Photographic Mediation as a Mode of Production:
Investigating the Agency of Commercial Institutions in Contemporary Vernacular Photography

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PhD Thesis

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Abstract

This dissertation argues that to understand what is at stake in contemporary vernacular photography, it is vital to account for the commercial imperatives that are invested in our photographic apparatus. The vernacular is often seen as emerging from the milieu of everyday life, operating outside of institutional constraints. However, commercial institutions have always played a vital role in shaping the meaning and matter of vernacular photography, producing the extended network of devices and protocols through which photographic activity takes place. Vernacular photography should therefore be seen to encapsulate a series of complex negotiations between individual desires and commercial imperatives. Through an examination of three central case studies - Kodak, Snapchat and Ditto Labs - this thesis aims to elucidate how the productive potential of vernacular photography is instrumentalized as a means of generating value. Bringing together approaches from western Marxism with contemporary theories of networked media and photography, the argument is made that *photographic mediation* can be usefully framed as a mode of production. Photographic mediation, referring to the processual and material dynamics of photography, is employed to investigate the circuits of labour, value and desire that flow through our photographic apparatus. In performing this analysis, the concept of *deterritorialization* is applied as a way of understanding how photographic mediation has become more productive through destabilizing the boundaries between photography, subjectivity and the everyday. As photography proliferates and disperses into the rhythms and atmospheres that constitute daily life, it is increasingly imbricated into the performance and production of identities, relationships and desires. Under these circumstances, it becomes all the more vital that we recognize the role of commercial actors in shaping not only our photographic apparatus, but also our ways of being in, and relating to, the world.

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Introduction: The Commercial Imperatives of Vernacular Photography

In January 2018, following a period of prolonged decline, Kodak partnered with WENN Digital to develop the KodakCoin cryptocurrency and the KodakOne image rights management platform.[1] Through a mixture of artificial intelligence, web crawlers, blockchain and smart contracts, Kodak planned on bringing the era of networked photography under a new form of corporate control. Whilst limited in substantive detail, their promotional material offers a glimpse of Kodak's vision for the future of photography (RYDE Holdings 2019). Each photograph registered through the KodakOne platform is issued a blockchain-based licensing agreement, or 'smart contract'. The function of this contract is to prescribe the terms for the image's republication, to execute agreements between photographers and publishers, and to facilitate future financial transactions, all without the need for traditional legal and commercial intermediaries (Greenfield 2017). In parallel to this financial and legal arm, web crawlers enabled with artificially intelligent algorithms scour the network for infringements of the license. Through pattern recognition technology, these web crawlers detect instances of image use, even when the image in question has undergone significant alterations (such as cropping, rotating and filtering). Once detected, Kodak's software requests payment for use of the image, facilitated via a mechanism provided in the smart contract. This payment is to be issued to the photographer as KodakCoin tokens (units of the Kodak cryptocurrency), which can either be cashed out based on their current market valuation or used to purchase goods and services directly on Kodak's community marketplace. As is so often the case with platform-based ventures, the vision is completed with the generation and exploitation of big-data assets,

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[1] WENN Digital Inc. has subsequently been renamed RYDE Holdings Inc.

whose primary function is to enhance and extend the power of the KodakOne platform.

As ill-fated as Kodak's clamour for relevance in the 21st century appears (despite a dramatic rise in share value following the announcement of KodakCoin, fears of a new 'bubble' in cryptocurrency, alongside slippages in scheduled delivery dates, swiftly saw Kodak return to pre-announcement share price levels [Corbet and Larkin 2020]), it offers a useful illustration of the issues and problems that this dissertation proposes to investigate. For these ventures can be read as Kodak's current answer to the question of how value might be extracted from a photographic world that has undergone a number of radical transformations since the turn of the century. During this period, the technological, cultural and institutional arrangements that underpin everyday photographic activities have been reconfigured in a number of significant ways. The networked image has become the pre-eminent photographic form, playing host to layers of data that add complexity and instability to the image-object (Rubinstein and Sluis 2008, 2013). Photo-sharing and social media platforms have become the primary mode of photographic circulation and distribution, many of which prioritize the ephemeral and transitory over the mnemonic functions of the photograph (Murray 2008). In place of the single-purpose device, the camera is primarily found in the hybrid assemblage of the smartphone (Gomez Cruz and Meyer 2012) and increasingly within a myriad of other ubiquitous networked devices (Kember 2013). And finally, algorithms now seamlessly and quietly assist picture taking, adjusting the colour balance, focus and lighting on our behalf (Steyerl 2017), whilst simultaneously mining images for data about our habits, relationships and desires (Rose 2015).

In considering these changes, it is vital not to create false dichotomies between old and new media (Gitelman and Pingree 2003). Photographic theory in

particular has been prone to proclamations of ontological and epistemological earthquakes following the arrival of new technologies, with cinema, the digital, and the network each having been accused of delivering a fatal blow to photography as we know it (Hand 2012). However, the changes outlined above are not indicative of a singular fracturing moment in photography's history, but rather show a direction of travel that photography has been taking over a significant period. Occurring through a patchwork of interlocking technologies and supported by a number of cultural and corporate institutions, the meaning and matter of vernacular photography has shifted in ways that go beyond the repackaging of social and cultural practices in new materialities. This unfolding terrain has raised several questions not only for scholars but also for commercial entities such as Kodak. Where can the viable commodity of photography be found? What happens to the value of photography when digital images are produced and distributed with near zero cost to the consumer? Which techniques can be used to successfully recreate the revenue streams once generated through the consumption of photographic equipment, services and ephemera? In short, how does vernacular photography continue to be a profitable phenomenon? These questions, which have plagued Kodak since the arrival of digital and networked imaging, are also central to the research project of this dissertation.[2] For this thesis makes the argument that to understand what is at stake in vernacular photography, the commercial imperatives that are invested in our photographic apparatus must be accounted for.

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[2] Kodak was not caught unaware by the technology of digital photography. Indeed, one of their engineers is credited with inventing one of the first digital cameras in 1975. Either a failure to recognize its significance or a fear of the challenge this would bring to their established business model led Kodak to leave this technology unexamined for many years, by which point the market for digital photography had already been largely occupied (Prenatt 2015).

Commercial actors play a vital role in shaping the meaning of photography. From Kodak, Nikon and Polaroid, to Apple, Instagram and Snapchat, the history of vernacular photography is intimately connected with the business practices and motivations of commercial institutions. The dynamic between individual photographic desires and the capitalist imperatives of these organisations forms a central dialectic of vernacular photography. On the one hand, the vernacular can be understood as emerging from the milieu of everyday life, with our experience of different geographical and social territories giving rise to a range of diverse, local and unofficial dialects (McLaughlin 1996). Emerging from the ground up and operating outside of institutional constraints, the vernacular carves out from the available resources a distinct and identifiable space adapted to specific cultural contexts (Fiske 1989; Burgess 2007). At the same time, vernacular photography takes place through an extended network of technologies and protocols that are defined in advance of this photographic activity. Our photographic apparatus is produced by commercial institutions that make key decisions regarding the available technological and cultural resources from which vernacular photography can emerge. These decisions are not made in the milieu of everyday life but are the outcome of hierarchical business models, investment portfolios and marketing strategists, for whom vernacular photography's agency as a tool of individual or collective expression is always secondary to its potential as a mode of production and value generation. It is in the continual renegotiation between these two vectors of photography that the vernacular is produced, read in one direction as the submersion of photographic commodities into the terrain of the everyday, or alternately as the collapsing of a multiplicity of unofficial and emergent practices into the axioms of capitalism.

To gain a better understanding of how commercial imperatives are invested in the practices of vernacular photography, this thesis focuses on how particular

corporations have transformed the meaning and structure of photography in the service of making it more commensurate with the needs of contemporary capitalism. The relationship between commodification, value and photography has arguably become more complex and opaque with the development of networked imaging. Social media platforms, mobile devices, telecommunication networks and artificial intelligence, all contribute in different ways towards our photographic apparatus, alongside a dizzying array of competing corporate interests. In this multi-layered ecology, photography's relationship to capitalism has undergone significant changes, with commercial imperatives and technological developments reciprocally and continuously redefining the photographic landscape. Kodak's decline since the turn of the twentieth century is in many ways a story of being unable to navigate these changes; of failing to anticipate how technological and cultural developments were shifting photography's intersection with the production of value (Harris 2014). Kodak's journey into cryptocurrency and artificial intelligence marks their latest response to these challenges, materializing as an elaborate system of copyright protection and enforcement. By reorientating their business model to the automated management and monetization of photographic labours, Kodak hope to find the value they once generated through the sale of photographic equipment and services.[3]

At first glance, KodakOne and KodakCoin seem like a radical proposition, placing Kodak at the vanguard of what is possible through an array of buzzword technologies (cryptocurrency, blockchain, smart contracts, etc.) However, on closer inspection, Kodak's technophilia cloaks what is

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[3] This is not Kodak's first commercial foray into networked imaging. For example, Kodak had previously launched *Kodak Gallery*, subsequently renamed *Kodak EasyShare Gallery* in 2005, which at its peak had 60 million users. However, Kodak sold the platform as part of a broader bid to stave off bankruptcy in 2012 (Wiles 2012).

fundamentally a conservative project; a vision in which the explosion of networked images - enabled at least in part through the rise of photo-sharing, social media and messaging apps - is brought under a new framework of corporate control.[4] At the centre of the KodakOne platform is a restriction of the free flow of images circulating through the internet, an imperative signalled by their use of the term 'police officer' to describe their apparatus (Ryde Holdings 2019). A series of legal and commercial protocols stymy the streams of images that seek passage through the network, requiring each to be validated before passing on. Free-floating images that are ready and waiting to be repurposed into new signifying configurations are anchored to their point of origin through KodakOne's algorithms, verifying their provenance and re-establishing relations of ownership. With each image on the network accounted for in Kodak's 'distributed ledger' they can be reinstated as a vast collection of commodities which can be individually recorded, tracked and exploited.

This endeavour speaks to an epistemological naiveté on the part of Kodak. In attempting to 'police' the movement of images, they demonstrate a commitment to the value of the photograph as a visual and semiotic commodity, going against the direction of travel that photography has undertaken over the preceding two decades. Images have come to operate in sequences, streams and volleys rather than as stand-alone objects (Lister 2013); rapid circulation has accentuated the polysemy of the photograph, with the authority of the original giving way to a multitude of variations (Henning 2018); and dissociated from their origins, the link between author and image has been rendered increasingly tenuous (Rubinstein and Sluis 2008). In aiming to gain control over this increasingly fluid landscape, Kodak's recent strategy fails to reckon with the ways that this decoding of the stable image-object is

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[4] According to *The 2017 KPCB Internet Trends Report*, as of 2017, it can be conservatively stated that at least 3 billion images are uploaded daily to the internet (Meeker 2017).

fundamentally linked to photography's new modes of production. As this thesis argues, the appearance of over-abundant, free-flowing and out-of-control images is not an undesired outcome of technological change but is the result of competing commercial imperatives that have iteratively reshaped the meaning and materiality of photography. The changing landscape of vernacular photography is not, as such, the product of abstract technological innovation but is intimately associated with the extractive desires of the technoscience and media industries. Far from disappearing, the commodity of vernacular photography has moved deeper into the heart of photographic mediation, with ever greater flows of capital circulating between corporations, photographs and subjects.

What is the Use of Photography?

This research project sets out to address the central question of how the commercial and political imperatives of corporations have transformed the politics and practices of vernacular photography. In what ways has the productive potential of vernacular photography been instrumentalized by commercial institutions as a means of generating value? And furthermore, as technologies embedded in our everyday lives, to what extent does the imbrication of capitalist desires with our photographic encounters shape how we understand and interact with the world? In addressing these questions, modes of critical analysis from two traditions will be brought together: a materialist analysis grounded in the political philosophy of Marxism and a processual and vitalist approach derived from the works of Gilles Deleuze. Bringing these two modes of thinking together, this thesis aims to analyze the socio-material relations and economic conditions within which vernacular photography operates, whilst also recognizing photography's agency in the onto-epistemological processes of subject formation and individuation. These

perspectives are seen not as being in conflict with one another but as able to reciprocally inflect and extend the conceptual terrain that the other offers. A Marxian analysis requires that we examine the circuits of labour, commodities and value that comprise everyday photographic practices, attending to photography not only as a form of cultural activity but as a material aspect of the political economy. As this thesis will explore, photography's relationship to capitalism has always exceeded the limits of the representational image, with commercial imperatives embedded throughout the processes and performances of everyday photographic activity. By drawing our attention to the material and socio-economic relations that underpin photographic activity, a Marxian conceptual framework provides a significant set of tools for understanding the agency of corporations in developing particular forms of vernacular photography.

However, a strictly Marxian analysis tells us little about the desires, emotions and bodies that move through and are moved by photography. By placing photography within a schema of labour, exchange value and commodification, the particularities of the medium are somewhat erased, as are the libidinal investments that are made at each stage of the photographic process (Cohen 2005). The processual and vitalist philosophy of Gilles Deleuze, together with those who have drawn upon his work in media studies and related fields (Beller 2006; Bleyen 2012; Kember and Zylinska 2012; Leslie 2016), provides a different way of thinking about photography that is better placed to attend to these flows of desire and the biopolitical processes that accompany them. Rather than a priori assume a humanist subject at the centre of a technological apparatus, Deleuze prompts us to question how various socio-material assemblages give rise to different subjective formations. Usefully summarizing Deleuze's argument, Claire Colebrook writes:

> We do not exist as subjects who then express themselves; rather, life
> produces certain modes of expression such as painting, writing,
> speaking, moving, sculpting, building and dancing, and each style of
> expression produces its own subject. There is no unified life or subject
> prior to its specific expressions.
>
> Colebrook 2006, 106

Through a Deleuzian conceptual framework, photography is reframed as playing a more fundamental role in the production of subjectivity, operating on desires and perceptions to cultivate modes of being and becoming in the world. In contrast to a representational model of photography, this vitalist and processual approach suggests that photography is not only the process of creating images, but is directly involved in shaping and giving form to matter in the world (Kember and Zylinska 2012). There is therefore an agential significance to photographic mediation that cannot be reduced to an epiphenomenon of capitalism, and must be read on its own terms.

This thesis demonstrates how these two theoretical approaches can be brought into discussion to raise deeper questions about the meaning of vernacular photography's relationship to capitalism. The processual and generative dimensions of photography do not necessarily operate in opposition to the objectifying and commodifying forces of capitalism. Instead, it is precisely because photographic technologies are entangled with the production of subjectivity that makes them so valuable as tools of biopolitical control. As the case studies illustrate, photography can assist in the production of subjectivities more amenable to the demands of contemporary capitalism, reorganizing and reshaping desires so that they flow more directly and with greater force into the material circuits of labour, value and commodities that constitute the axioms of capitalist accumulation. Through this theoretical lens, photography

ceases to be only an ideological or cultural expression of capitalism, becoming an immanent force in shaping the grounds of subjectivity and socio-material relations. Whereas photography has historically been framed within Marxism as the ideological dissemination of capitalist hegemony, often via semiotic analysis of the image (Barthes 1993; Eco 1982), by expanding our perspective to the material, temporal and libidinal processes activated through and by vernacular photography, it becomes clear that there is a much deeper imbrication between capitalism and photographic mediation.

The concept of *photographic mediation* has both an analytical and political function for the argument of this thesis. Rather than emphasizing the objects of media - the images, screens and devices that are scattered throughout the environment - the concept of mediation, which will be theorized more extensively in the introduction, foregrounds the processual and temporal dynamics of media (Kember and Zylinska 2012). Photographic mediation as a term is therefore useful in preventing the argument from moving too quickly from *photography* to the *photograph*, enabling the analysis to centre on the processes, events and desires that are activated by photographic activity (whether or not an image is ultimately created in this process). By attending to the orchestration of bodies, desires and technologies that constitute photographic mediation, and suspending the teleological imperative of the image, an insight can be gained into the investments, both commercial and libidinal, that are activated and channelled through the photographic apparatus. As Bolter & Grusin (1999) argue, the act of mediation is usually erased as soon as it is performed, the image assuming a stance of immediacy and transparency to the represented object (a process closely linked to the 'indexical imagination' [Langford 2020]). Yet, as will become clearer in the progression of this thesis, there is a generative and productive dimension to the

process of photographic mediation; a remaking and reordering of the world which exceeds the discourse of representationalism.

Similarly, the term *productive* also plays a key role in the argument of this thesis. It is used on the one hand as a way of making a claim about the meaning and function of photography, and on the other, as a way of temporarily suspending other presuppositions. Of the former, the framing of photography as productive places it immediately within the sphere of material relations. As Elizabeth Edwards (2020, 97) argues, there has been a thread of photographic theory that abstracts out the matter of photography in favour of an analysis of the image as a 'disembodied vision or semiotic construct'. Focusing solely on the imagistic or semiotic qualities of photography misses the social and cultural desires that are invested in particular material forms and practices; a photograph holds very different meanings and performs very different functions when kept in a box under the bed, printed on a canvas over a mantelpiece, folded up in a wallet, or placed on the gallery wall. Whereas Edwards' (2020) focus on the objects of photography reinstates their materiality, the dynamism of productivity makes it particularly apposite to an analysis of the processes of photographic mediation. Vernacular photography is not only encountered as a vast collection of objects or things to be apprehended in the world but also as an array of interlocking processes, procedures and performances in which matter is transformed. Vernacular photography cannot be separated from the contortions of bodies in the profilmic space, from the automatic light adjustments made by the smartphone's algorithm, or from the accumulating data that clusters around the image as it circulates.

The term productivity also enables the temporary suspension of a presumption that the product of vernacular photography is the photograph, offering the

latitude to consider what else photographic mediation might produce. The representational image may be a locus of meaning-making, but the broader context of photographic activity (as per the examples of KodakOne and KodakCoin) should not be overlooked as a significant part of vernacular photography's agency. In linking photography to productivity (rather than, say, creativity), the aim is to signal an imbrication with the forces and processes of capitalism that requires careful analysis, without foreclosing the possibility of a vernacular photography that resists or critiques these relationships. The concept of productivity is intimately associated with a Marxian analytical framework, which includes questions of labour, fixed capital and exchange value. Yet the term also finds purchase outside of this schema. For example, Deleuze and Guattari (1983) speak of 'desiring-production', a vision of the subject as a vast assemblage of productive processes that generates biological and chemical effects. Elsewhere, for Bergson, the process of intuition is a productive force by which unique or original concepts are arrived at (Grosz 2005). This is not to say that this thesis follows a Bergsonian or Deleuzian understanding of productivity, but that the term is agile enough to go beyond its economic applications. Whether the activity of vernacular photography constitutes an instrumentalized form of labour that invests value into commodity forms, or instead if the productive potential of photography might be channelled down another path, is a significant and open question for this thesis.

The potential for the productive capacity of vernacular photography to be instrumentalized by commercial demands is seen in a range of contemporary phenomena. For example, we see it in the development of 'sponsored filters' in certain apps, which embellish our images with branded graphics and 3D augmentations; in the use of social media influencers, who employ an aesthetic of authenticity and lean heavily on the photographic everyday to promote

various products (Abidin 2016); and in the rise of 'photo-interfaces', where embedded links create connections between our images and various goods and services (Gomez Cruz 2016; Rose 2015). There is also an equally significant side to vernacular photography's productivity that occurs out of view, remaining hidden beneath the surface of images and interfaces. Photographic activity is harvested for commercial insight without our knowledge, as algorithms identify patterns of behaviour, emotions and objects within the image. By placing ourselves in front of the camera, documenting the minutiae of our everyday lives, we feed what Geert Lovink (2012, 13) describes as 'the colonization of real-time', in which 'The Machine constantly desires to know what's going on, which choices we make, where we go, who we talk to.' Providing an interface between our bodies and the machine, photography contributes to an accumulation of corporate biopower; the production of intricately detailed knowledge about a population's actions and desires, as well as the means of their shaping and redirection (Kember 2014).

