, with its association to screen-based and network dependent viewing.

In a series of preliminary works and writings I sought to locate digital materiality in many attempts at the relationship of screen to surface (see Appendix). For the final work at the culmination of my MFA research I have produced a suite of printed outcomes that query material relationships evidenced in the structure of this essay. The primary goal of the work in exhibition is to take a sample and stratify it across a range of surfaces and locations in order to display the innate ability of an image to travel in this way, and to then question the implicit nature of each instance in terms of duration within an aesthetic regime that builds from painting, drawing and photography.

In earlier attempts I made an initial drawing and then scanned and commercially reprinted it, adhering the drawing to the printed surface in a manner that made it difficult to ascertain which one was the reproduction. However realizing that this work would only reinforce the notion of an original and its copy, I decided to produce the work digitally from the outset, and then print it to a range of surfaces, presenting the file alongside them as a material surface itself. In this way there is no original present, only a series of instances

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of the work. As outlined in this paper, the differential measure of these instances can only be assumed in what is assumed will be their variant durations. Ink may fade faster in some outcomes over others, the file may corrupt. I intend to inspect the works later in life to reassess what may have occurred.

In aligning the printed outcome to a host of other outcomes, some are stored in website locations that are shared among users on a dedicated Tumblr website. Others are outsourced to production companies that commit the work to various objects and substrates. Overall, the work seeks to present a kind of humorous battle, pitting various formats against one another in order to examine their abilities as carriers of an assumed history. Orientated as an art product of its own branding, each instance is staged as a kind of comparative stake at both material durability and its resultant container for any surrogate aesthetics to which we may ascribe the conditions of beauty or meaning.

In positioning the artwork as a transferal of the same data across various sites and surfaces, the work draws some parallel to Joseph Kosuth’s piece One and Three Chairs, in which an idea is related to an object and its image. Kosuth deferred to the linguistic function and symbolic image form of the work but that is not my intention. The array to which a work can now be commercially spread is what each piece seeks to highlight, in particular, the durational capability of each material outcome is paramount.

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We cannot know how each iteration will fare in longevity in contrast to its other manifestations, but with a view toward each works assumed posterity, perhaps at periodic moments the work may be inspected according to a set of instructions, or a condition report, that may be able to determine durational value as an aesthetic and material outcome. Through this measure of variant durations, a network of conditions can be observed in the chart below. By using this formula we may be able to deduce a structure of failures on the part of certain materials to carry the artwork.

Figure 5 - Joseph Kosuth, One & Three Chairs, 1965, Variable, http://www.moma.org/collection/object.php?object_id=81435

The title of each work refers to the location in the network of its file-based counterpart. The materials listed for the work detail the many formats it has manifested. On a periodic basis, a condition report must be completed as a
part of the artwork. These instructions are included on the verso of the artwork object, and also alongside the uploaded copy. This document will seek to use a qualitative method of analysis based upon a researched amalgam of museum reports that seek to state what condition each item of the artwork is in. This method will seek to address a litany of states, based upon standards as outlined below for each element of the work:

<table>
<thead>
<tr>
<th>OBJECT</th>
<th>CONDITION</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image File</td>
<td>Link Active</td>
<td>Accessibility</td>
</tr>
<tr>
<td><a href="http://www.conditionreport.tumblr.com/373762">www.conditionreport.tumblr.com/373762</a></td>
<td>Alterations</td>
<td>Losses</td>
</tr>
<tr>
<td>Commercial UV Print</td>
<td>Fading</td>
<td></td>
</tr>
<tr>
<td>with acrylic paint</td>
<td>Tears</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cracks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Damage</td>
<td></td>
</tr>
<tr>
<td>Ceramic Plate</td>
<td>Fading</td>
<td></td>
</tr>
<tr>
<td>with Inkjet Print</td>
<td>Cracking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chipping</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emulsion</td>
<td></td>
</tr>
</tbody>
</table>
It is hoped that by instantiating an artwork over a suite of locations, the stratified nature of the work supplants any essentialist enquiry as to where it ends or begins. The idea is to move toward a zone where the image can be contemplated as embedded in a multitude of states to which the only effective outcome is the varying duration of some forms over others. The artwork as image is then not determined by its material instances per se, but will operate by it varying in duration dependent on its material expression between its material carriages. As the journey is not yet complete, we cannot yet know which instance will carry it furthest or fail most beautifully.

Figure 6 - Ry David Bradley, *The Same Painting in 5 places*, 2013, Dimensions Variable.
CONCLUSION

To some degree, an insistence on durational issues is in stark contrast to the demands of popular 21st century culture, that expects or forces rapid access, sharing, streaming and disposal. Tech startups aimed at young audiences like SnapChat deal exclusively in content that is never meant to be kept, yet it is arguable whether it is in fact leaving a trace. There are methods of screen capture to keep and store content shared on its networks that indicate at least for some images, the personal desire to retain them is inevitable. It is to those images that the history of SnapChat will be ascribed.

Figure 7 - Author Unknown, 2012, http://sneakhype.com/dopeness/random-dopeness/2013/09/14-best-snapchat-screenshots-find.html/136316
If in the reception of art we are to abandon the author for style, the instance over the original, we must look far further than the moment of production and its rate and capacity for dispersion. When multiple versions and instances are subject to duration, some may begin to emerge over others in that which best endures cultural preference, proprietorship, the material condition that carries them and a host of other factors that facilitate an image being kept. The original artifact is at best a construct to which instances gather and fall as they vie for attention, and most importantly, are subject to an eventual measure: duration. In an era where we are continuously, briefly entertained, what remains? Ignoring the stream of marketing hype, the rampant spread of the culture industry and its brand strategies that benefit from contemporary bewilderment, what is it about the present that is worth holding onto?
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APPENDIX

Below are listed images that display work made in preparation for the research undertaken. In these works a scanner was employed to reproduce an initial sketch which was then commercially printed to a metal surface alongside the original, making it difficult to ascertain if the whole work was printed or collaged as drawn and printed elements fused. The same file from the scanner was also present on a USB drive. Each work was presented as its own multiple, where the same artwork had been stratified across various instances to which the wearing of time became the only differential measure.

Ry David Bradley, *Preparatory Work, UV Cured Ink on Aluminium, 2013*
Ry David Bradley, *Preparatory Work*, UV Cured Ink on Aluminium, 2013
Ry David Bradley, *Preparatory Work*, UV Cured Ink on Aluminium, 2013
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