This thesis will also turn to Gilles Deleuze and Félix Guattari's (1983) concepts of *deterritorialization* and *reterritorialization* (developed most notably in *Anti-Oedipus* and *A Thousand Plateaus*) as a useful framework for understanding this changing network of relations between photography and commercial imperatives. Through this theoretical lens, the codes and structures of vernacular photography can be understood as being progressively deterritorialized to enable greater flows of capital to pass through its apparatus. Describing the dissolution or decoding of a structure, the process of deterritorialization always operates in the service of enabling greater freedom of flows across a territory (Deleuze and Guattari 1983). As Adrian Parr explains:

> Perhaps deterritorialisation can best be understood as a movement producing change. In so far as it operates as a line of flight,

deterritorialisation indicates the creative potential of an assemblage. So, to deterritorialise is to free up the fixed relations that contain a body all the while exposing it to new organisations.

(Parr 2010, 69)

Whilst the term deterritorialization is more frequently associated with cultural anthropology and geopolitical territories, Deleuze and Guattari's use of the concept is applied to territories of different forms and scales, from the individual subject ('the body without organs'), to canons of literature ('minor languages') and globalized societies ('the control society') (Colebrook 2006; Parr 2010). Perhaps as a guard against systematization and stratification, Deleuze and Guattari offer little by way of a definitional explanation of deterritorialization, preferring instead to set their concept to work in the overlapping arenas of psychoanalysis, cinema and capitalism. They make clear, however, that deterritorialization is closely associated with processes of reterritorialization; the establishing of new structures that recombine these newly freed flows into different relations. Importantly for Deleuze and Guattari, deterritorialization and reterritorialization are not conceived of as a binary opposition, but as two complementary aspects of a complex, multidimensional and ongoing process: 'deterritorialization on a stratum always occurs in relation to a complementary reterritorialization' (Deleuze and Guattari 1983, 55). Various territories or assemblages are disassembled, reconstituted and recombined to enable greater flows of energy to pass through them, as in their example of markets deterritorializing the socioeconomic system of feudal agriculture, which in turn instigated mass-scale commercial production and the commodity form as a new territory (Patton 2010, 73).

To provide a concrete example from vernacular photography, the family album may be considered. A privately maintained display of familial togetherness,

ritual celebration and positive change, the family album operated as a photographic territory with clearly defined codes and relations (Holland and Spence 1991). Counter-narratives and ideological struggles certainly took place within the territory of the family album (artist and activist Jo Spence's *Beyond the Family Album* (1978) provides a particularly clear example), yet for a significant period of the twentieth century it remained intact as a central territory of vernacular photography; a series of tacitly established procedures designed to reproduce the idealized family through image, myth and ritual (Prøitz 2011). However, over successive technological and social changes, the physical and ideological structures of the family album have largely unravelled. The singular familial archive has given way to a multiplicity of individualized photographic narratives that diverge from the form and purpose of the family album. The structures of consuming and archiving vernacular photography have been deterritorialized, as the constraints of the family album were overwhelmed by an array of competing photographies, encouraged in part by cheap consumer electronics and in part by the increasing individualization of consumer culture (Slater 1995; Prøitz 2011). Deterritorializing the family album was pivotal for unlocking the creative and generative potential of contemporary vernacular photography, removing the constraints of social and aesthetic conventions which had become a brake on the possibility of a more productive vernacular photography. Novel assemblages were created from these deterritorialized flows, as connections were made into other socio-technical networks. Ideological narratives and aesthetic forms coagulated into new signifying chains, as photography reterritorialized into new arrangements. As the following chapters explore, deterritorializing the family album was a vital step in vernacular photography becoming commensurate with the logics of 24/7 mediation, the biopolitics of big data and platform capitalism.

If photography is subject to the processes of deterritorialization and reterritorialization, it is necessary to ask whether photography remains a useful conceptual lens through which to examine contemporary media technologies and institutions. Have we not witnessed over the preceding decades a decoding of photography as a distinctive medium with identifiable characteristics? Photography increasingly shares the same receptive context as other media, as they converge through the mediating interface of the smartphone (Beer 2012). The platforms through which our images circulate are similarly often agnostic to the forms of media that flow through their networks, with photography submitted to the same series of network protocols as moving images, music, graphics and text (Rubinstein and Sluis 2008). Furthermore, as photography has become networked, it coalesces with technologies of machine learning, augmented reality and computer graphics, each of which challenges our ability to theoretically separate photography as a unique medium with a privileged relationship to reality. Photography's new affordances appear therefore to be directly connected to its gradual dissolution as an identifiable set of technologies and practices, raising the question of whether it is helpful to cling to a theory of photography at all, rather than map the terrain of contemporary media cultures on their own terms.

Changes to the affordances and capacities of contemporary photographic media certainly raise significant questions concerning the limitations of photography theory. For example, the insertion of digital processing into our apparatus can be understood as severing the link between the image and the world it purports to represent, undermining the indexical ontology of photography that has formed a central strand of photographic theory (Mitchell 1994). And whilst structuralist and post-structuralist interpretations of photography already reject the essentialism of indexicality in favour of a discursive and institutional genealogy, the embedding of photographic

technologies in assemblages that bypass the image and spectator altogether poses an equally significant challenge to accounts of photography as a tool of visualization and subjectification (Tagg 2009). The shifting sands of photography may therefore call into question the foundations of particular theoretical outlooks. However, this does not a priori mean photography is no longer a valid or relevant object of analysis. Following Patrizia Di Bello's (2008, 151) insightful analysis, rather than seeking to find a new border of photography to police, we should be willing to embrace the open and indeterminate nature of photography as one of its strengths, even as it demands that we continually return to and rethink the meaning and matter of photography. Reaching the limits of theory is not the same as reaching the limits of photography, and the continuing dynamism and mutability of photography should prompt reflection on whether we need to revisit our theoretical armature, rather than prematurely reaching for photography's death knell once again.

Whilst acknowledging that historical and material contingencies render any conclusive definition of photography impossible, this thesis argues that the conceptual terrain of photography remains a valid lens for understanding aspects of contemporary media culture. However, recognizing that what falls under the umbrella of the photographic tends to continually spill beyond the theoretical boundaries designed to encapsulate it, this thesis begins without a clearly delimited ontology of photography. Drawing on Kember and Zylinska's (2012) concept of photographic mediation (discussed above), photography is understood as a loose collection of light-based processes that share affinities and connections with other media. Photography has always operated within hybrid spaces, responding to and coalescing with different technological and cultural practices. The freeing of fixed relations in order to enter new assemblages is a key facet of Deleuze and Guattari's concept of

deterritorialization, with the ability to change by reorganizing flows and creating connections understood as an indicator of vital potential within a territory (Parr 2010). Under this theoretical framework, transformations to the technological and cultural dimensions of vernacular photography are not read as signs of its demise, but of its continuing vitality, with new possibilities being produced in the reconfigurations of photographic mediation. The aim of this thesis is not therefore to isolate vernacular photography as an ontologically distinct medium, but to trace the agency of photography as part of hybrid assemblages that have been entangled deeply into the fabric of our everyday lives.

Kodak's story, including their recent ventures with KodakOne and KodakCoin, is particularly apposite to the narrative of vernacular photography's deterritorialization. Frequently credited with 'democratizing' photography, Kodak played a vital role in transforming photography from a specialist activity practiced by a select coterie of professionals and wealthy dilettantes, into an all pervasive, mass consumer activity (Sarvas and Frohlich 2011). Beyond technical simplifications to the photographic process, this transformation relied on changes to the meaning and function of photography, as Kodak expanded the repertoire of moments and events deemed photo-worthy outside of the canon of fine arts and into the terrain of everyday life. The business practice of Kodak was not, however, about dismantling social and aesthetic hierarchies, but the creation of a set of commodifiable practices and activities produced by cultivating new desires for capturing and documenting family life through the camera (West 2000). As Chapter 1 examines, Kodak's success was based on a strategy of deterritorializing existing structures of photography, thereby enabling life to be mediated at a pace and proximity never previously imagined. Equally significant was a reciprocal closing down of available photographic possibilities; a defining of symbolic components that

photographic moments should possess, and just as importantly, those symbolic components that should remain absent.

In contrast to this earlier history, KodakOne and KodakCoin appear as part of a strategy of containment; of creating a flexible and distributed structure adequate to the task of managing and restricting the flows of contemporary photography. Technical innovations in these products mask a conservative vision of a totalizing infrastructure that encompasses the fragmented and divergent photographic practices circulating through networked media. Seeking to reinstate the commodity value of the photographic image, the KodakOne platform restores previous relationships of ownership in photography, recreating the dynamic of original and copy, whilst KodakCoin provides a financial mechanism flexible enough to navigate the globalized, decentralized and uneven pathways that our images traverse. By controlling the circulation of images, the apparatus of Kodak is anathema to the new forms of labour and productivity enabled by the rapid flows of networked and mobile media (Pink and Hjorth 2014). In the terrains of platform capitalism, 24/7 mediation and corporate biopolitics – or what has more recently been dubbed, 'surveillance capitalism' (Zuboff 2019; Couldry 2016) – the image is not itself the intrinsically valuable commodity. Instead, photography is framed within deeper and wider productive circuits, performing vital operations for the functioning of contemporary capitalism as part of hybrid assemblages. As images pass between devices and across the network, they entangle themselves in the minutiae of everyday life, forming part of an ever-present ambience that pervades our perceptions and impressions of the world (Gomez Cruz and Lehmuskallio 2016). Continuing the project Kodak began over a century ago, companies like Snapchat, Instagram and Apple have promoted a vision of ubiquitous photography; of consumers engaged in a process of continuous

photographic mediation, navigating the world through the production, circulation and consumption of images.

This thesis argues that this entanglement is central to the productive potential of photographic mediation, enabling photography not only to represent the world but to play an active role in shaping our actions, beliefs and desires (Kember and Zylinska 2012; Eder and Klonk 2017). Beyond the aesthetic and representational significance of the image, processes of photographic mediation come to play *operative functions* in circuits of labour and value: photography provides an interface between ourselves and capital (Gomez Cruz 2016); creates affective triggers that prompt us to take action (Eder and Klonk 2017); transmits data about our behaviours and desires (Rose 2015); and produces idealized photographic imaginaries designed to foster the labour of 'entrepreneurial subjectivity' (Elias and Gill 2017). As per the title of this thesis - *photographic mediation as a mode of production* – photography plays a material and economic role in the functioning of capitalism that extends beyond the representational significance of the image. A central endeavour of this thesis is to make visible and concrete the ways that photographic processes have become commensurate and coextensive with the structures of capitalist production and reproduction in operation today. As demonstrated in the following chapters, this requires looking outside of the image and towards the broader assemblages that photography is embedded within.

Photography and Everyday Life

If the *everyday* refers to that which is submerged into the 'landscape of the mundane' (Highmore 2001, 2), vernacular photography has very much become a part of our everyday lives. Once a punctuation mark in the rhythms of modernity - a signifier of something extraordinary - photography is now fully

absorbed into the texture of the quotidian. The camera has found a home not only at moments of individual and cultural significance, but also during the unexceptional moments of *in-betweenness* that exist in our daily routines. Our lives appear to teem with photographic possibilities, facilitated by expectant cameras sitting close to our bodies, ready and waiting to capture the minutiae of our experiences, relationships and desires. The smartphone has given photography almost unrestricted access to our lives (Beer 2012) and has simultaneously connected photography to the social and material networks that provide us with the imperative to photograph and be photographed (Gomez Cruz and Meyer 2012). Concurrently, our images have become livelier and more dynamic, travelling rapidly through telecommunication networks, emitting signals that demand interaction and playing host to layers of embedded data (Rubinstein and Sluis 2013). Photography has proliferated and dispersed into the rhythms and atmospheres that constitute our lives. Identities and relationships are cultivated and maintained by sharing, commenting on and reacting to images, supported by ephemeral messaging platforms (e.g. WhatsApp, Snapchat, Messenger) that promote playful modes of conversation or 'visual chitchat' (Villi 2012, 39). On other platforms such as Instagram or Pinterest, inspiration is drawn from 'influencers' to develop new aesthetics and styles, gathering visual notes of desired commodities and experiences. In yet another set of applications, swiping between selfies has become a means of arranging our romantic and sexual relationships (e.g. Tinder, Grindr).

All of these phenomena, amongst a host of other photo-dependent activities, signal a deep inveiglement of photography in everyday life. However, they also point to something more complex than vernacular photography simply becoming part of our daily routines. As this thesis argues, they are indicative of new modes of photographic productivity that challenge our conception of what vernacular photography is and is for. They call for a departure from

understanding photography as something exceptional or separable from the rest of lived experience (Pink and Hjorth 2014). Whilst it might be said that nothing operates in such a separate sphere, photography has historically been understood as both conceptually and culturally removed from the space of action, the camera separated from the scene being visually represented. Tracing back to Henry Fox Talbot's *Latticed Window* (1839), the camera and photographer are understood to be situated externally to the scene being depicted, separated by a window that divides the photographic action from the events unfolding in front of it. This conceptual division has also formed the basis of critiques of photography, with Susan Sontag (1977, 8), for example, arguing that 'Photography is essentially an act of non-intervention', the photographer forgoing action in favour of taking the position of a distanced and detached observer. In a softer sense, photography has also been frequently separated from the everyday, remaining an accompaniment to the exceptional or special moment rather than quotidian recurrences. As Patricia Holland (1991) argues, in the domestic photography of the twentieth century, the camera captured those moments of personal growth and familial togetherness, whilst routine tasks were largely excluded. As a result, in personal photographic archives, 'The worlds of production, politics, economic activity and the institutional settings of modern life – school, hospital, baby clinic – are only tangentially present' (Holland 1991, 7).

However, what emerges through the examples outlined above is a vision of photography that is interwoven and knotted into the fabric of daily life. Media objects and processes bleed into the atmosphere. Networks form pathways for navigating the world around us. Rather than a series of discrete media events that unfold at specified times and places, our smartphones, amongst other media objects, produce an ambient mediasphere that seeks to be with us everywhere and at all times. This state of play is evocatively described by

Esther Leslie (2016, 236) as the contrast between the historical shine of the spectacle that attracted our attention, and the phosphorescent glow of the screens in which we now habitually bathe, 'a soft emanation of light, a dousing, an ethereal pervading.' We are no longer drawn to the media but are submerged into their flows, with streams of images, sounds and data perceived as naturalized and reassuring phenomena. Similarly, the absence of this ambient glow is felt keenly as a moment of disorientation and unmooring, a disturbance to the rhythms and pathways that constitute our lifeworlds. As Jonathan Crary (2013, 89) expresses, there is a moment of dislocation when we disconnect from our devices, fleetingly intuiting the 'disparity between one's sense of limitless electronic connectedness and the enduring constraints of embodiment and physical finitude.'

How can we articulate what is at stake in vernacular photography under such conditions, when conceptualizing photography as a discrete set of practices occurring at specific moments is becoming increasingly unsustainable, and our everyday experiences are subject to almost constant photographic mediation? As Joanna Zylinska (2016) argues, the binary division of aesthetic and social functions that cleft the vernacular from other modes of photography appears inadequate to capture the dynamism and vitality of everyday photographic mediation. Rather than positing vernacular photography as lacking artistic validity or as the 'grab-bag left-overs' (Batchen 2000a, 229) of images that lack the higher purpose of the arts or journalism, the productive and agential significance of vernacular photography must be thought of on their own terms. As our lives are subject to almost constant photographic mediation, photography becomes an integral aspect of our being in, and relating to, the world. We might as such push Susan Sontag's (2004, para. 12) statement that 'to live is to be photographed' one step further, and argue, as Zylinska (2017, 72) does, that 'life itself is photographic.'

Submerged into the everyday, the political, cultural and economic contours of photography risk escaping out of view, becoming a normalized part of daily life that drops below the threshold of visibility. On the one hand, as a vital armature of daily life, the photographic has become an inescapable aspect of navigating the world around us, with previously unseen or unnoticed phenomena rendered as visual objects and processes. At the same time, the ubiquity of photographic mediation makes it enigmatic and opaque to scrutiny, part of a pervasive and ambient mediasphere that is perceived as 'second nature'. As Ben Highmore (2001) argues, the everyday is not an ahistorical set of necessary routines for living but marks a frontier, past which new phenomena are integrated into our perceptions and sensations of the world, disappearing as contested terms. The unfamiliar made familiar, the everyday bears witness to the 'the absorption of the most revolutionary of inventions into the landscape of the mundane' (Highmore 2001, 2). In this regard, the *everydayness* of photography makes it harder to recognize how it has dramatically reorganized our lives physically and psychically, and furthermore, makes it harder to imagine alternatives.

It may appear paradoxical to claim that a surfeit of photography has created a deficit of visibility; is visibility not the axiomatic condition of photography? Are we not living through a moment of hypervisibility: of an excessive selfie culture in which we demand to be seen (Peraica 2017); of state and corporate surveillance given unbridled access to our lives (Giroux 2015); of photographic drones commanding an aerial view of the world (Holbert 2017); and of the image pushing text further to the margins of culture? Whilst there is some truth to these claims, it is also clear that photography has always operated as much through the invisible as it does the visible. For example, the act of framing has always performed the dual function of inclusion and exclusion, rendering

certain subjects visible to the camera, whilst others are routinely cropped, obscured and hidden from view (Holland 1991). Furthermore, the significance of light, glass and projection to the apparatus of photography has been historically counterbalanced by the role of darkrooms, negatives and shutters, components that have formed a vital part of the physical and psychic economy of photography. The aperture might be said to operate as a fulcrum of this dialectic; the hole that produces the image by shutting out the majority of light from inside the body of the camera, whilst simultaneously ensuring that the chosen rays can pass through to the recording medium.

These dynamics of the visible and invisible are also present in our temporal experience of photography. As Ignaz Cassar (2012) argues, the captured image has historically entered an indeterminate state. After photographic exposure has occurred, but before an image has been developed and fixed, there was only a trace, a visual impression that existed in the photographer's mind alone: 'All there is for now is latent: between the capture of the image and its appearance, an interval of uncertainty. Not only will there be an image but also: is there an image?' (Cassar 2012, 39). For Cassar, it is precisely during this interval between visibility and invisibility that desires are invested in the telos of photography, projecting forward to the unveiling of the image. This state of indeterminacy is more than a temporal disjunction, it is a period of condensation where our motivations are revealed precisely through the absence of the image. The contemporary apparatus of vernacular photography may have displaced this moment of indeterminacy from the interval between capture and development. Indeed, with digital cameras and smartphones the image emerges on the screen before it has even been captured, seemingly inverting this psychic economy of latency and expectation (Cassar 2012). However, the dialectic of visibility and invisibility continues to find significance to the practices of vernacular photography. Images shared seek

maximum exposure, whilst an array of displeasing duplicates are instantly discarded (Rubinstein and Sluis 2013). Hidden metadata clusters around our images, whilst all the time rendering us more visible as subjects to platform owners. Algorithms sit invisibly behind the smooth interfaces of photo-sharing platforms, quietly determining the priority and visibility of images in our feeds. In each of these facets, a significant portion of vernacular photography occurs outside of our immediate visual perception, the dialectic of in/visibility extending to the entire apparatus of photographic production, circulation and distribution.

Crucially, the visible and the invisible do not constitute a binary opposition. As the above examples demonstrate, they act as complementary components in which both play a significant role in structuring the meaning of vernacular photography. Photography's ubiquity therefore speaks to more than an excess of photographic imagery; it speaks to the naturalization of a particular mode of navigating and making sense of the world, of distributing the visible and invisible in ways supportive of certain political and economic projects. In this way, Nicholas Mirzoeff (2011) argues that visuality should not be understood as a synonym for images, imaging devices, or the ocularcentric in general, but as the assembling of a set of relations designed to produce an ideological perspective of the world that defines the 'normal' or 'everyday'. An apparatus of visuality orders and aestheticizes information to create discursive and material effects, framing the popular imaginary in terms amenable to its demands. Vernacular photography – as one such apparatus of visuality - is not only embedded in the everyday, but is productive of the everyday, creating an epistemic field that seeks to define the grounds of objectivity and subjectivity (Mirzoeff 2011, 49). In seeking to understand the commercial imperatives of vernacular photography, it is therefore essential to go beyond the visual surface of photography and investigate how this interplay of the visible and invisible

operates as a powerful tool in the production and management of our beliefs, relationships and desires.

Vernacular Photographies

The term *vernacular* is used in photographic theory alongside parallel adjectives such as *domestic*, *personal* and *amateur*, to denote the forms of photography we engage in as a part of everyday life. However, unlike these parallel terms, the vernacular inhabits a specific productive tension that is central to some of the arguments addressed in this thesis. Beyond connotations of the everyday, the term vernacular signifies an informal language that operates outside of official or sanctioned discourse. Emerging from the milieu of lived experience, the vernacular is formed by incorporating aspects of culture from outside of itself, whilst carving out a distinct and identifiable space adopted to different cultural contexts (Burgess 2006). Always related to a local rather than a global context, the vernacular is an expression of the situation of a particular group, defined by a myriad of cultural, geographical and historical factors (McLaughlin 1996). However, when we consider the term vernacular photography, and the practices and subjects that are evoked by its use (families, leisure, vacations, and increasingly food, cities and the self), we might question the degree to which these practices emerge from specific cultural milieus and the extent to which they are sanctioned and constricted by available cultural and technological resources (Fiske 1989). What limitations are imposed on the creation of a vernacular when the processes of photographic mediation are managed by a handful of commercial actors? Do Instagram or Facebook's platforms constitute official institutions in which photographic discourse is in fact highly regulated, perhaps even more so than the art gallery? In short, does vernacular photography emerge from the milieu or is it simply a function of the commercial imperatives of technoscience and media industries?

Reflecting on the uniformity and repetition of vernacular photography, artists have playfully questioned our tendency to gravitate towards a rather narrowly defined visual space. For example, the music video to Hierophante's *Clichés* (2016), draws on 'our tendency to be unoriginal' in the creation of a video montage constructed entirely from the repeated visual motifs of Instagram. Likewise, artist Phillip Schmitt's 'speculative design' for a camera, *Camera Restricta* (2015), playfully questions our proclivity for capturing images of the same sights and landmarks when exploring the city. A design prototype for a new type of 'disobedient' camera, Schmitt's *Camera Restricta* features a retractable shutter release that 'hides' when the on-board software detects that 'too many' geotagged images have already been uploaded from a particular location, thereby prompting the user to move on and occupy a more original vantage point. Similarly, articles and blogs across the internet deride the recurrence of particular subjects and motifs apparent in contemporary vernacular photography, with titles such as *Are You Still Making These 10 Photography Clichés?* (Dunlop 2016) and *The Instagram Rules: The Good, the Bad, and the Very Boring* (Bloomingdale 2015). These critiques of vernacular photography's conservatism often underplay its role in the production of new aesthetic modes outside of the academy. The creation of different photographic genres can challenge pre-established conventions of photography, producing a shared aesthetic that emerges through local interactions, eschewing traditional distinctions between the amateur and the professional (Murray 2008). However, the shared aesthetics of the vernacular are often discounted precisely by virtue of their emergence within everyday life, as opposed to the rarefied environment of the academy. As curator William Hunt puts it, 'Vernacular photography seems to be the visual detritus of everyday life: social, diaristic, documentary, and not, by definition, Art at all' (Batchen 2000a, 231).

For those who decry the rising tide of poorly shot selfies and food close-ups that are flooding the internet, there is a sense that vernacular photography is undermining hard-won arguments over the artistic legitimacy of the medium. Photographers such as Antonio Olmos question whether camera phones are causing the death of photography (once again), as vernacular images invade newspapers, magazines and exhibitions (Jeffries 2013). Such anxiety around the cultural legitimacy of photography stems in part from a sense of vernacular photography operating outside of, or even in antagonism to, the prescribed conventions of the academy, appropriating and remaking photography from its own street-level vernacular that challenges the art institution's authority (Okabe 2004). Left with two options, the professional photographer either challenges the inadequacy and visual illiteracy of the snapshooter, as Olmos undertakes, or appropriates and recuperates the vernacular back into the canon of appropriate visual styles. These strategies remain, however, fixed within a modernist art-historical discourse that is anxiously concerned with securing the values of 'originality, innovation and individualism' (Batchen 2008, 124) in order to confirm photography's artistic legitimacy. Under such terms, the vernacular becomes divorced from the social and communal practices of those who produce and share such images, reduced instead to a form or style to be refuted or recuperated by the academy.

Read through the lens of a modernist art history, vernacular photography has frequently been flattened by a discourse whose terms (contested as they may be) are not necessarily its own. As Geoffrey Batchen (2008, 126) argues, in defying 'traditional interpretative and narrative structures', vernacular photography has by and large been excluded from its own history. The vernacular spills over the edges of art history's organizing principles, manifesting in a variety of objects and forms, performing an array of social functions and being produced through networks that complicate clear notions

of authorship: 'Images are created for some purpose. Images do things. They are social objects, not simply aesthetic ones. They are meaningful only when seen in relationship to a wider social network of beliefs and practices, economies and exchanges' (Batchen 2008, 128). In the context of photography's broader history, the vernacular designates more than a particular style or aesthetic, providing a theoretical frame that carries us further than alternatives such as the *amateur* or *unskilled*. Whereas the latter terms imply a lack of training or talent that is preventing the photographer from becoming the creative figure of art history (Kaplan 2000), the former indicates a more complex and multifaceted phenomenon. As Jean Burgess (2007) argues, terms such as *amateur* are appended to terms for which the unspoken default is *professional*, thereby producing an implicit dividing line within a given field. By contrast, the vernacular points to a rather more amorphous collection of practices emerging from a range of everyday experiences; a many-headed hydra that cannot be reduced to the binary other of professionalism (Burgess 2007). The vernacular prompts us to ask different questions of photography. What ideological positions are embedded in its recurring visual themes and motifs? What work is photography doing in everyday life? What competing forces seek to define the grounds of the vernacular?

One way of opening up the conceptual terrain of photography to these questions has been through the concept of *photographies*. Recognizing that no singular perspective or theory will be able to contain the multiplicity of technologies, practices and discourses that coalesce under the umbrella of photography, the concept of photographies acts as an invitation to expand the range of available critical perspectives without seeking a unifying theory or ur-photography ('Editorial Statement', 2008). Batchen (2008) argues that the ethnographic turn in photographic theory offers the possibility of a more heterogeneous theoretical discourse, one that acknowledges and engages with

multiple photographies. This broad set of methodological approaches, including the works of Elizabeth Edwards (2004), Jonas Larsen (2008), Daisuke Okabe (2004) and Susan Murray (2008), has given both a grounding and breadth to the discussion of what vernacular photography means in the 21st century, engaging with material and experiential interactions with photography and puncturing some of the abstracted myths of the networked image. However, as the previous section suggests, photographic processes become naturalized phenomena that play an active role in producing the everyday, transforming how we navigate and interact with the world. Our experiences of photography are therefore always shaped, to an extent, by those phenomena which have already escaped into the mundanity of the everyday (Highmore 2001). Furthermore, becoming networked has inculcated photography into new socio-material processes that are not easily registered at the ethnographic level.

As an integral part of larger socio-technical assemblages, photographic mediation triggers actions and processes in the world that are not directly perceived (Farocki 2000; Pantenburg 2017). Photography provides a rich and continuous data source which is used to create new fields of meaning and action, constituting a vital part of security protocols that govern the movement of bodies (Kember 2012a, 2014) and acting as a conduit between consumers and corporations (Gomez Cruz 2016). As Sarah Kember (2014) argues, the use of photography in the wider fields of computing and biotechnology necessitates an expansion and realignment of how we understand its place in the world; a reckoning with photography's enrolment in the service of technoscience industries that seek to instrumentalize aspects of photographic mediation:

> [The] history of photography as key to the quotidian and a central ritual as well as visual practice of everyday life, is currently being written by the

technoscience industries. The vernacular is very much contested ground, and planted firmly within it are camera-enabled objects and spaces that are so taken-for-granted as to be effectively invisible.

(Kember 2014, 184)

Integrated with networked, ambient and ubiquitous technologies that are scattered throughout the environment, photographic mediation, perhaps more so than ever before, has become an active participant in shaping the terms of the everyday, 'part of a reordering of life under the cover of practices of media and communication that are deemed ordinary, every day, user based, personal, private and vernacular' (Kember 2012a, 334). We cannot, as such, map the development of vernacular photography onto the terrain of the everyday, but must begin to interrogate photographic mediation as a vital condition of the everyday.

With a camera in the hands of everyone carrying a smartphone, it may appear as though the medium of photography has become fully democratized. Whilst Kodak spoke rhetorically of everyone becoming a photographer (Collins 1990), their reach paled in comparison to the estimated 3 billion smartphone users in the world (O'Dea 2020). If vernacular photography is intimately connected to the everyday, the rise of mobile and networked imaging affords the possibility of not only more vernacular photography, but of a photography more thoroughly enmeshed with the rhythms and routines of everyday life. With this democracy of image-making in mind, it is tempting to think of contemporary vernacular photography as a force that affords the opportunity to overturn institutional hierarchies in favour of a multitude equipped with the necessary tools to shape the popular imaginary. Might these photographies contest the ideological discourses of mass media through a flood of imagery grounded in subjective perceptions of the everyday? In this regard, vernacular photography

can be seen as a wresting of control over the means of photographic production and distribution. Returning to Mirzoeff's (2011) concept of visuality, such operations are framed as strategies of *countervisuality*, whereby an insurgent force challenges the right of a given authority to define the terrain of the everyday; or put simply, demands 'the right to look'. As Mirzoeff (2011, 1) explains, however, the 'right to look' contains more than being able to see, it requires 'the recognition of the other in order to have a place from which to claim rights and to determine what is right. It is the claim to a subjectivity that has the autonomy to arrange the relations of the visible and the sayable.'

Vernacular photography certainly plays a significant role in defining the terrain of the everyday. However, what is far less certain, is who is claiming the right to make this definition and who is arranging the relations of the visible and sayable. Kember's (2014) work suggests that photography's relationship to the technoscience industries is producing new forms of control enacted through marketing and surveillance that rearrange the vernacular in their own image. From this vantage point, far from being a strategy of countervisuality, vernacular photography appears as part of an apparatus that produces mediated subjectivities amenable to the demands of contemporary capitalism. Operating at the interstices of 24/7 mediation, communicative capitalism and the biopolitics of big data, our photographies seem thoroughly enmeshed in the production of a vernacular that emanates from the needs of capital to perpetuate and expand itself. It is vital therefore that we examine the institutions driving this process and consider the work that photography is being asked to perform on their behalf.

Working Images

An image uploaded to Instagram triggers notifications across a network of followers on their devices. The semantic tags that accompany the image (e.g. #selfie, #catsofinstagram, #followme) form connections to other images and users, creating a topology of data to be traversed by users or evaluated through analytics (Sluis and Rubinstein 2013). A sponsored post may also contain tags *within* the image, forming an interface between the image and various goods and services. Depending on how these images and links are engaged with, profiles will be amended, pushing various content towards certain users and hiding it from others. With all of these processes occurring through the image, representationalism increasingly appears to be an inadequate lens with which to understand photography. Photography's agency extends beyond the visual representations it creates of the world, becoming a vital interface between the rhythms of our everyday lives and the flows of data and capital that circulate through the network. Networked and mobile media have not only created an increase in the volume and velocity of vernacular photography, rather, technological, institutional and cultural changes over the preceding decades have changed the very meaning and matter of photography.

Photography being imbricated with external institutional and cultural forces is nothing new; no cultural practices happen in a vacuum, including photography. However, few practices have been subjected to such a sustained theoretical effort to be defined in abstraction from the social and political fields in which they operate. From William Henry Fox Talbot's (1839, 73) 'natural magic' of the photograph and Andre Bazin's (1960, 8) 'object freed from the conditions of time and space that govern it' through to Roland Barthes' (1981, 34) 'emanation of the referent', later refracted through James Elkins' (2012, 17) 'selenite window', photography has frequently been treated as an object whose

meaning is intrinsic. But photography has never been ontologically or epistemologically self-contained. From its earliest days, photography has been put to work by commercial, legal and governmental actors. Photography has assisted in the management and administration of states and empires (Tagg 1988; Ryan 1998), has monitored and mapped the movement of workers in the factory (Lindstrom 2000) and has extended the sight of the general in the battlefield (Mirzoeff 2011). As John Tagg (1988, 63) argues, our understanding of photography's history has to account for these power relations in which it has been invested, stating '[it] is in this field we must study, not photography as such.' It would therefore be a theoretical misstep to analyze photography in abstraction from the political and social fields in which it is practiced, as 'Photography as such has no identity […] Its history has no unity. It is a flickering across a field of institutional spaces' (Tagg 1988, 63). For Tagg, photography is ultimately bound up with the production of new modes of knowledge and power over the social body, with a belief in photography's indexical mode of representation arising from the evidentiary needs of legal and state institutions.

However, the institutional spaces that surround and intersect with photography have transformed, multiplied and intensified, with new institutions claiming a significant stake in the meaning and matter of vernacular photography. Crucially, representationalism - the clear separation of the object and its representation - increasingly appears as an impediment to the work that commercial actors and state institutions want photography to do in the world. Caught in the orbit of what Harun Farocki (2000) termed *operational images*, vernacular photographies are called not only to represent things, but to actively do things. Farocki's works, such as *War at a Distance* (2003) and the *Eye / Machine* series (2000-2003), examined the various ways in which images had become active participants in actions being taken in the

world, instrumentalized as part of military and industrial operations: 'Instead of simply representing things in the world, the machines and their images were starting to "do" things in the world' (Paglen 2014). Farocki (2000) defined operational images in the negative as '[images] without a social goal, not for edification, not for reflection.' By this definition, most personal photographic practices appear not to meet the criteria of being operational images, almost always being produced in the service of personal and social needs. However, in a softer sense, vernacular photography has accumulated a number of productive capacities that go beyond their reflective qualities, merging with technical operations through the tools of pattern recognition and data mining in networked media operations (Pantenburg 2017). Returning to the example of an Instagram post being uploaded, the image not only serves as a representation, but is able to direct traffic, generate data and refine algorithms, producing material effects and outcomes in the world. As Volker Pantenburg (2017, 55) states, 'What the operational image does is that it performs work. It is, as I indicated earlier, etymologically and literally speaking a "working image".' Whilst our photographic practices may not produce operational images in the strictest sense used by Farocki, they are certainly engaged as instruments for the production and circulation of capital; they are working images.

As the photographic spills out of the frame and intervenes in everyday life, the separation of the image from the world it purports to represent becomes increasingly untenable. But more than this, for those the image is working for, such a separation has become undesirable. Photography's role in various settings was touched upon above as a means of illustrating how these fields produced photography as a material and epistemological apparatus (e.g. industrial capitalism, the military and colonialism). These fields were invested in a vision of photographic mediation that was productive of particular

epistemological arrangements, including the concept of indexicality, the evidentiary force of the image, and the separation of object and subject (Tagg 1988, Batchen 1997). Whilst these epistemologies remain a central part of photography's agency, they are increasingly joined by discursive and material frameworks that stem from the competing needs of current institutions. For example, whereas the military-industrial complex had sought from photography an enhanced visualisation of the theatre of war, by the end of the twentieth century, as Farocki's work on the use of 'smart' missiles in the first Gulf War illustrates, images are being asked to perform productive and destructive actions as part of military operations. As a further example, photography can now be found as part of the logistical apparatus of capitalism, directing commodities, transportation and workers based on information gleaned from the smartphone camera's ability to read two-dimensional barcodes (QR codes) that are spread throughout warehouses, factories and offices (Gomez Cruz 2016).

To be precise, the distinction being made is not between an earlier photographic apparatus that is ontologically representational and a contemporary apparatus that is ontologically operational. Photography is a material and discursive assemblage that has always had transformative effects in the world. Instead, what is being suggested is that a number of institutional and commercial actors are invested in dismantling the discourse of representationalism as a means of instrumentalizing photography in new ways. It is useful to return to Tagg's analysis of the photographic image to clarify this distinction. For Tagg the authority of the photographic image does not emanate directly from its technical qualities, but from historical and institutional investments that shape the meaning of photography:

Histories are not backdrops to set off the performance of images. They are scored into the paltry paper signs, in what they do and do not do, in what they encompass and exclude, in the ways they open on to or resist a repertoire of uses in which they can be meaningful and productive.

(Tagg 1988, 65)

Put to work as part of a disciplinary apparatus, the discourse of indexicality enabled photography to perform as a distant, objective and objectifying gaze, producing subjects amenable to the needs of the state and capital. Invested with the authority of these institutions, the indexical image was not a record of history, it was productive and transformative of social relations as part of an apparatus that 'produced, trained and positioned a hierarchy of docile social subjects in the form required by the capitalist division of labour for the orderly conduct of social and economic life' (Tagg 1988, 63). Tagg's critique of photographic realism foregrounds two significant points: the historical and institutional composition of photography and the productive role of photography in everyday life. The question raised by Farocki's operational images is not how images came to take actions in the world, but which institutional investments are currently being made in photography and what visions of the world do they support. The task therefore is to connect changes in contemporary vernacular photography to the institutional and commercial imperatives that are invested in our photographic apparatus.

Several works have examined how different photographic practices are afforded by technological developments in networked and mobile media, with concepts such as 'ambient co-presence' (Okabe 2004), 'phatic communication' (Miller 2008) and 'ephemeral aesthetics' (Murray 2008) each drawing attention to the fluid and continuous nature of photography performed through smartphones and photo-sharing networks. These accounts suggest that

vernacular photography is moving closer to our lives, effacing the separation between the photographic image and the photographed subject. Imbricated as a part of daily routines and environments, photography is increasingly promoted not as a medium for faithfully recording the event from a distance, but valorised for the transformative and generative possibilities of mediation. These productive dimensions of photography are lauded as offering new possibilities of expression, communication and action. As one particularly striking example, the social media company Snapchat describes the ability of the camera to:

> Scan a math problem to get the answer, or a product to see results on Amazon. Scan your dog to give her goofy glasses, or a song to see who sings it. Scan the sky to see whales swim over the horizon or scan your hand to watch butterflies emerge as you open your palm.
>
> (Snapchat 2019)

This narrative of play, creativity and interactivity speaks to a wider emphasis on the generative and transformative potential of vernacular photography, seen in phenomena such as 'selfie-modification' and 'virtual makeover' apps (Elias and Gill 2018), the rise of Instagram filters (Gillies 2020) and the self-improvement discourse of social media influencers (Abidin 2016).

Sarah Pink and Larissa Hjorth's (2014, 2018) research has indicated some of the institutional and commercial desires that are invested in this playful vision of photography. Examining the ambient and ludic dimensions of our media habits, they show how mediation has come to blur the boundaries between play, leisure and labour, arguing that the debates around digital play and digital labour need to be brought into a 'productive conversation' in order to recognize the entangled nature of work and leisure that characterizes our

interactions with digital media (Pink and Hjorth 2018). Becoming ubiquitous throughout the environment, networked and mobile media constitute an affective atmosphere that facilitates novel modes of consumption and production (including modes of consumption *as* production and modes of production *as* consumption) by redefining the temporal and spatial dimensions of place (Pinks and Hjorth 2018). This media ecology is productive of modes of subjectivity that are amenable to the logics of late capitalism, as the 'entrepreneurial, self-optimizing subject' (Elias and Gill 2018, 60) is called to continually self-monitor their behaviours and desires as part of an ongoing project that extends beyond the workplace into the fissures of everyday life. Through sensorial and emotional labour, we produce mediated subjectivities that are defined through social and economic rationalities that emphasize perpetual growth and self-reinvention (Elias and Gill 2018).

It is not only the boundaries between life, leisure and labour that are blurred through the ubiquity of photographic media, but also the boundaries between our embodied selves and our mediated selves. Blanketing the environment in the glow of ubiquitous devices, mediation has become part of a continual renegotiation of subjectivity. Poetically responding to the affective and emotional dimensions of this entanglement, Agnieszka Zimolag writes:

> As I am part of this interconnected mega structure I become interwoven within its threads, unextractable. My mind has been accustomed to user interfaces as if it would be inhabiting them. I feel through the interfaces. I communicate through them. Their surfaces are surfaces of myself. The boundaries of myself become less and less obvious to me. Where do I exist?
>
> (Zimolag 2016, n.p.)

This passage evocatively articulates how the boundaries of subjectivity are perceptually and emotionally spread throughout networked environments, the distinction between the 'virtual' and the 'real' self, losing conceptual purchase as they are so thoroughly interwoven, experiences always co-extensive with their mediation and communication. Photography, as the case studies in this thesis will illustrate, plays a vital role in this blurring effect, operating as an interface between the protocols and operations of the network and the rhythms and routines of our daily lives. Photographic activity remains partially embedded in a discourse of representationalism, but has also become fully operative. As expanded on in the following section, these are not the aberrant outcomes of a run-away technological system, but the desired outcomes of institutional and commercial actors who produce and support this apparatus.

Photography and Value

As the cultural and technological landscape has been reconfigured around new industries and ideologies, the material and economic relations produced by photography has also changed. Whilst defining the economic model of Kodak during its infancy was perhaps a relatively simple operation, the concepts of productivity and value are much harder to grasp, as smartphones, social media and artificial intelligence become integral features of vernacular photography. The economic model of Kodak was relatively open, even if the strategies of marketing and product development they employed were complex and multi-layered (Slater 1995, West 2000). Put simply, the initial aim of Kodak was to sell photographic equipment and services to a broad base of consumers, who were encouraged to consume these on a regular basis. In this manner, photography became a mass-consumer commodity that operated in ways analogous to other commodities of the era. By contrast, the production of value in contemporary networked photography appears as far more nebulous and opaque: we do not

pay for viewing the image on the screen; there is no directly incurred cost for sharing an image on Facebook or Snapchat; and whilst the quality of the lens and sensor may incentivize a particular consumer choice, the hybridity of the smartphone makes it difficult to isolate the camera's true value. These changes should not be read as indicative of photography's removal from the dynamics of commodification and valorization. Instead, they signal the presence of new economic mechanisms at work in our photographic practices. It is these economic imperatives that this thesis will closely map; exploring the role of value, commodification and productivity in vernacular photography, particularly as these become harder to discern and isolate in everyday photographic practices.

In reading vernacular photography from the vantage point of commercial investments and institutional arrangements, the intention is not to diminish the importance of social and cultural experience, or to collapse the many divergent photographic communities into a singular meta-narrative of capitalism. Alongside those texts indicated above (Okabe 2004, Miller 2008, Murray 2008), there has been a wealth of research on our material interactions with images, including the collection of essays *Family Snaps: The Meaning of Domestic Photography* (Spence and Holland 1991), *Photographs Objects Histories* (Edwards and Hart 2004), and, more recently, *Digital Photography and Everyday Life* (Gomez Cruz and Lehmuskallio 2016). Each of these collections indicates the diversity of photographic practices enacted in a range of cultural and geographical contexts and speaks to the importance of paying close attention to our material encounters with images. Many of the texts included in these collections respond directly to the overdeterminism and reductionism of previous debates. Emphasizing the materiality and physicality of photography, Elizabeth Edwards (2004, 1) argues that we should not reduce photography 'to an abstract status as a commodity, nor to a set of meanings or ideologies that

take the image as their pretext.' Rather, we should conceptually break with the dominance of the image and look to the 'multitude of material forms and performances with which photographic images are entangled' (Edwards 2004, 1). Continuing this trajectory, Asko Lehmuskallio and Edgar Gomez Cruz (2016, 2) also argue for turning our focus away from 'images alone', and towards 'the complex entanglements they can be found in.' By moving away from an imagistic and representational reading of photography, both collections aim to expand the horizon of photographic theory to encompass an array of material practices and bodily performances involving the play of light, surfaces and markings. They demonstrate a move away from a reductive ontology and towards an engagement with the messiness of photography's collision with daily life. As Lehmuskallio and Gomez Cruz (2016, 8) argue, 'As editors we suggest that instead of working towards a single and unique understanding of what photography is, it is more helpful at this point to open up our understanding of how photography is being used and therefore to what photography might be without defining it beforehand.'

In seeking to avoid the reductionism of some of the previous photographic debates, these works have found it advantageous to use approaches from ethnography and visual anthropology to grasp how different meanings are generated through and with photography in everyday life. However, this focus on the ethnographic has also tended to elide the broader structural tendencies and institutional constraints of vernacular photography. In emphasizing the agency and intentionality of photographic practitioners and communities, the role of commercial institutions in providing the means of our photographies has sometimes been overlooked. The meaning of photography may not be determined by the ideological imperatives of their producers and the economic systems they are embedded within, but these factors must certainly be

accounted for if we are to gain a better understanding of what is at stake in vernacular photography.

The exhibition *All I Know Is What's On The Internet* (2018-19), curated by Katrina Sluis, provides a notable example of researchers and artists engaging with the material and economic dimensions of vernacular photography, whilst also reckoning with the messiness of its collision with daily life. Through a range of artworks, including *Dark Content* (2015) by Eva and Franco Mattes, *ScanOps* (2012-ongoing) by Andrew Norman Wilson and *Five Years of Captured Captchas* (2017) by Sebastian Schmieg and Sylvio Lorusso, this exhibition probed the hidden labour, physical infrastructures and commercial practices that support the contemporary image economy. Challenging the idea of networked photography as immaterial, endless and open, *All I Know…* drew attention 'to the neglected corners of image production, making visible the vast infrastructure of digital platforms and human labour required to support the endless churn of selfies, cat pics and memes' (The Photographers' Gallery 2018). In prizing open the smooth interfaces of digital media, it began to account for the numerous 'circuits of labour' that connect mediation to global systems of production and commodification (Qiu et al. 2014). It is worth briefly expanding on two of the exhibited artworks to highlight how these considerations both complicate and expand the picture of vernacular photography.

Eva and Franco Mattes' video installation, *Dark Content* (2015), provides a glimpse beneath the surface of network culture by exploring the anonymous and precarious labour of social media content moderators (Figure 1). These outsourced workers, often based in developing countries such as the Philippines, perform the work that many of us take to be the domain of intelligent algorithms, scrubbing our news and image feeds clean of 'offensive

material'. Having conducted interviews with these labourers, Mattes presents the testimony of these content moderators through stock avatars and text to voice software. The jarring disconnect between the testimony of the workers and their virtual avatars produces an uncanny outcome that reflects the distance between the projection of technological immateriality by corporations and the reality of hidden labour working to increase consumer satisfaction and shareholder value. Content moderators must face a continuous barrage of material that has been flagged as 'inappropriate' for our eyes, ensuring that we never encounter explicit, violent or disturbing content in our feeds.

Outside of the extremities of 'dick pics and beheadings', the labour of content moderation is subject to changes in corporate policy, legal guidelines and news events, with politically contentious images erased en masse at urgent notice (Chen 2014). Policing the boundaries of visuality also means producing these boundaries, constituting the limits of visual propriety in accordance with corporate guidelines and political pressure. In Molly Soda and Arvida Byström's (2017) *Pics or it Didn't Happen*, these boundaries are laid bare by displaying those images that have crossed the threshold of acceptability. A photobook of images removed from Instagram for being 'in violation of community standards', *Pics or it Didn't Happen* illustrates how the corporate conservatism of social media polices different bodies differently, creating gendered and racialized boundaries of visibility. *Dark Content* and *Pics or it Didn't Happen* both speak to the elisions that are performed in the production of a social media that presents itself as transparent, immaterial and universal. We are confronted with global divisions in the value of attention, whereby the labour of confronting content deemed distressing or unacceptable is set against the value of maintaining a purified image feed that better appeals to the mores of advertisers and consumers, and where the labour of moderation itself must also be erased to maintain the illusion of a bright technological future.

Figure 1. Eva and Franco Mattes, 'Dark Content', 2015.

Sebastian Schmieg and Sylvio Lorusso's *Five Years of Captured Captchas* (2017) speaks to a different form of visual labour that is generative of value. As Schmieg and Lorusso explain, they captured a screenshot of every CAPTCHA they were asked to complete over five years as a reflection on the labour they were performing whilst carrying out routine tasks.[5] These CAPTCHAs were then ordered and displayed in 'five leporello books that span a total length of 90 meters' (Schmieg and Lorusso 2017). Spread across these five streams, an evolutionary typology of visual-technical artefacts emerges that highlights the increasing complexity of the task at hand, as two wavy and misaligned words

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[5] CAPTCHA is an acronym for 'Completely Automated Public Turing test to tell Computers and Humans Apart'. At its simplest, a CAPTCHA is a small problem-solving task where a visually distorted word must be recognized and entered in order to access some form of content on the web. Their ability to differentiate between humans and computers is founded on the basis that the task is relatively trivial for humans, but relatively difficult for a computer (von Ahn et al. 2003).

slowly morph into grids of grainy images of traffic lights, trucks and crossings. Initially deployed as a means of preventing automated attacks on websites, the micro-task of solving CAPTCHAs has more recently been used by Google as part of the process of digitizing books and teaching AI software. In this way, CAPTCHAs are not only part of internet security protocols, but are also part of a distributed labour process; we produce knowledge from the act of looking that becomes a part of Google's vast technological offering. The rising complexity of the task is fuelled by developments in AI, our labour having to respond to pattern recognition techniques of precisely the sort these micro-tasks are training Google to perform. However, the evolution of the CAPTCHA is not only a response to the arms race between hackers and Google. It is also a mode of distributed labour that is redirected into producing new forms of knowledge and value. Schmieg and Lorusso concluded their project with an email to Google detailing their labour in measures both critical and playful:

> We were never asked to join your workforce. Nonetheless, we proudly accepted the task to contribute our cognitive resources to help Google achieve its goals. Today after five years we have collected 471 CAPTCHAs already.

> Now, we are writing to present our quinquennial report which includes all the CAPTCHAs collected until now. We would be very happy to celebrate our fruitful collaboration, perhaps in your offices in Brussels or any other location you consider appropriate.

> (Schmieg and Lorusso 2017)

This concluding letter wryly speaks to the unknowing work we perform through these micro-tasks and the subtly shifting material relations that

underpin our engagement with ubiquitous networked media.[6] The CAPTCHA acts as a visual emblem of the new forms of value and productivity that are often rendered opaque in digital media, and our own 'collaborative' role in reproducing these. By recontextualizing these ephemeral artefacts, extracting them from their usual habitat and function as gatekeepers, Schmieg and Lorusso challenge the ability of these operations to go unnoticed.

Through these artworks we can see how addressing the relationship between digital media, circuits of labour and the production of value, complicates and deepens our understanding of the functions that networked images perform in the world. With these interventions, as well as other exhibited works (such as Constant Dullaart's 2017 *PVA Formations* and Stephanie Kneissl and Maximilian Lackner's 2017 *Stop The Algorithm*) the ambient and ephemeral nature of contemporary vernacular photography is read not simply through a lens of increasing affordances, but as part of global commodity chains, outsourced labour pools and algorithmic operations. Investigating the economic and ideological imperatives of vernacular photography, and recognizing its involvement in specific modes of production and commodification, does not a priori equate with an abstracted or reductive vision of vernacular photography. Indeed, these economic forces should be viewed as complicating factors to our understanding of photographic practices. Rather than reducing photography to an 'abstract status as a commodity' (Edwards 2004, 1), reckoning with the strategies and desires of corporations must be an integral aspect of any analysis of photographic practices that utilize such technologies. The choice is not between a reductive ontology of photography that accounts for its relationship with late capitalism on the one

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[6] In a reversal of the CAPTCHA's logic, the low cost of global labour and cheap access to the internet has created a burgeoning industry of CAPTCHA solving, where armies of labourers work at solving tasks in bulk for as little as $1 per 1000 solutions (Motoyama et al. 2010).

hand and a performative and materialist reading of photography that fails to do so on the other. To understand what is at stake in vernacular photography, the intersections at which the processes of production and commodification collide with our photographic practices and desires must be traced.

The economic relations that underpin our photographic activity have undergone significant changes over the previous decades. Reconfigured around smartphones, social media and artificial intelligence, the commercial institutions of vernacular photography are now more likely to be found in Silicon Valley than Rochester, as the information technology sector has become the dominant industry shaping photography's place in the world.[7] This shift in the economic centre of gravity, in which Apple, Facebook and Instagram have become the defining corporations of vernacular photography for significant parts of the world, is indicative of the new forms of value that are produced through everyday acts of photographic mediation. As the cost of capturing, sharing and viewing images reaches near-zero, the relationship between production and commodification that sustained Kodak through its early phases is no longer viable. With the smartphone operating as producer, processor and distributor (Cruz and Meyer 2012), the value congealed in the image no longer includes the labour time associated with the printed image (i.e. film production, processing and development). However, what remains is the perceptual and affective labour that we invest in each image; our behaviours, beliefs and desires channelled through photography and encrusted into the photographic image.

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[7] In 2015, Apple reported sales of over 230 million iPhones (Holst 2016). By contrast CIPA, which compiles sales of digital cameras from major manufacturers such as Canon, Nikon & Fuji, reported that in 2015 total digital camera sales stood at just over 35 million, down from 121 million in 2010 (CIPA 2016).

Whereas value was previously sought in the production of cameras, ephemera and services to be consumed, vernacular photography is increasingly connected to extended systems of production that generate value through the circulation of images and the accumulation of data. Connected to the hybrid assemblages of networked and mobile media, photographic mediation has become a vital part of the process of relaying and remapping our desires into the logic of networked capitalism (Beller 2006). As we engage in the production of individualized and made-to-measure spectacles, desires are crystallized and objectified as they pass into the network; subjective experiences and perceptions reified into quantifiable forms from which value can be extracted. Remediating and refracting our lives through photography, we perform vital work, constituting a new vernacular that is framed through the ideological apparatus of particular industries. In this way, photographic mediation must be thought of not only as an act of consumption, but also as a mode of production.

Photographic Mediation

In placing vernacular photography alongside a broadly Marxian conceptual framework, the intention is not to reduce one field into the other, arguing, for instance, that all photographic practices should be understood through a fixed schema of commercial interests and the exploitation of labour. Instead, the argument being made is that there exists a productive tension between these fields that can transform our understanding of both photography and contemporary capitalism. John Tagg's *Burden of Representation* (1988) discussed above, offers an insightful account of the historical and political valences of photography, acting as a vital corrective to formalist and realist narratives that posit an ontologically secure definition of photography. However, Tagg's structuralist account also tends to obscure the agency of photography behind a

dense fabric of external competing ideological narratives. The meaning of photography is always shaped to an extent by the ideological imperatives of commercial and governmental institutions. These discourses are not, however, external forces acting upon photography, but are always already entangled in a process of mediation of which photography is a vital actor.

As Nick Couldry (2008) describes, the concept of mediation has operated in multiple research fields that predate its usage in media studies (economics, philosophy, psychology and sociology to name but a few). At its simplest, the concept of mediation describes a connecting force; an intermediary between two or more entities that enables the circulation of ideas, emotions, bodies and objects. In economics, for example, we might think of money as a mediating entity that facilitates the circulation of commodities (Simmel 1978). As another example, we might think of facial expressions and body postures as mediating our emotions, enabling their communication between subjects. Yet beyond this model of transmission lies a more dynamic and transformative reading, for the process of mediation causes significant and reciprocal changes to the objects or institutions it is mediating between:

> […] any process of mediation […] of an area of culture or social life is always at least two-way: 'media' work, and must work, not merely by transmitting discrete textual units for discrete moments of reception, but through a process of environmental transformation which in turn transforms the conditions under which any future media can be produced and understood. 'Mediation' in other words is a nonlinear process.
>
> (Couldry 2008, 341)

For Couldry, mediation is inseparable from those entities it mediates between. In transforming the relationship between objects, mediation simultaneously

transforms the nature of these objects themselves. In other words, mediation is not a separable communicative layer that can be extracted from society but forms an integral role in (re)producing social and cultural life (Couldry 2008, 341). In *Life After New Media,* Kember and Zylinska (2012) argue that Couldry's account remains overly static, with mediation operating as a process (nonlinear or otherwise) performed by an already reified media and within a defined humanist schema. Instead, Kember and Zylinska (2012, 21) postulate mediation as a fundamental process of life from which stable media forms emerge as 'temporary "fixings"'. Mediation is therefore not a movement between predefined entities, but is the very process of constituting the boundaries of objects and subjects. Drawing on the Bergsonian concept of *becoming*, Kember and Zylinska aim to connect mediation to its underlying temporality and 'lifeness', to its biological and technological dimensions, and to its role in producing boundaries:

> Mediation does not serve as a translational or transparent layer or intermediary between existing entities […]. It is a complex and hybrid process that is simultaneously economic, social, cultural, psychological, and technical. Mediation, we suggest, is all-encompassing and indivisible.
>
> (Kember and Zylinska 2012, xv)

Critically interrogating the separation between life and its mediation, Kember and Zylinska (2012, 18) argue that 'mediation is a vital process' that is productive and co-constitutive of events and phenomena. As 'we have always been mediated' (Kember and Zylinska 2012, 18), mediation precedes reification into media objects and institutions. This dynamic and processual account of mediation does not elide the structural and commercial dimensions of the media, but neither does it reduce mediation to the role of a transparent intermediary between external phenomena. Instead, this conceptual apparatus

recognizes the agential force of mediation that is always already entangled in the production of cultural, governmental and commercial structures, providing a framework for thinking through the interrelationships between commercial institutions and vernacular photography. Rather than emerging as a secondary phenomenon, photographic mediation is framed as a foundational and productive force that plays a significant role in defining objects, subjects and institutions. The dynamic and processual nature of mediation does not, however, preclude it from becoming stratified, hierarchical and solidified. Because of its vital and productive role, there is significant political and commercial value in controlling and shaping the flow of mediation.

Photographic mediation is subject to a nexus of pressures that attempt to stabilize it into reified forms and clearly defined pathways. These forms can be technological and structural in kind, such as those exemplified by the strategies of Kodak, in which 'complex technical possibilities are reduced to conventionalized options' (Slater 1991, 52). However, stabilizations can also occur in the particular meanings and epistemologies that photographic mediation produces. Geoffrey Batchen (1997) argues that the history of photography should not be read through the lens of singular technological innovations, but through the desire for orchestrating particular epistemological arrangements: between subject and object; nature and culture; observer and observed; and modernism and romanticism. According to Batchen (1997, 127), the search for an originary object of photography is illusory, for 'wherever we look for photography's bottom line, we face this strange economy of deferral, an origin always preceded by another, more original, but never-quite-present photographic instance.' This illusory quality to photography's origins emerges from the way that the broadly held set of cultural desires for photographic mediation predates the manifestation of these desires within the camera. The stabilization of mediation into a force that produces particular subject-object

relations is not tied to a specific photographic apparatus, but to a more deeply rooted imperative to constitute the world in a particular way. Examining the discourses that encircled the beginnings of photography, Batchen argues that these imperatives are located in the turbulent debates concerning knowledge, subjectivity and representation at the turn of the nineteenth century and the nascent beginnings of the enlightenment view being deconstructed.

Via this conception of photography, Batchen is able to stretch its genealogy, suturing the ruptures between both its proto-histories and its digital and networked futures with analogous epistemological desires. And yet, might Batchen's delineation of photography still be overly restrictive? Are the epistemological arrangements that Batchen describes the defining feature of photography, or might we read them instead as 'temporary fixings' of a photography that stretches beyond these boundaries? For Batchen, photography will end once the arrangements of knowledge and desire that shape its meanings cease to exist. It is not the arrival of digital photography per se that marks the death of photography, but the potential of other technologies and discourses to undermine its epistemological underpinning, with cloning, genetic engineering and artificial intelligence cited as potential areas of contestation. Batchen suggests that each of these fields pose a challenge to the epistemological basis of photography and to the 'presumed distinction between nature and culture, human and nonhuman, real and representation, truth and falsehood', upon which photographic discourse depends (Batchen 1997, 214). However, returning to the concept of mediation outlined above, might Batchen be eliding the role of photography in both producing and contesting these distinctions? Even if these categories predate the conception of photography, categories are not created once and for all, but must be continually reproduced and re-enacted in daily life to hold meaning. If mediation is the vital and nonlinear process articulated by Kember and

Zylinska (2012), the collapsing of boundaries between these dichotomic categories (e.g. nature/culture) may speak as much to new meanings and productivities of photography, as it does to photography's impending demise. Particularly within the domain of artificial intelligence, we can see new hybrid forms of knowledge emerging that both challenge and refashion photography, without necessarily signalling its end (as discussed in Chapter 4).

John Tagg (1988) emphasizes the political and institutional co-ordinates of photography that have been previously overlooked by the ontological search for photography's essence. But in doing so, the agential significance of photography - the features that make it such a valuable resource to various institutions - is obscured behind a tissue of competing discourses. In framing photographic mediation as a productive force with a significant role in structuring the world, this thesis contends that photography is not merely the by-product of these external institutions. Photography may have been instrumentalized by commercial and governmental actors, but as a 'dynamic essence' that 'is always of becoming, of bringing forth and creation' (Kember and Zylinska 2012, 22), it has also reciprocally shaped these fields. Connecting the temporal and dynamic nature of mediation to the political and economic dimensions of vernacular photography, this thesis argues that we need to think about photography as something that is not only consumed, but also as something that is produced, and that has productive effects. Rather than place photography (and other media) into a separate ontological sphere of representation, we need to understand the photographic as an integral part of how we construct the world around us; as an entangled part of the material, cultural, biological and economic world (Kember and Zylinska 2012).

It is important to recognize that the concept of mediation is also used to articulate several different relations at play under capitalism within Marxist

theory. Whilst overlapping with the field of media studies, there are notable differences in how the concept of mediation is employed in Marxist critical analysis. Similar to the above discussion, there is a simple version of mediation in which the money form is framed as the mediating force of capitalism. Enabling the circulation of commodities, the money form provides a mechanism for the exchange of objects possessing divergent use values and qualities. In this way, the money form mediates between commodities, consumers and producers. However, for Marx (1976) the money form is only an extension of the commodity form, which already contains the means of its circulation, dialectically possessing both use value and exchange value. It is within the dialectical nature of the commodity that mediation becomes more central to Marxist thought. The commodity possesses exchange value through crystallizing within itself the quantity of labour expended in its production. By standing in for the workers labour, the commodity thereby comes to mediate social relations; labour is congealed in the commodity which progressively acquires the value of that labour. As Richard Gunn (1987) explains, the conceptual field of mediation for Marx refers not only to the relation between two terms by a third (e.g. the money form facilitating an exchange between two parties) but also to the mediation of one term to itself. Here, we might consider the commodity as a mediation between two dialectical aspects of the self-same object - its use value and exchange value. For Marx, drawing on Hegelian dialectics, mediation not only concerns the relations *between* objects, but also of the internal relations *within* objects. The capitalist system of production can therefore be understood as a series of mediations both between and within objects and subjects, which through these processes acquire forms of being that characterize the political economy of capitalism.

By asking what happens to mediation at the end of capitalism, we can discern a further conceptual distinction in the Marxist use of the term. In the political

imaginary of some theorists, the end of capitalism is at least in part synonymous with the end of mediation. As Moishe Postone (1993) argues, certain interpretations of Marx read the mediated character of social relations as part of a capitalist structure to be overcome and replaced by unmediated social relations. From this standpoint, it is the mediated character of society that Marx critiques via the conceptual framework of wage labour and the commodity form. It is not, however, mediation per se that forms the crux of Marx's critique, but the type of mediation that emerges with the growth of industrial capitalism; the objectified and ossified social relations that operate quasi-independently of the collective, creating disempowered and alienated subjects. As Postone (1993, 48) argues, 'Marx's critique is of the nature of social mediation in capitalism, not of the mere circumstance that social relations are mediated. Social interdependence is always mediated (nonmediated interdependence is a contradiction in terms).' This interpretation is particularly relevant for this thesis, as it enables the positing of mediation as a formative and productive part of social and cultural relations, rather than a separable barrier that is to be removed.

There is not the space here to fully investigate the conceptual field of mediation and its variations within Marxism. This brief discussion aims only to highlight the significance of mediation to Marxist critical theory. Work in the field of media and cultural studies offers significant challenges to this schema of mediation. For example, the approach taken by Kember and Zylinska (2012) provides a far more dynamic and vitalist reading of mediation than is frequently offered in the canon of traditional western Marxist thought. Whereas mediation has often remained within the realm of epistemology and phenomenology, indicated by concepts such as alienation and false consciousness, contemporary cultural theory suggests a more foundational role for mediation as a generative and productive part of biological, political and

cultural processes (Kember and Zylinska 2012, Blackman 2012). This productive energy of mediation is evocatively captured by Hito Steyerl, who in reference to a moment when protestors invaded a TV studio during the 1989 Romanian uprising, writes:

> Since then it has become clear that images are not objective or subjective renditions of a pre-existing condition, or merely treacherous appearances. They are rather nodes of energy and matter that migrate across different supports, shaping and affecting people, landscapes, politics and social systems. They acquired an uncanny ability to proliferate, transform and activate.
>
> (Steyerl 2017, 144)

For Steyerl, the representational epistemology of media no longer holds, as images spill out of their frames and into the surroundings, transforming the landscape around them. This moment in 1989 marks for Steyerl a realization that the force of mediation is not limited to the proliferation of images and concepts that inculcate subjects in a particular ideological worldview. As production has 'become mixed up with circulation to the point of them being indistinguishable' (Steyerl 2017, 149), media and the processes of mediation likewise become inseparable from and integral to productive processes in the world. Marxism provides some of the foundational concepts that underpin this thesis, but rather than being restricted by the conceptual field that Marx defines, it is hoped that a productive relationship can be found between these concepts and contemporary media theory. Moving through Marx – yet without being confined by the field he defines – provides the possibility of a deeper analysis of how value is generated through photography, and affords the proposition, as per the title of this thesis, that photographic mediation may be considered a mode of production.

Flickering across the Institutions

A central aim of this research project is to examine the relationship between contemporary vernacular photography and capitalism. By analyzing the role of three commercial institutions in producing vernacular photography - Kodak, Snapchat and Ditto Labs – the aim is to gain a better understanding of how economic imperatives are implicated in photographic practices. These case studies have been chosen as they each reflect a particular aspect of vernacular photography's imbrication with the imperatives of capitalism and are emblematic of different modes of productivity that photographic mediation has been engaged in. For each of these case studies, a close analysis will be conducted of the material apparatus each company has produced, alongside an examination of the discourse they have generated through advertisements, manuals, blog posts and conference talks. This approach is reflective of an understanding that media technologies are always articulated in both material and discursive terms; as hybrid socio-technical configurations that draw together cultural, economic and technological threads in the process of producing stable media objects and processes (Law 1992).

Emerging at different moments in the history of vernacular photography, the apparatuses that these companies have produced form part of a larger photographic genealogy characterized by both continuities and ruptures. These apparatuses do not appear in a vacuum but are dependent upon the technological and cultural landscape from which they emerge and to which they must respond: 'media are not external agents that come to disrupt an unsuspecting culture. They emerge from within cultural contexts, and they refashion other media, which are embedded in the same or similar contexts' (Bolter and Grusin 1999, 17). The genealogical concept of *remediation*, developed by Jay Bolter and Richard Grusin, is useful for avoiding the pitfall

of perceiving technological change as a recurrent sweeping away of the past in order to move towards some predetermined end state. Remediation forces us to reckon with a 'network of formal, material, and social practices' (Bolter and Grusin 1999, 67) which oscillate between various strategies of producing reality effects.

However, whereas Bolter and Grusin (1999) see the guiding principle of remediation as immediacy – each medium attempting to ultimately erase itself in the act of mediation – this thesis looks instead to the concept of productivity as an axiom of remediation. In collapsing the question of remediation onto the plane of immediacy and hypermediacy, Bolter and Grusin (1999) elide significant aspects of the political economy of media that are a crucial part of reckoning with vernacular photography. Avoiding this elision, this thesis combines the concept of remediation with the Deleuzian concept of deterritorialization; the process of decoding socio-technical structures to free up new relations and therefore enable more creative and productive configurations. Beyond the production of different reality effects, the history of vernacular photography (and the media more generally) is characterized by the creative-destructive process of removing limits to the territories of mediation, whilst maintaining control over these processes. The question of remediation is therefore not only: 'How does one medium challenge or refashion other media?', but also 'How does this medium expand and extend the territory of mediation into our everyday lives?' Remediation is therefore framed in this thesis as a process whereby each medium builds on the productive potential of its predecessor, whilst simultaneously disrupting and reconfiguring this to unlock different productive potentials of mediation.

In attempting to locate the role of vernacular photography within the mechanisms of contemporary capitalism, there is a Marxist leaning to the

analysis presented here. However, rather than being constrained by dogmatically applying a Marxist political schema of wage labour, exchange value and surplus value to the contemporary landscape of vernacular photography, these concepts are used as a point of departure for the analysis being undertaken. It is important to recognize the continuing value of a Marxist methodology in analyzing material economic relations, but it is equally important not to simply reproduce a Marxist lexicon without accounting for the material conditions under consideration. Examining key case studies has opened the door to different ways of thinking about vernacular photography, which in turn has led to the application of different theoretical lenses. As the limitations of these lenses has become apparent, theoretical approaches have been extended and combined, leading to what is hopefully a productive framework for theorizing contemporary vernacular photography. As signalled above, the concept of productivity has proven fruitful in reading the sites of vernacular photography under consideration in this thesis. However, this does not a priori extend to framing photography as wage labour, an attribution that risks both underplaying the critical potential of photography and eliding the specific ways photography has been instrumentalized by capitalism.

The methodology employed in this research project has entailed iteratively revising the theoretical framework in response to findings from the case studies under analysis. Rather than begin with a set of theoretical assumptions which are then tested against a number of examples, the conceptual framework has been developed by examining how the meaning and matter of photography is refracted through various photographic assemblages. There is considerable divergence in the material, temporal and social dimensions of these apparatuses, with different forms of photography producing a wide range of meanings and outcomes in the world. It is incumbent upon us as researchers to attend to these material variations, particularly as they challenge and subvert

our expectations of photography (Di Bello 2008). For each of the case studies, a material analysis is performed on the technical structure of the photographic apparatus, alongside a discursive analysis of the promotional material that has been produced and circulated by these commercial institutions. Exploring the vision of vernacular photography that these companies hold, these case studies detail how they reconfigure and remediate photography, the functions they envisage photography providing for the consumer, and the different strategies of commodification they deploy. By reciprocally moving between theory and case study, the discursive methodology of this thesis is designed to provide openings to rethink photographic theory in response to the findings of these analyses. Instead of seeking a set of formal or ontological characteristics that might delineate the boundaries of photography, this methodology provides the latitude to follow vernacular photography as it enters different networks and makes connections with technologies and discourses exterior to its own history.

The methodology of this inquiry is therefore shaped by a dual movement of *grounding* and *opening*, whereby focusing on specific processes, structures and materialities enables new questions to be asked about the meaning and function of vernacular photography. This dual movement of grounding and opening is also reflected in the central concepts that drive this analysis: photographic mediation and productivity. Grounding, as both concepts ask us to pay close and careful attention to the matter of photography: to trace how photographic practices connect to broader circuits of labour, desire and meaning-making; to examine how the photographic apparatus changes under competing commercial and institutional investments; and to analyze how photography not only represents but (re)produces the everyday. Opening, as these concepts have also provided an opportunity to think about photography in new ways by suspending particular presuppositions. The concept of photographic mediation challenges the identification of photography with

stasis, emphasizing a more nuanced interplay between duration, temporality and stratification, which is twisted and attenuated in competing models of vernacular photography, liable to shift in different directions as new demands are placed upon it (Kember & Zylinska 2012). With productivity, whilst the dynamism of capitalism may sweep us along in one direction, multiple avenues are kept open in potentia. Our engagement with photography can also be productive of new ways of inter- (or intra-) acting with the world, creating systems of countervisuality that challenge authority, or mediated subjectivities whose desires are incommensurate with capitalism. By being grounded and engaged with the matter of photography, whilst also being open to the potential conflicts and possibilities that a shifting and deterritorializing photography produces, we position ourselves in a stance able to address the always moving target of vernacular photography.

There is always a performative aspect to conducting research, with earlier ideas iteratively submerged beneath later revelations, presenting a more confident and coherent theoretical outlook from the outset than experienced in actuality by the researcher. Whereas a Marxian materialist analysis predominated early conceptualizations about the relationship between vernacular photography and capitalism, the dynamics of networked and mobile media have prompted closer attention to be paid to the processual dynamics of photography and the biopolitical implications of these apparatuses. What is particularly significant about the approach taken in this thesis, is how expanding the theoretical framework to account for contemporary phenomena has also provided new ways of thinking about the history of vernacular photography. In the course of examining the case studies of Snapchat and Ditto, it became clear that the concrete commodities of vernacular photography had been destabilized in the flows of networked media and platform politics. Rather than indicate an absence of commercial imperatives from the terrain of vernacular photography,

analysis of these institutions highlighted how photographic mediation was being instrumentalized as a means of aligning subjectivity with the demands of contemporary capitalism. However, the processual and biopolitical dynamics of vernacular photography were not only relevant to the territory of networked media, but as the chapter concerning Kodak demonstrates, provide significant insights into the processual and productive nature of earlier photographic practices. The reflexive and discursive methodology that has been employed in this thesis has therefore entailed not only moving reciprocally between theory and case study, but also across the genealogy of photography, enabling the findings from one case study to be applied to the others. As such, whilst there is a broadly linear historical narrative to this thesis, the research process has involved tracing affinities both forwards and backwards in order to recognize the different ways photographic mediation has been instrumentalized as a mode of production.

The first of the case studies will explore how Kodak popularized vernacular photography in western culture by making it an integral element in the (re)production of family life. Through a programme of technical simplification, and the creation of divisions of labour in the photographic process (Sarvas and Frohlich 2011), Kodak constructed a vision of photography in the early twentieth century that was intimately connected to modes of mass production, in which cameras, film and our own images were transformed into mass-produced commodities. The commodification of experiences through their mass production has had profound effects on our relationship to photography, as desires and affects came to be reified within the image, connected to and yet separated from ourselves as so many self-contained spectacular objects (Di Bello 2008). Whilst Kodak has receded from commercial dominance, aspects of its shadow loom large over contemporary practices, as we continue to negotiate lived experiences with idealized visions of the self and the family (Holland

1991). There have, however, been significant disruptions to the business model advanced by Kodak, as the cultural, technological and economic climate shifted under its feet.

Examining these disruptions, the second case study addresses the question of how photography's remediation through networked and mobile media has changed the commercial imperatives invested in the photographic apparatus. As the cost of producing and distributing images has been dramatically reduced to near zero (Cruz and Meyer 2012), the number of images being created and shared has risen at a staggering rate. Beyond this sheer volume of images lies a deeper change in the consistency of photographic mediation. A more fluid and unstable photography has emerged that is enmeshed more tightly with the production of identity and subjectivity. Through an analysis of the Snapchat platform, this chapter examines how destabilizing the structures of vernacular photography has enabled capitalism to move deeper into the flows of photographic mediation. The 'disappearing image' of Snapchat refashions the meaning of photographic communication, redirecting mediation towards presence and the present, responding to the transitory and ephemeral desires of the contemporary subject (Okabe 2004; Murray 2008). In doing so, Snapchat cultivates the production of mediated subjectivities that align with the imperatives of late capitalism, enabling the production of fluid subjects that can respond to the continuous competing claims of a saturated commodity culture (Deleuze 1992; Beller 2006).

The remediation of vernacular photography through networked and mobile media remains central to the subject of the third case study, as the focus switches to the productive role of semi-autonomous artificial agents in photographic processes. As the technologies of machine learning and artificial intelligence (AI) are embedded in social media and photo-sharing platforms,

the context (metadata) and content (data) of our images are increasingly mined for information about patterns of behaviour and consumption. The case study of Ditto Labs offers one example of how images are shared not only with other users in the network, but with hidden algorithms that identify features such as faces, emotions, brands and locations within the image (Ditto 2016a). This analysis indicates that beyond generating a significant amount of data about our desires and behaviours, the technologies of AI play a significant role in reimagining photographs as 'actionable images' (Rose 2015) and photographic networks as interfaces between people, brands and corporations (Gomez Cruz 2016). Drawing on Sarah Kember's (2014) analysis of face recognition technology, alongside Edgar Gomez Cruz's (2016) concept of the 'imageless interface', pattern recognition technologies can be understood as offering the potential for new productivities of vernacular photography, generating value through cutting the photograph into multiple semantic objects that operate outside the visual flow of images.

Throughout these case studies, the broader argument is made that photography is continually deterritorialized and reterritorialized in the process of making it more productive; that to generate greater value, the codes that structure photography must be destabilized to make way for more fluid and dynamic modes of photographic mediation. However, as theorized in the final chapter, these transformations to the meaning and matter of photography also point towards more radical modes of production beyond governmental or commercial imperatives. In engaging critically with the dominant logics of our apparatus (Flusser 2000) and by reckoning with the generative and vital properties of mediation (Kember and Zylinska 2012), there emerges the possibility of making vernacular photography productive of something other than capital. Reflecting on several practitioners engaged critically with the question of vernacular photography, both historically and contemporaneously

(Jo Spence, John Stezaker and Bonamy Devas), this chapter considers how we might reimagine photographic mediation as a way of subverting and detourning current modes of instrumentalization and commodification.

This dissertation focuses primarily on the role of commercial actors in shaping vernacular photography. However, as the final chapter argues, there is also reason to remain optimistic for the potential of deterritorializing vernacular photography in ways that are antagonistic to capitalism or conducive to alternative political projects. For example, insurgent approaches to photography are explored by Mieke Bleyen (2012) under the concept of 'minor photography', an adaption of Deleuze and Guattari's (1986) 'minor literature' developed in relation to the work of Franz Kafka. According to Bleyen (2012, xi), minor photography works by 'bringing [photography] towards its borders, and along the way deterritorializing the dominant codes of representation by operating directly in society, instead of merely representing it.' In the edited collection of essays gathered under this banner, the majority of authors are concerned with artworks and artists moving from the centre of the art institution towards its peripheries. However, the relationship between institutions and photographers looks very different in the field of vernacular photography, where the dynamics between the centre and the periphery are far less apparent. A radical reshaping of vernacular photography must reckon with the inveiglement of commercial imperatives that are distributed throughout our devices, platforms and networks. Mapping the strategies through which the agency of photography has been instrumentalized serves as a useful place to begin the process of conceiving how our photographic apparatus may be radically deterritorialized. In this regard, tracing the process by which the agency of photography is co-opted by capitalism does not have to be a fatalistic exercise, for it furnishes us with the necessary theoretical tools

for challenging and subverting the productive potential of photographic mediation.

Literature Review: From Commodification to Mediation

In recent years there has been a revival of interest by media studies scholars in the historical materialist analysis offered by Marxist critical theory. Following the 2008 global economic crisis and the resulting fissures in the hegemonic capitalist order, Marxist modes of analysis have found renewed significance, as crises, conflicts and class politics have come to the forefront of our attention with renewed force (Fuchs 2014). The conceptual territory of historical materialism, dialectics and commodification has found currency in addressing contemporary facets of the dominant political and economic system (e.g. forms of precarious labour entering the labour market; a reliance on outsourced labour to the global south; and environmental crises driven by resource extraction in neo-colonialist relationships). Perhaps most significantly, these phenomena were not framed by Marx as aberrations to the functioning of capitalism, but as necessary structural features of a system driven by the accumulation of capital and the perpetual need to increase rates of profit (Fuchs 2014, 13). This is not to suggest that Marxism had disappeared from the field of media and communication studies, an overstatement that can swiftly be countered by numerous texts predating the economic crash of 2008.[8] However, as Christian Fuchs (2014) argues, whereas the influence of Marx had been waning at the close of the twentieth century, the antagonisms of contemporary capitalism have recentred our attention on the economic and material vectors of the media.

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[8] For example, the edited collection *Marxism and Communication Studies* (Artz et al. 2006), as well as works by Mike Wayne (2003), Matthew Fuller (2005), Jodi Dean (2005), and Jonathan Beller (2006), which all emphasize a Marxian analysis and are all published in the years immediately prior the global financial crisis of 2008.

This renewed attention in Marx's ideas has also coincided with the rapid expansion and reconfiguration of networked and mobile media following the bursting of the dotcom bubble at the turn of the 21st century, which has also generated significant questions concerning the political economy of the contemporary media ecology (Crary 2013; Dean 2005; Fuller 2005; Lovink 2012 Zuboff 2019, Seymour 2019). It is outside the scope of this review to provide a full treatment of this field, given the breadth and depth of this research area. However, it is worth addressing a number of key arguments that are directly salient to this research project. Many researchers have argued that the premise of a decentralized, open and 'rhizomatic' internet, both materially and ideologically, has been progressively eroded as a small handful of companies have come to predominate our participation and engagement with the media (Hay and Couldry 2011; Lovink 2012; Hands 2013; Fuchs 2014). The rise of what has been termed from adjacent theoretical perspectives 'communicative capitalism' (Dean 2005), 'platform capitalism' (Srnicek 2016) and 'surveillance capitalism' (Couldry 2016; Zuboff 2019), has funnelled the vast majority of online activity into a small number of 'walled gardens' in which interactions between users take place in 'enclosed, commercialized and managed realms' (Hands 2013, 1). Questions of value, labour and productivity have therefore become essential to how we understand the digital media ecology, particularly as these material relations are frequently obscured in a media landscape that projects a vision of immateriality and automation (Meikle 2016).

The role of value and labour in relation to these economic actors has been addressed broadly from two interrelated perspectives. The first of these is a focus on the materials, minerals and labour markets that comprise the necessary resources for producing and maintaining networked activity. In contrast to the projection of limitlessness and ethereality by the technoscience industries, researchers have sought to emphasize the stubborn materiality of

those global supply chains and labour markets on which networked devices and infrastructures depend. From the extraction of conflict minerals in the Democratic Republic of Congo (Taffel 2015), to the outsourced labour of content moderation to people in low wage economies (Chen 2014), an array of geopolitical, environmental and economic dimensions are shown to be concealed by the smooth interfaces of networked media and the discursive manoeuvres of major corporations (Van Djick 2013; Meikle 2016). Interrogating what is elided by the ambiguity of terms such as 'clouds', 'streams', 'friends' and 'followers', these works reveal their hidden others: inaccessible and invisible infrastructures (Bridle 2011, 2015); scarred landscapes and ecological depletion (Cubitt 2017; Parikka 2015); and the exploitation of unregulated labour markets (Fuchs 2014; Qiu et al. 2014).

The second perspective, intimately connected to the first, concerns the relationship between the 'user' (another productively ambiguous term) and networked media. Drawing in part from Dallas Smythe's (1977) seminal text on the 'audience commodity', much has been written concerning the economic role of the users of social media and networking platforms. Whilst researchers of network culture tend to share the view that a model of passive consumption is inadequate, there remains significant disagreement about how the economic relationship between users and social media companies should be framed (Fuchs 2014). In various turns we are framed as the consumer, producer, or commodity of networked media, and as the neologisms of 'prosumer' (Toffler 1980) and 'produser' (Bruns 2007) suggest, multiple of these positions in simultaneity. These debates will be addressed in further detail later in this chapter, particularly in relation to Fuchs' (2014) theory of digital labour and Jonathan Beller's (2006) theory of the 'cinematic mode of production'. They are raised here, however, to indicate the need for paying careful attention to how relationships of labour, value and productivity operate in vernacular

photography. These material and economic relationships should not obscure the cultural, technological, or psychological dimensions of photographic activity, but should be considered as an additional critical lens through which we can interrogate the meaning of contemporary vernacular photography. As outlined in the introduction, a key part of the argument being made by this thesis is that photographic mediation is neither reducible to, nor independent from, the political and economic forces with which it is involved. In other words, we must articulate vernacular photography's relationship to capitalism without losing sight of the material, temporal and libidinal qualities that define photographic mediation. With this in mind, whilst the first half of this literature review examines the relationship between western Marxism and visual culture, the second half will emphasize the particularities of vernacular photography and the material, technological and affective dimensions of mediation that move us both physically and emotionally.

This chapter begins with a brief overview of Marx's theory of the commodity form. This discussion of the dialectical form of the commodity will highlight how the concept of commodification cannot be separated from questions of labour and productivity. Whilst this is well-worn territory, it provides the necessary grounds from which to explicate the role of vernacular photography as an immanent part of material relations under capitalism. György Lukács' (1971) concept of *reification* (closely related to Marx's concept of *commodity fetishism*), extends this discussion by providing an account of how capitalist relations move outside of the factory and into the formation of capitalist subjects, with the commodity becoming an organizing factor of everyday life. As this section examines, the concepts of commodity fetishism and reification have significant value for understanding the world that photography participates in, and also for understanding the character of photography itself.

The question of how the image functions and circulates within such a system will be the subject of the following section, focusing on the works of Guy Debord and John Berger. Debord's *Society of the Spectacle* (1983), originally published in 1968, and Berger's *Ways of Seeing* (1972), written within four years of each other, both attempt to account from a western Marxist perspective how contemporary visual culture is inseparable from capitalist modes of production and consumption. However, whereas Berger's (1972, 135) account of the image portrays their circulation and production as the ideological expression of capital, Debord's (1983) concept of the spectacle positions the image as central to new deterritorialized forms of production and consumption. For Debord (1983, 43), the spectacle is not merely the ideological expression of capital but is the instrument through which it extends its reach outside of the factory and into the workers' leisure time. This divergence between Berger and Debord's accounts has significant implications for how we theorize the function and agency of vernacular photography under capitalism.

Whereas Berger and Debord remain largely focused on the object of our attention, others have focused instead on the act of attention and the labour of looking. Examining the work of Dallas Smythe (1977), Jonathan Beller (2006) and Christian Fuchs (2014), the next section will examine how looking at the image can be framed as a productive act of labour rather than a passive act of consumption. These theories merit our attention for their relevance to the contemporary business practices of corporate social media platforms, which play a key role in the production and circulation of vernacular photography. Rather than propose the image as a dematerialized commodity, these theorists propose that we understand mediation as a system of production; that the work of media is always at least partly performed by its spectators. Jonathan Beller's (2006) concept of 'the cinematic mode of production' provides a particularly compelling account of the relations between media and spectators, arguing that

the circulation and production of media changes how value is produced, as the valorizing potential of circulation is combined with the sensual and affective labour of spectators. Perhaps most significantly, Beller's account engages with the question of how media technologies do not simply extract value from the sensual apparatus of pre-formed subjects but are intimately connected to the process of subject formation and individuation. Placing Beller's work alongside the philosophies of Vilém Flusser (2000) and Gilles Deleuze (1992), the next section will examine theories concerning the relationship between subjectivity and media technologies. Drawing on Stiegler's (1998) concept of 'originary technicity', technology is framed not as an external tool that the subject puts to use, but as an integral and constituent part of what defines human life. However, as Flusser's (2000) concept of the 'functionary' and Deleuze's (1992) concept of 'dividuation' will both suggest, our entanglement with technology has been instrumentalized by commercial and state actors as a means of reconfiguring subjectivity in alignment with its own demands.

From here, this review returns to the economy of bodies, subjects and desires that form the generative and productive potential of vernacular photography, focusing particularly on Roland Barthes' (1981) *Camera Lucida*. Whilst *Camera Lucida* has been thoroughly discussed elsewhere, this section focuses only on signalling some of the economy of desires that course through the photograph in the emotionally and poetically charged account it presents. Barthes' work has been critiqued for both its naïve realism and for an absence of the historical and technological facets of photography (Tagg 1988). However, taken as a phenomenology rather than ontology ('So I decided to take myself as mediator for all Photography' [Barthes 1981, 8]), *Camera Lucida* reveals to us the affective charges and passions that photography can channel. Whereas the reifying effects of the spectacle described by Debord (1983) are said to foster illusory desires focused on the commodity form, Barthes' desires, whilst elusive,

seemingly spring from the all too real need to reconnect with his deceased mother, signalling the potential of photography to congeal within it not only the alienated labour of the consumer, but also the affective charge of intersubjective relations. This literature review concludes by examining how these flows of desire and capital are complicated by the production and circulation of networked images. As the mnemonic functioning of the image is joined by ephemeral photography and modes of 'ambient co-presence' (Okabe 2004), and as we increasingly encounter the image as but one in a swiftly moving stream, to what extent do existing theories of photographic desire require revision? Returning to a more thorough reading of Beller (2006), and also to Kember and Zylinska's (2012) account of photographic mediation, this section will question the agency of photography as a phenomenon that does not merely reflect or represent life, but, for better or worse, reorganizes, restructures and transforms it.

The Image Commodity

The history of vernacular photography is intimately connected with the rise of commodity culture, as both a mass-produced commodity in its own right and as the means of representing other commodities (Slater 1995; Wells 2000). With its status as 'both a commodity and a meta-commodity' (Slater 1995, 135), photography's story is closely entwined with the commercial interests of major industries, with John Tagg (1988, 37) going so far as to describe the history of photography as the alternate manufacturing and satisfying of consumer needs through an unlimited flow of commodities. Whilst this may be too reductive a statement to capture the complex cultural and social significance of photography, it does speak to a close relationship to capitalism that is present throughout its history, with phenomena such as the daguerreotype and carte-

de-visite offering early examples of the photographic image as a mass-produced commodity. Yet what does photography being or becoming a commodity mean? How does its mass production change the character of the image, or its ontological and epistemological underpinnings? In order to answer such questions, it is necessary to take a deeper look at the concept of the commodity and its relationship to culture, society and subjectivity.

For Marx (1976), the commodity form has a dual character: it has both a use-value and an exchange value. Use-value can be understood as the commodities qualitative and concrete utility; the aspect of the object that is used in its consumption: the heat generated by coal; the hunger satiated by bread; the body warmth retained by wearing a coat. Use-values are characteristics of commodities that are independent of the social or economic structure in which they are found, are 'independent of the amount of labour required to appropriate its useful qualities' and are 'only realized in use or in consumption' (Marx 1976, 126). Beyond its use-value, the commodity also has a second form of value which makes the object available for exchange in both earlier economic systems and advanced capitalist societies: exchange value. Exchange values operate by defining the quantities of one commodity that may be traded for another. Adhering to neither of the qualities of an item's use-value (its independence from labour time and its realization only in consumption), exchange value is understood always as an expression of the quantity of socially necessary labour time that has been crystallized within the object (Marx 1976, 128). The concrete 'usefulness' of the object, alongside the specific work of the labourer, is abstracted out of the commodity, leaving only a particular quantity of abstract human labour. As exchange values can only differ in quantity, and not in quality, the usefulness of the object and its specific benefits must be removed, 'its sensuous characteristics are extinguished' (Marx 1976, 128).

The 'fetishism of the commodity' (Marx 1976, 163) emerges not from one or the other of these two forms of value, but precisely through their dialectical interplay, in the immanent contradictions between the private concrete labour of the individual that produces use-value and the social abstract labour that produces exchange value (O'Kane 2013). Through this dialectic, commodity fetishism emerges as social relations come to be mediated through commodities, which in turn enter into social relations between themselves:

> […] the commodity-form, and the value-relation of the products of labour within which it appears, have absolutely no connection with the physical nature of the commodity and the material relations arising out of this. It is nothing but the definite social relation between men themselves which assumes here, for them, the fantastic form of a relation between things.
>
> (Marx 1976, 165)

As commodities enter social relations with each other, they are imbued with an objective form of value derived from the labour which has been crystallized into them. As the social relations and conditions of production that constitute the value of the object are not apparent within the substance of the commodity, they appear instead as 'socio-natural properties of these things' (Marx 1976, 165). The fetish character of the commodity is therefore derived from these social relations which have become detached from the individual labourer and placed into the commodity form as a part of its seemingly objective character. Rather than being linked to the labour that creates the object, value appears to rest instead within the commodity itself.

For Marx, the commodity form, and the modes of production corollary to it, do not remain limited to the sphere of work, but affect the total social and material

life of the individual subject, conditioning their perception and consciousness. As Marx (1977, Preface) argues, 'The mode of production of material life conditions the general process of social, political and intellectual life. It is not the consciousness of men that determines their existence, but their social existence that determines their consciousness.' Commodity fetishism and its effects are therefore understood as extending beyond the factory, transforming the subject's perception of themselves and society. This concept of commodity fetishism forms the basis for the concept of reification that György Lukács (1971) develops in *History and Class Consciousness*. Reification describes the process whereby subjects, social relations and processes are transformed into objects over which individuals have little or no control. As he writes:

> What is of central importance here is that because of this situation a man's own activity, his own labour becomes something objective and independent of him, something that controls him by virtue of an autonomy alien to man.
>
> (Lukács 1971, 86-7)

Reification develops from capitalism's framing of labour power as a commodity to be sold alongside any other commodity, alienating a fragment of the subject from themselves in a mode synonymous with Marx's notion of commodity fetishism (reification can be seen as such not as a distinctly separate concept to Marx's commodity fetishism, but as a theoretical turn that Lukács deploys to investigate these processes further). As the mode of production becomes specialized and fragmented (e.g. Fordism and Taylorism), the worker becomes isolated from the products of their labour, losing autonomy and becoming 'a mechanical part incorporated into a mechanical system' (Lukács 1971, 89). As its inverse, reification entails the personification and subjectification of things, which independently and autonomously enter into

social relations, possessing 'invisible forces that generate their own power' (Lukács 1971, 87). As Frederick Jameson (2011, 31) explains, through this process, 'human properties [are] transferred to the hitherto inert commodities themselves, these last begin to examine each other, to exchange looks, and to develop precisely those human relationships to which they now have a right and which their human accomplices have now forfeited.'

The process of reification is likened by Esther Leslie (2016) to the technologies of early animation, in which the liveliness of images passing by in succession masks the divisions and fragmentations that underlie the system. The machine rhythmically circulates round and round, producing a flurry of activity as sequential images are projected onto the screen. The illusory flow of animation is generated through a mechanism of 'stop-startingness' that judders each image into view; a sequence of time decomposed and chopped into many objectified or reified moments, only to be set back into motion under the rhythm of the projector – or indeed the factory (Leslie 2016, 73-7). Edward Muybridge's photographic studies in motion, laid out spatially in sequence, provide a proto history of these animation techniques (Figure 2). Yet they also offer an unveiling of the objectified frozen moments that comprise them; the stratified blocks of time that will be stitched together to create the rhythm of modern cinema, labour and leisure. We become, like the moving lines on the projector screen, 'annexed to the rhythm of the moving machine' (Leslie 2016, 77). As Leslie (2016, 77) continues, 'Animation is a vehicle of liveliness, but it enmeshes with a system in which animation is an impulse, a command to liveliness. Life is substituted and the self is affixed to technology.' Animation becomes the double of Lukács concept of reification, in which our movements and relations are no longer our own but have been ossified and objectified, taken possession of by the machinations of production and consumption that become the site of lively activity.
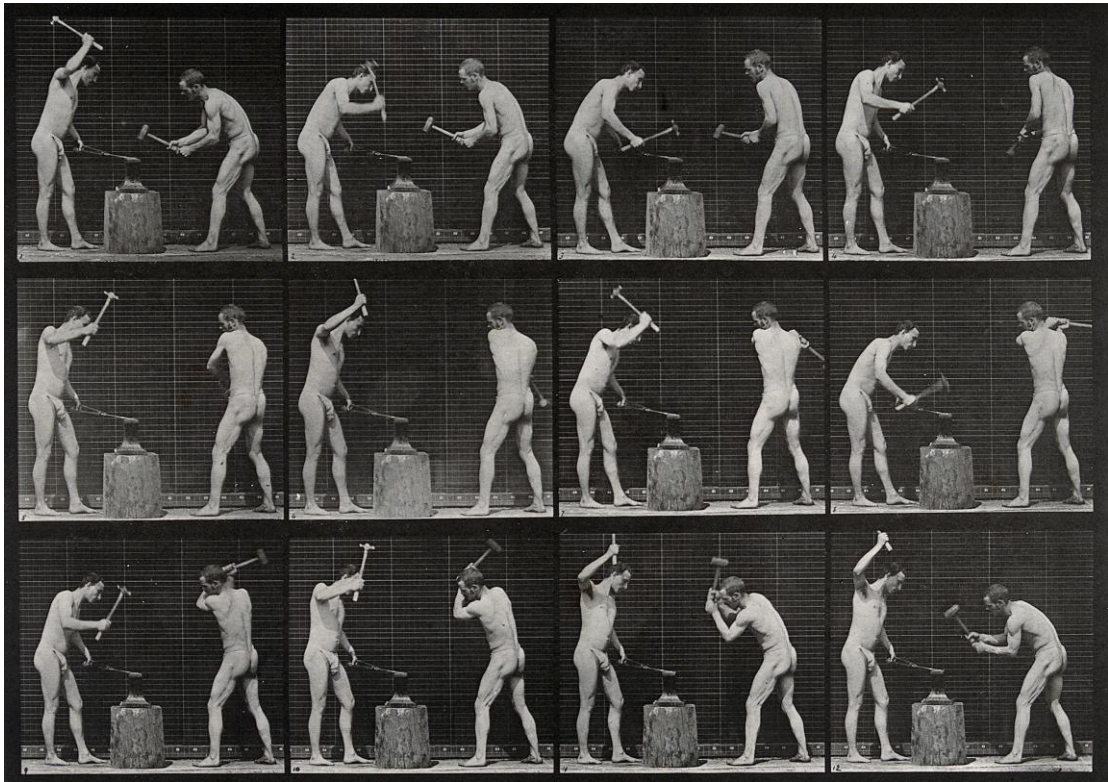
Figure 2. Edward Muybridge, 'Two Blacksmiths', 1887.

Lukács concept of reification is not without its critics. Taking a totalizing and abstracted view of society, the structures of capitalism appear immutable and all-encompassing, instilling a passivity in their subjects that renders them unable to enact any meaningful social change. As critical theorists such as Axel Honneth and Jürgen Habermas have argued, Lukács' theory lacks contact with everyday expressions of the social order, eliding communicative and intersubjective relations in an account that gives undue precedence to the systematized relations of production (Chari 2010). In short, by ignoring the affective and relational dynamics of society, Lukács presents an overly pessimistic view of social relations that offers little hope of subverting or

resisting the current dominant socio-economic order. [9] These critiques of Lukács do not necessarily diminish the value of reification as a concept, but do suggest that we should be mindful of how reification is imbricated with other forces in society. Rather than a governing principle, reification might be better viewed as a set of processes that interacts with others. A key value of the concept of reification is in articulating how the dynamics of commodity fetishism extend beyond the factory into everyday life and the formation of subjectivity. As these critiques emphasize, the blurring of the lines between work, leisure and everyday life that reification implies, also leaves open the possibility of resistance emerging from outside the factory.

There appears at first to be a close congruity between a Marxian account of commodity fetishism and the value that we imbue within the photographic image. When we look at the photograph, we do not view it as the outcome of a complex technological procedure or of the physical actions of our bodies, but as an object naturally vested with the power to reflect a slice of reality. While the conditions of its production may remain within the materiality of the photograph, we disavow this knowledge in favour of looking at and touching the referent within the image (Di Bello 2008). Through its seeming automaticity, photography conceals the processes and labour entailed in its production, rendering the photographic object as a transparent representation of the real, rather than the result of chemical, physical and intersubjective interactions (Bolter & Grusin 1999, 25). This play of disavowal and concealment within the

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[9] The limitations of human agency are also present in Lukács' interrogation of aesthetics, which left him unconvinced of the potential for art to be transformed into a form of praxis that could challenge capitalist reification (Singh 2019). By fixing on a traditional view of aesthetic engagement as the contemplative stance of the bourgeoisie, Lukács saw aesthetics as reinforcing the passive subjectivity of reification, offering little room for emancipatory action. By contrast, other critics, such as Walter Benjamin, saw in the new technologies of the twentieth century (and particularly film), the possibility of a more revolutionary aesthetics that could create room for playful and liberating experiences that transform subjectivity (Singh 2019).

epistemology of photography highlights a depth of connection between the photographic image and the commodity. However, the photograph cannot easily be reduced to the status of an abstract commodity, its sensuous characteristics being difficult to extinguish. Our photographs have little or no value outside of the personal and social relationships which they mediate. They matter to us and move us because of the physical connection they simulate between pre-formed social groups; relatives moved away or deceased, vacations or birthday celebrations we want to remember, or loved ones positioned prominently at our places of work. Whereas the commodity form for Marx obscures the social relationships behind the value of the object, the photograph seems to constantly re-affirm the unity and shared history of the social group, proclaiming a life connected and significant to others (Bourdieu 1990, 19).

The photograph is also difficult to place in terms of use-value, for its value is not diminished by its consumption; it does not turn to ash like coal or wear thin like a coat. Its substrate may become dog-eared, torn or faded through touching and handling, but if anything, the value of the photograph seems to increase through continued consumption. The image takes on a compound significance as we return to it, validating and re-affirming with greater force its symbolic value. Drawing on the work of Arjun Appadurai, Elizabeth Edwards (2004) argues that the photograph is not merely a set of visual signs, but a material object that accrues a *social biography* through its circulation and use, factors that contribute to, rather than diminish its value. Even in the mode of digital photography and social media which demand the perpetual renewal of our relationships through regular updates, the currency of older images remains through the posting of childhood pictures, or practices such as *Throwback Thursdays,* in which older images re-emerge amongst the latest updates in news feeds. We are therefore left with the photograph and the commodity as bearers

of different forms of value, which at first sight refuse to resolve into either camp. The photograph engages with commodification but cannot be fully accounted for by it without a reworking of its logic. That the photograph cannot be reduced to the status of an abstract commodity does not prevent vernacular photography from being imbricated with processes of commodification. It does mean, however, that we need to look beyond the image as a site of consumption and consider the broader context of vernacular photography as a site of production and circulation.

For Marx (1976) and Lukács (1971), commodification is part of a broader structural change in society that cannot be reduced to the standardisation of production or to a particular quality of the object. The dialectical nature of the commodity is not an emergent property of mechanisation (although the instrumental rationality of the factory bore heavily on Lukács' theory of reification), but is the result of a complex reorganization of society which produces new formations of objects and subjects. Commodities come to possess a seemingly active and agential role in shaping the social relations they mediate between, leaving the individual as a mere spectator to the unfolding force of commodities operating independently and outside of their control. As agency is displaced into the commodity, an agency seemingly outside of production, process or history, the individual is reified into an object or 'abstract mechanism' (Lukács 1971, 100). When considering the imbrication of photography with capitalism, it is necessary therefore to look not only to the image as a commodity form, but to the broader set of relations that it is embedded in and constitutive of. What circuits of labour are activated in the production and circulation of photography? How does the mediation of social relations through vernacular photography support or challenge the processes of reification? How does the play of desire and disavowal that we bring to the photograph intersect with the subjectivities of commodity culture? To examine

these questions in greater detail, the following section will turn towards Guy Debord and John Berger for competing versions of how commodification operates through visual culture.

The Spectacle and the Publicity Image

Guy Debord's *Society of the Spectacle* (1983) and John Berger's *Ways of Seeing* (1972) offer competing versions of how the commodity form operates through visual culture and the image. Both texts are derived from a western Marxist tradition, with Debord's work directly indebted to the writings of Lukács (1971), whereas Berger draws far more directly from Walter Benjamin's *Work of Art in the Age of Mechanical Reproduction* (1968). Whilst in other works Berger has more directly reflected on photography (most notably in *Another Way of Telling* [1995] and in the collection of essays gathered under the title *Understanding a Photograph* [2013] edited by Geoff Dyer), *Ways of Seeing* offers a more comprehensive interrogation of visual culture's relationship to mass production and commodity culture. There are clear parallels between Berger and Debord in their treatment of mass visual culture, but there is also a significant distinction in their view of the image's relationship to circuits of production and consumption, which bears heavily on the argument of this thesis. Whereas for Berger, visual culture appears to remain an auxiliary support to the functioning of capitalism, Debord places images at the heart of new deterritorialized modes of production.

Debord's (1983) *Society of the Spectacle* extends the principle of commodity fetishism into the realm of images, representations and desires. For Debord (1983, 17), the spectacle marks the movement of society from 'having into appearing', a slide caused by the total occupation of society by capitalist modes

of production. Whilst the spectacle Debord describes includes mass media, it also encompasses phenomena beyond this, including the total structure of appearances and desires cultivated by a new phase in the circulation of commodities. The spectacle is an extension of the logic of commodity capitalism brought about by crises of overproduction in the political economy. Debord argues that the rationalization of production has caused an overabundance of commodities, and in particular, an overabundance of use-values. Therefore, to sustain itself, capitalism must cultivate pseudo-needs that can only be met by a new class of commodities (Debord 1983, 51). The worker must engage with the spectacle to learn about and generate desire for these new commodities. In doing so, they are therefore caught twice, alienated in both the process of production and now also in the process of consumption. Leisure time is no longer the subject's own but is called to fulfil the continually expanding needs of capital:

> At this point the *humanism of the commodity* takes charge of the worker's "leisure and humanity," simply because now the political economy can and must dominate these spheres *as political economy.* Thus the "perfected denial of man" has taken charge of the totality of human existence.
>
> (Debord 1983, 43)

The spectacle mirrors the reifying effects described by Lukács (1971) but is now redoubled in the act of consumption. Already for Lukács, the political and economic system reified the worker's actions and psyche. However, Debord's concept of the spectacle reflects a qualitative shift in the character and form of this domination. Following the account of reification above, it might be said that in the structures of commodity production, the figure of the spectator had already been created through the worker's inability to effect change and participate meaningfully in the process of production, marginalising their

agency to the role of spectators of their own lives. What Debord is therefore describing as the spectacle can be understood as the harnessing and exploitation of this newly found *freedom from agency*, in which the alienation of labour is both justified and obfuscated by the importance of the worker's role in learning about the problems and solutions proposed by this new class of spectacular commodities. For the worker, whose social life and desires are denied by a system of production which excludes them from active and meaningful participation, the spectacle provides a corollary series of pseudo-events to obscure this fact, consequently alienating the worker even further from their desires (Debord 1983, 157).

The concept of the spectacle leads to a critique of the mass media as an extension of commodity fetishism into the realm of visual culture. The mass media is not a mode of communication between individuals but works as a mediator between individuals and commodities, and between commodities themselves (Debord 1983, 4). The circulation of images only presents the appearance of connectivity, whilst simultaneously reinforcing and maintaining the separation of individual subjects. The spectacular commodity, detached from its use-value, is free to operate through appearances, and as Debord (1983, 1) writes, 'Everything that was directly lived has moved away into a representation.' We live, according to Debord, through the spectacle. The spectacle is not a separate representation of life but is understood instead as 'the concrete inversion of life, [...] the autonomous movement of the non-living' (Debord 1983, 2). The spectacle draws its force from the fragmented and reified condition of the world as constructed by the sphere of commodities, whereby the individual desires of an alienated population are re-presented as the collective and unifying image of consumption. For Debord, this collective image is ultimately destructive and false, as in consumption the worker only reinscribes their own isolated and fragmented condition. As Debord (1983, 29)

argues, 'What binds the spectators together is no more than an irreversible relation at the very center which maintains their isolation. The spectacle reunites the separate, but reunites it as separate.' Whilst the individual continually consumes the spectacle in its multifarious forms, it answers only false needs and desires. Once consumed, the falsehood of these desires is realized, but only to be replaced by further spectacles addressing a revolving door of further pseudo-needs and desires, foreclosing the possibility of questioning the structure of commodity production.

In John Berger's (1972) *Ways of Seeing,* there is a significant level of congruity with Debord's account of the spectacle. This is seen particularly in Berger's account of the images placed under the term 'publicity'. Berger (1972, 153) states for example, that 'Publicity is essentially *eventless.* It extends just as far as nothing else is happening. For publicity all real events are exceptional and happen only to strangers.' This conception of publicity correlates closely with Debord's (1983, 2) notion of the spectacle as the 'concrete inversion of life.' Commodity fetishism and reification are also implied through Berger's notion of the 'spectator buyer', and our relationship to the commodities advertised through publicity images: 'One could put this another way: the publicity image steals her love of herself as she is, and offers it back to her for the price of the product' (Berger 1972, 134). 'Her love' here, is stolen by the production of commodities. It has become reified, and she may only become reunited with it in a fractured manner through the possession of commodities, commodities for which a pseudo-need has been created through the publicity image. Berger's publicity image is of a far more specific character than Debord's spectacle. For whereas in Debord's concept of the spectacle mass media comprised but one component of an all-pervasive structure of visual signs and rituals, Berger's publicity images are quite specifically the advertising images of mass media that circulate through magazines, billboards and televisions. This is a form of

the image that is made possible by the technical development of 'cheap colour photography' that rivals oil painting's qualities of 'colour and texture and tangibility' in a manner far surpassing previous innovations of mechanical reproduction (Berger 1972, 140).

Berger's (1972) conception of the history and structure of the image also differs vastly from Debord's (1983). Berger's (1972, 86) theory of the publicity image is derived from an account of Western visual culture, and in particular the oil painting, understood not just as a method or medium, but as a way of expressing 'new attitudes to property and exchange', which could only be expressed through its specific materiality and conventions. The techniques of oil painting are described as proto-photographic, as they represent objects in a tangible and tactile manner that begets holding and possessing the object (Berger 1972, 89). The weight and substantiality of the objects come alive on the canvas, their graspable materiality evoking ownership. However, the oil painting also increases the separation of the object on the canvas from the spectator, as its subjects become detached and distant within the scene. The subject, as described in Berger's (1972, 90) analysis of *The Ambassadors* (1533) by Holbein, is indifferent and out of reach to the viewer, creating a contradiction between intimacy and distance; they are of this world, but out of reach. Within this contradiction is the expression of class and power relations that oil painting reaffirms and strengthens (Berger 1972, 96). The symbolic and material weight of the painting expresses the wealth and power of the owner, who is at once the subject proper of the painting, but also remains the subject within the visual field as we look at the painting. In their failure to meet our gaze we remain unacknowledged by the painting, part of an undifferentiated scene unfolding before our wealthy ambassadors (Berger 1972, 94). Only by possessing the painting for ourselves might we lay claim to a portion of the subjectivity on offer by the image.

The publicity image is seen by Berger (1972, 144) as an extension of this logic into the contemporary moment, leading him to assert that advertising and other promotional images do not constitute a break within the history of Western visual culture, but a renewed iteration of the same phase. It is not only that the publicity image relies heavily on the forms and conventions of painting that leads Berger (1972, 144) to view it as a 'moribund' form of continuation, but that it adopts the language and signs of oil painting in order to re-affirm the existing social structure, albeit a slightly altered version of the social structure that oil painting addressed. For it is now the spectator-buyer, rather than the spectator-owner, to whom the publicity image addresses itself, speaking to our fantasies and desires for ownership of the commodities that these images depict; always just out of reach, and always speaking to a future self:

> Publicity speaks in the future tense and yet the achievement of this future is endlessly deferred. It remains credible because the truthfulness of publicity is judged, not by the real fulfilment of its promises, but by the relevance of its fantasies to those of the spectator-buyer.
>
> (Berger 1972, 144)

As with Debord's spectacle, publicity images are said to make equivalents of all commodities, trading the sensuous materiality of the object for an endless parade of appearances. They reduce the object to its symbolic significance as an object of desire, understood as the artificial construct of 'glamour', which Berger (1972, 132) describes as 'the happiness of being envied'. Yet whilst the publicity image mirrors Debord's spectacle in many regards, they do not enter the world as commodities in and of themselves, but only as a language that expresses and reinforces the system of production. The publicity image may

'feed upon the real', but it is stressed that this should not be confused with the 'pleasure or benefits to be enjoyed from the things it advertises' (Berger 1972, 132). Publicity may aid the circulation of commodities, reinforcing the desires and fantasies of what consumption may bring, however, the image remains always one removed from the economic relations of production. Rather than a commodity itself, the publicity image is seen as the coercive means of maintaining capitalism's survival by ensuring that our needs match its own and by imposing a 'false standard' of the desirable (Berger 1972, 154). Berger therefore positions the image as circulating and functioning at the level of the superstructure, rather than within the base of economic production and circulation (Marx 1977). The image resists becoming embedded within the production of commodities, acting instead as a series of signifiers and symbols that function as semiotically charged messages for consumers. Yet in a spectacular society, where appearances have subjugated reality, the pleasures of the spectacle are not secondary to their material counterparts but are indicative of new deterritorialized modes of production (Debord 1983, 5).

There is a split between Berger and Debord in their willingness to let the circulation of images enter the centre of the systems of production and consumption; where for the former it cajoles and nudges the consumer towards new forms of conspicuous consumption, the latter sees the image as formative of and central to new commodity forms. Held within this split is the inability of Berger's (1972) theory of the publicity image to capture the productive and transformative relations at play in the circulation of images in contemporary society. By maintaining an implicit separation of base and superstructure, and also to an extent a separation of subject and object, the character of the spectacle somewhat eludes Berger. While the spectacle remains indebted to the language of earlier visual cultures, for which it owes the credibility of representationalism and its structure of signification, its co-option into the

processes of mass production has done far more than rip the aura from the image or change our relationship to the artwork. Berger identifies a transferral of movement from the spectator to the image, however, he fails to recognize how this transferral is indicative not only of the proliferation of images as an extension of state and institutional power, but of the image's entry into the heart of commodity production and circulation. That 'we are static' and 'they are dynamic' (Berger 1972, 130), is not only an expression of ideological agility on the part of capital, but of the deterritorialization of commodity culture into the realm of consciousness, affect and desire.

Debord (1983), despite his more abstract concept of the spectacle, grounds his sometimes-obtuse argument in the material reorganisation of society through the image. It is within the crises of capitalist production that new forms of spectacular exploitation arise, reorganising and transforming the political economy. While the spectacle undoubtedly takes on the character of an ideological discourse – '[the] spectacle is the existing order's uninterrupted discourse about itself, its laudatory monologue' (Debord 1983, 24) - it also moves beyond representational politics and into the material reorganisation of production and consumption, transforming the strategies of domination over time, movement and subjectivity. The spectacle is the response to a crisis of capitalism brought about by the over-abundance of use-values and the need for the cultivation of pseudo-needs (Debord 1983, 40). According to Debord, this crisis entails the reorganization, and ultimately the colonization, of the worker's free time towards the production of desire for a new class of commodities.

However, the dynamics of vernacular photography suggest a material reorganization that Debord's (1983) account does not fully capture. Whereas Debord describes the spectacle as a unilateral accumulation of communicative

power as an organ of class domination, the vernacular is dispersed throughout the everyday; a discourse generated from below rather than above. Does this suggest a wresting of control of the modes of production from mass media and into the hands of workers, now given the tools of self-presentation and subject (re)formation? Alongside other dialogic forms of media (e.g. social media, blogging), can vernacular photography be seen as an emergent democratization of the spectacle, of which such a name would no longer be fitting? Debord's (1983, 42) argument that 'alienated consumption' becomes a 'duty supplementary to alienated production', alongside Lukács' (1971) account of reification, suggests otherwise. As the consumer is 'filled with religious fervour for the sovereign liberty of the commodities' (Debord 1983, 67), the vernacular is more liable in Debord's terms to mark a reconfiguration of the spectacle, rather than posing a direct challenge to it. What Debord's account misses is not, therefore, a re-appropriation of the tools of communication, but the packaging of new modes of production into the duty of alienated consumption. Through vernacular photography, the (already reified) individual works to place their own images of desire into the spectacle. Having internalized its logic, the worker not only partakes in alienated consumption but is ready and willing to participate in the production of made-to-measure spectacles that perfectly match the commodity's claims.

Jodi Dean's (2005) concept of 'communicative capitalism' provides a useful framework for thinking through this mode of production as it resurfaces in contemporary networked media. As Jodi Dean argues, far from democratizing the means of communication, networked and social media have become integral aspects of a political-economic formation that can be characterized as communicative capitalism. In this formation, communication is reformatted in line with the logic of commodification, extending the mechanism of reification to everyday communicative acts. According to Dean, the spectacle of

contemporary culture is not so much the unilateral accumulation of communicative power, but the creation of a vast deterritorialized factory that is distributed across the socius. With connectivity and communicativity becoming key principles of contemporary technoculture, the use-value of communication and the pretexts of dialogue and debate are eroded as online participation is swept up into a stream of endless content. As Dean (2005, 58) argues, 'Messages are contributions to circulating content – not actions to elicit responses. Differently put, the exchange value of messages overtakes their use value. […] Any particular contribution remains secondary to the fact of circulation.' The objectified social relations that characterize life under commodity culture find their double in the communicative apparatus of social media, where the energy and vitality of people communicating is congealed into contributions to the spectacle; the liveliness of media masking a loss of political and cultural agency.

Operating as a constitutive part of communicative capitalism, vernacular photography appears to mark the folding of production into the time of consumption. Having internalized the logic of conspicuous consumption, we are now asked to create new symbolic configurations for these commodities to operate within. For Debord (1983, 11), technologies of representation (understood as both ideological and material) are ultimately inseparable from the 'historical movement in which we are caught.' The popular practices of taking and sharing images, both through the historical model of Kodak, but also contemporaneously through the iPhone, Facebook and Flickr, do not operate outside of a late capitalist framework, but are in a very real sense its major protagonists. One does not find in Kodak or Facebook the tools of free creative expression and the possibility of reforming or critiquing the system in which they are embedded. Instead, the model of representation presented by these institutions and technologies is firmly situated as a key component in

extending the culture of commodification into the individualized and deterritorialized production of the spectacle.

The spectacle is not a unified field, but the proliferation of multiple and competing fragmentary spectacles, which at points overlap and converge, and at other points contradict and fracture against one another. As Debord (1983, 66) writes 'Every given commodity fights for itself, cannot acknowledge the others, and attempts to impose itself everywhere as if it were the only one.' This raises the prospect of there being cracks and fissures within the spectacle; gaps within its fabric that might be prized apart in order to contest and critique these new modes of production. As later sections examine, there are significant questions of agency that should be raised in relation to Debord's and Lukács' theoretical frameworks, both of whom take a totalizing view of reification and commodification that is not shared by this thesis. However, before considering these questions further, it is useful to examine the relationship between vernacular photography and commodification from another perspective. Whereas Berger (1972) and Debord (1983) begin from an analysis of the image or the spectacle, another form of historical-materialist critique articulates these relationships inversely, examining how the audience functions as a deterritorialized commodity that labours to produce itself. The following section therefore looks to Dallas Smythe's (1977) work on the 'audience commodity' and Christian Fuchs (2014) concept of 'prosumptive labour' as a means of examining our role in the productivity of vernacular photography.

The Attention Economy and Digital Labour

Smythe (1977) begins his seminal article on the 'audience commodity' by critiquing the overemphasis placed on the ideological content of media in

certain strands of Marxist thought. For Smythe (1977, 1), conceiving of the media as 'a sort of invisible glue that holds together the capitalist system', is an unsatisfactory explanation of the media's role in society, a critique he directs at the Frankfurt School of theorists, and in particular Herbert Marcuse, Max Horkheimer and Theodor Adorno. According to Smythe, the mass media must first be understood by their economic function within capitalism and their material relations of production. By conceiving of the media as a form of ideological coercion or propaganda, the Frankfurt School are accused of having left the embedded material relations of mass media untouched. While he does not deny the significance of media for ideologically aligning capitalism with its subjects, for Smythe this function only arises from its production of the audience for the purpose of generating and managing demand. From a historical materialist standpoint, the 'blindspot of Western Marxism' is an understanding of demand management and audience production, or what is referred to by Smythe (1977, 1) as the 'consciousness industry'.

Smythe's (1977, 2) question, simply put, but seemingly unanswered, is 'What is the commodity form of mass-produced, advertiser-supported communications?' In answering this question, Smythe proposes that the commodity form of mass communications is the audience. The audience is produced by a mass media which aims to occupy the attention and consciousness of workers in their 'off-the-job work time' (Smythe 1977, 3). The primary economic relation of mass media is therefore not the consumption of programmed content by spectators, but the consumption of the audience commodity that is produced both by the labour of media producers and by the audience itself. During the worker's time that is devoted to the consumption of media, they carry out the dual function of 'perform[ing] the essential marketing functions for the producers of consumers' goods' through audience labour,

while simultaneously 'work[ing] at the production and reproduction of labour power' through their expenditure of leisure time (Smythe 1977, 3).

By framing the audience as a commodity to be produced, and in positioning this dynamic as an indispensable part of the production process, Smythe's account questions the division of base and superstructure in Marxist thought. This dichotomy suggests an internal division between the relations of production, and everything not directly related to these processes (encompassing arts, culture, religion, family and the media). If the media's primary economic function is the production of demand, and not solely the proliferation of an ideology, how can it be separated from the economic base? For Smythe, we must theorize the media as an extension of the economic relations of production, now moved outside of the factory and into the consumption of media. As Smythe argues:

> If we recognize the reality of monopoly capitalism buying audiences to complete the mass marketing of mass produced consumer goods and services much further analysis is needed of the implications of this "principal and decisive" integration of superstructure and base which reality presents.
>
> (Smythe 1977, 20)

Smythe's materialist intervention into the production and consumption of media leads him in part to a similar conclusion that Debord (1983) reaches; the alienation of workers from their labour has been extended via mass media into their own production and reproduction. Labour power is not an independent commodity that the worker is free to sell (both free to choose how this labour is sold, and free of the productive apparatus that would enable their reproduction without the selling of labour), for the reproduction of labour

power is alienated from themselves in a process of consumption that is both outside of but integral to the productive mechanisms of capital. Linking his work to Debord's, Smythe (1977, 21) articulates how the spectacle is not a separate sphere that represents the 'real' world of people and objects but is co-constitutive of a new 'real' which transforms the historicity of capital, presenting it as both immutable and timeless. However, the deterritorialized commodity of media is not the image as Debord proposes, but the audience, who labour to transform themselves into consumers, learning the desire and lure of commodities, the new problems to be solved by consumption, and the ideological premise of individualist and competitive materialism (Smythe 1977, 12).

It might be argued that Smythe's account renders the audience as passive and mute spectators to the unfolding demands of capital, offering no potential for resistance, negotiation or appropriation to occur through mediation. As David Hesmondhalgh and Brett Caraway (2014, 91) contend, Smythe's theory of the audience commodity loses any connection with the subjectivity and struggle of media consumption and participation, fetishizing the audience commodity as mere cogs within the machine of capitalism. For Hesmondhalgh and Caraway (2014), once the audience is framed as a demographic, any active decision making with respect to the mass media can only be seen through the lens of alienation and false-choice consumerism within a larger milieu, and not as acts of cultural or economic resistance. However, while individualized resistance is somewhat precluded from Smythe's account, his situating of mass media in the base of economic relations not only deterritorializes the sites of capitalist production, but also signals the potential for collective bargaining and resistance outside of the factory. As the exploitative relations of capitalism extend into the extraction of value from the free time of the consumer, the worker in the act of consumption is framed as 'making decisive material

decisions which will affect how they will produce and reproduce their labour power' (Smythe 1977, 6).

A significant question for Smythe's (1977) work is what happens once the audience become active participants in the creation of media, now appearing as dialogic in form, as opposed to the unilateral mass media he describes? By creating and distributing our own images, can we reclaim part of our alienated selves, or does the act of capturing and sharing images only integrate the audience further into their own production as commodities? Christian Fuchs' (2014) analysis of digital labour aims to address some of these questions through the concept of the 'attention economy'. Fuchs refutes the celebratory notion of participatory media increasing democratization and self-determination in contemporary society. Rather than flattening media hierarchies, or enabling direct communication between subjects, social media engage in 'internet prosumer commodification' (Fuchs 2014, 90). Time spent online is characterized by a form of prosumptive labour that generates value through the production of data and content that can be sold as commodities to advertisers. Fuchs' analysis resonates with Dean's (2005) earlier account of communicative capitalism, in which communication becomes the new frontier of capitalist production. However, Fuchs extends Dean's argument by asserting that if communication and participation are productive of value, they should be viewed as a form of unpaid labour. Using Marx's theory of value, Fuchs (2014, 102) argues that this form of work is infinitely exploitative; as the user receives no wages for the value producing labour that they undertake, this activity all constitutes surplus labour.

In Fuchs' (2014) account, the utilization of Marx's concepts of necessary and surplus labour causes some confusion around the extent to which our online activity can be framed as a valorizing productive activity. As Fuchs (2014, 96-

122) debates, the absence of payment for our participation online could be indicative that these activities should not be framed as commodified or alienated labour at all. If labour has zero value, it follows in Marx's terms that no surplus value can be created from it (if we accept the premise that this is an economic relation of capitalism, and not an earlier form of worker exploitation such as feudal labour or debt bondage). For Fuchs (2014, 96), this argument should be dismissed, as the online activity of users does indeed create surplus value for the corporation and must therefore be framed as productive labour, the labourers lack of remuneration indicative only of the character of this work as surplus rather than necessary labour, which in Marx's terms is never paid.

A second perspective is that the worker is indeed remunerated, only not through the universal equivalent of money, but through the in-kind communicative services provided by companies such as Facebook, YouTube or Twitter. As Fuchs (2014, 105) argues, social media operate as the means of 'communicative survival for users'. This argument supposes that the labour of generating data is paid for by access to the network and the services these companies provide of unlimited and instantaneous communication. Fuchs rejects this argument on two grounds. Firstly, time spent consuming these services is also always simultaneously productive and therefore cannot be understood as an appropriate form of payment for the labour enacted. Secondly, labour cannot be paid through in-kind services, as payment in the universal equivalent is seen as axiomatic to capitalist wage relations, which are dependent on the exchangeability of the payment for goods necessary to survival (Fuchs 2014, 105). This second argument could be challenged via Marx (1976, 275), for the reproduction of the worker is based not only on acquiring the goods for subsistence, but also the additional needs of a given historical epoch, which might encompass education, arts, and, potentially for our time, online communications. The argument that in-kind services could not

constitute a wage proper is also incongruous with the analysis of Arjun Appadurai (1986), who perceives the role of barter (trading through in-kind services and products) increasing, rather than decreasing in the current globalized economic climate.

Fuchs' first argument – that the collapse of consumption with production in online activity is incompatible with Marxian economics – seems to inhabit a more fundamental problem with his appropriation of Marx to the question of digital labour. Fuchs confuses the dialectical materialist method of Marx with the application of this method to the industrialized societies of the nineteenth century. It is not necessarily appropriate to frame the digital labour of attention within the fixed schema of wage labour described by Marx. Instead, as argued in the introduction, we should look to Marx's methodology as a way of examining the immanent tensions within the production and circulation of commodities. The method of dialectical materialism that Marx develops is a way of understanding the tensions, contradictions and interrelations of commodity culture. There are always, within the dynamics of capitalism, contradictions and crises that may entail transformations to the way commodities circulate and value is produced, some of which may not operate in synonymy with the historical moment of Marx's writings. As the following section examines, the productivity of vernacular photography does not necessarily follow the logic of industrial capitalism, As Beller (2006) argues, via Deleuze, by connecting directing to the sensori-motor apparatus, the technologies of mediation productively reconfigure subjectivity and desire in ways specific to the historic period of late capitalism.

Functionaries, Spectators and Desiring-Machines

This review has so far examined how the image and audience have been framed as different loci of photography's instrumentalization by capital. However, as argued in the introduction, if we are to account for the agency of vernacular photography in contemporary life, it is necessary to look beyond the image to the broader socio-technical assemblages that photography is embedded in. What is needed therefore is a conceptual framework for understanding the relationship between technology, subjectivity and society. A starting point for this can be found in the above discussion of Kember and Zylinska's (2012) theory of mediation. By framing mediation as a fundamental process of life - culturally, politically and biologically - media technologies and processes assume a different position in relation to subjectivity and society. Whereas technology has been previously posited as an externality that we either control or are controlled by (technophilia or technophobia respectively), by drawing on the work of Karen Barad and Bernard Stiegler, we are reframed in this conceptual framework as always-already technological: 'we are—physically and hence ontologically—part of that technological environment, and it makes no more sense to talk of *us* using *it*, than it does of *it* using *us*' (Kember and Zylinska 2012, 13).

A central premise of Stiegler's philosophy is that the human has always been technological (Frabetti 2011). Drawing on Heidegger's concept of technology as 'poesis' (a bringing forth or revealing), Stiegler (1998) argues that technologies are not only tools or instruments that extend our capacities but are a fundamental and co-constitutive part of what it means to be human. Via a reinterpretation of the myth of Prometheus and Epimetheus, Stiegler offers a theory of 'originary technicity' that rejects an instrumental or utilitarian concept of technology, claiming instead that the human species evolves with

and through technology by a process of 'epiphylogenesis' (Frabetti 2011). Referring to the embedding of memory in technical systems and artefacts, this term is designed to reintegrate the technical with the biological, marking 'a break with pure life' (Stiegler 1998, 140) and placing the technological back into our conception of the human.

Stiegler's philosophy shares significant features with Marx's account of technology. Like Stiegler, Marx viewed technology as being intimately connected to the invention of man. As the 'productive organs of man in society' (Marx 1976, 493), technology was understood by Marx as playing a significant role in shaping the physical and mental qualities of the subject, defining the horizon of their potential actions in the world. This was not necessarily a technologically determinist reading of history, but rather a recognition that humans are produced in the milieu of social and material relations, including the matter of tools, instruments and machines (Ertuna 2009). Where Stiegler breaks decisively from Marx is on the question of instrumentality. As Richard Beardsworth (2010, 186) summarizes, according to Stiegler, 'The Marxist theory of production remains instrumentalist and humanist' and fails to recognize that 'since technology is constitutive of hominization, it cannot constitute per se a means to a human end.' As the technical supports of life are foundational to the processes of individuation and our conception of temporality, a schematic separation of modes of production and social relations cannot hold, as both are always-already interposing on the other. Whether or not Marx's political philosophy prescribes such a definitive separation between technological modes of production and socially organized relations of production is a matter of significant debate that is outside the scope of this literature review (Ertuna 2009). What is pertinent, however, is how Stiegler's framing of technicity furthers an understanding of vernacular photography's function within capitalism.

Stiegler's way of thinking about technology, as demonstrated in Kember and Zylinska's (2012) work on mediation, reframes the photographic apparatus as an assemblage of forces that plays an integral and co-constitutive role in the production of subjectivity. Rather than an external series of tools and artefacts that we use, photography becomes part of hybrid process that is at once biological, geological, technical, social and cultural. If 'we have always been mediated' (Kember and Zylinska 2012, 18), mediation ceases to be an epiphenomenon of capitalism, as it has sometimes been presented in the broader Marxist tradition (Postone 1993). Media technologies may have been co-opted and instrumentalized in the service of reproducing capitalist socio-material relations, but as a fundamental part of our being in and becoming with the world, a decoding and deterritorializing of these systems has the potential to transform much more than our photographic practices. Whilst it remains necessary to ask socio-economic questions about how vernacular photography functions as a vehicle for generating value on behalf of commercial institutions, this ontological framework reveals another set of questions concerning the types of subjectivity that are called forth by the photographic apparatus. How are memories, desires and perceptions produced or re-organized by photography, and to what extent have these processes been instrumentalized as a means of biopolitical control?

These questions are addressed by Vilém Flusser (2000) through the concept of the *functionary*, which serves as a useful framework for understanding the entanglement of the sensorium with photographic technologies. According to Flusser, the functionary is called forth by a class of technologies termed *apparatuses*. With the apparatus, the technology is not external to the human operator but forms a dynamic hybrid entity, they 'are inside their apparatus and bound up with it' (Flusser 2000, 27). Having merged into a unity with the

photographic apparatus, the functionary comes to 'see the world through the camera and in photographic categories […] Their actions are automatic camera functions' (Flusser 2000, 58). As the photographic apparatus develops over time in response to social feedback, it progressively realizes its potential as a producer and distributor of images. But more than this, its development entails increasing the automaticity and efficiency of the device, concealing its own operations within the black box of the camera, whilst enabling perceptions and desires to flow seamlessly from the functionary through the apparatus. In connecting the sensorium directly to the apparatus, there is a reciprocity by which the camera is imbued with the emotional and libidinal desires of the functionary, whilst at the same time the functionary comes to think and feel photographically.

As the term functionary suggests, the hybridity that occurs between the human and the apparatus is not made on equal footing. The exterior of the camera enables the functionary to control the apparatus, but the impenetrable interior (understood not only technologically, but also culturally and politically) prevents the user from gaining mastery over the program of photography. As Flusser (2000, 28) starkly puts it, 'Functionaries control a game over which they have no competence. The world of Kafka, in fact.' With the sensory capacities of the photographer connected to the camera, the only possibilities that can be realized are those contained within the program of the apparatus, which defines in advance the parameters of the game. In this way, photography is something of a harbinger to the apparatus era, a precursor to a new regime that can only be properly identified in light of more recent developments in computerization and information technology. The term apparatus therefore designates those technologies that characterize post-industrial society; machines that progressively automate symbolic and cognitive work, limiting the horizon of possible creative action to the manipulation of symbols within a

pre-defined program. According to Flusser, within this regime we need to think beyond a humanist criticism of technology that situates it as a tool of domination or control by one social group over another. Whilst post-industrial technologies 'express those social forms capable of generating and using them' (Deleuze 1992, 6), and therefore reinscribe the uneven distribution of resources and power that have produced them, what is more significant for Flusser is how the apparatus has acquired an agency of its own that increasingly side-lines human intentionality altogether.

Flusser's account of technology, when situated alongside the work of Stiegler (1998) or Kember and Zylinska (2012), appears overly pessimistic and technologically deterministic. Whereas Stiegler posits the human as always-already technological, Flusser views the present era as marking an intolerable incursion of technology into the terrain of human agency: 'All human decisions are made on the basis of the decisions of apparatuses; they have degenerated into purely "functional" decisions, i.e. human intention has evaporated' (Flusser 2000, 73). Flusser argues for a critique of the apparatus that moves beyond humanism, but the political project of this critique appears to be the return of an ontological separation between the technological and the human, restoring the apparatus to its proper position as 'subordinate to human intention' (Flusser 2000, 80). Furthermore, Flusser overstates the extent to which human agency is side-lined in the development and production of apparatuses. Whilst new technologies always emerge within the constrained and hybrid space of pre-existing socio-technical frameworks (Bolter and Grusin 1999), there remains a significant degree of intentionality in the design and production of apparatuses in order to meet the demands of the institution.

However, Flusser's conceptual framework still provides significant insights for understanding the agency of vernacular photography in contemporary society.

In his ontology, photographic technologies are not an external and separable set of tools that we use, but an apparatus that we are an integral and constitutive part of. In binding our sensorium to the camera, we reconstitute ourselves as photographic subjects made in negotiation with the program of the apparatus. Even if our co-extensive relationship with technology precedes its instrumentalization by capital (as Stiegler argues), this is certainly the situation that we find ourselves in today, with the photographic apparatus operating within and contributing towards the terrain of post-industrial capitalism. Perhaps most importantly, Flusser argues that photography does not only create new circuits of labour and value that the human subject must now navigate, but operates as a means of reshaping subjectivity in order to meet the demands of a new political and technological regime. This connection of the photographic to the biopolitics of late capitalism is also a central feature of Jonathan Beller's (2006) 'cinematic mode of production'. Like Flusser, Beller's work speaks of a post-industrial shift from the material to the symbolic that reconfigures the subject of late capitalism, with the sensual apparatus of the worker marking a new frontier of capitalist exploitation.

Beller (2006, 1) argues that the cinema and subsequent media technologies are 'deterritorialized factories in which spectators work, that is, in which we perform value-productive labour.' In what Beller (2006, 4) terms 'the attention theory of value', the image becomes the mediating interface between the sensorium of the worker and capital. The cinematic mode of production that Beller (2006, 9) describes is the 'hyper-development of commodity fetishism', in which the image component of the commodity is intensified and peeled away from its material conditions. The alienation of the workers vision and wider sensorium is only made possible by the previous alienation of labour, yet they are not synonymous; looking may produce value like wage labour, but this does not mean it is de facto wage labour (Beller 2006, 7-8). Instead, the

attention theory of value argues that the spectator performs new economic functions and is engaged in new modes of valorization that are structured by and with the cinematic. These cinematic modes of production not only structure economic activity outside of labour time but come to reorganize the total structure of society and the subject (Beller 2006, 13).

Beller recognizes the productive potential of circulation, that value is added to the commodity in its movement through the socius and the subject. The cinema takes the fetish character of the commodity and circulates this through the sensorium of its spectators, accruing value as they come to identify with and desire the newly speaking objects before them (Beller 2006, 21). Cinema, taken as the industrialized production, orchestration and circulation of images, exploits the worker's sensual apparatus for the valorization of capital, and in so doing, alienates the subject from their senses. The circulation of images is understood therefore as an extension of the circulation of capital; it is the mediating interface between bodies and images, and by extension between subjects and commodities. The alienation of the senses and the reification of perception performed by the cinematic does not remain in the realm of cinema but becomes the blueprint for new modes of production premised on the now alienated sensorial desires of the spectator.

Beller (2006, 161) argues that the image of cinema enacts a fundamental attack on the ability of humans to 'language' the real, scrambling its functioning by providing a short cut between our being of the world and our ability to express this experience. The image is that which exceeds signification, by not merely pointing to, but by simulating the real (Beller 2006, 161). In doing so, the image bypasses linguistic assimilation, moving so fast and with a force that surpasses representation, enabling the world to seemingly speak for itself without the need of subjective interventions to structure and make sense of it. Referencing

the work of Wlad Godzich, Beller (2006, 161) describes how the photograph presents a fiction of the world, an imagined fantasy, that by its synonymy or coincidence with the world denies the function of language as the mediator between fantasy and the real. This coincidence with the real for Godzich runs parallel to Barthes' understanding of the photograph as a message without a code and the myth of the photograph as an indexical rather than symbolic message. As Barthes (1981, 4) states, 'a photograph cannot be transformed (spoken) philosophically, it is wholly ballasted by the contingency of which it is the weightless, transparent envelope.' Echoing this sentiment, Beller (2006, 161) argues, 'Images begin to seem like indifferent nature – undifferentiated, non-intentional, non-signifying landscape – nothing for no-one.'

This displacement of the logos from consciousness produces a subject that cannot constitute itself and is marginalized by 'a world whose intelligence exceeds its own' (Beller 2006, 163). This process is understood as operating on the 'unconscious of the unconscious' (Beller 2006, 163), the invisible structure that produces the form and configuration of our unconscious. While the unconscious most certainly precedes cinema as the ever-present slippages and gaps between language and reality, the cinematic mode of production creates the condition whereby the unconscious dominates and proliferates in our lives, leaving the subject unable to experience the world as a unified other against which to constitute themselves, as the world becomes increasingly 'resistant to language' (Beller 2006, 164). The mediation of capital through the image therefore leads increasingly to a breakdown in the subject, as the world speaks for itself, mixing subjects within a unified expression of an order without the separation of self and other presupposed by the linguistic order of the 'I' (Beller 2006, 163). The cinema 'bring[s] the industrial revolution to the *(its)* senses' (Beller 2006, 165), and transforms the subject from the unified 'I' of literature

into a reified and fragmented collection of *intensities* that are caught in the gaze of various objects filled with agential significance.

The agency of objects that Beller (2006) describes can be found to an extent within the commodity fetishism and reification of Marx (1976) and Lukács (1971), for whom the commodity becomes the value-bearer of capital as we cease to acknowledge the social relations crystallized within the object. However, Beller extends this concept by describing agency in relation to the visual field of Lacanian psychoanalysis and the bivalent power of the gaze to inscribe both objects and subjects within space. Within the dialectic of seeing and being seen, a model of subjectivity emerges for Lacan, whereby seeing the gaze of the other inaugurates a separation of self and other (Beller 2006, 168-9). In this process, the subject is also alienated from itself through the need to identify with the other's perception and scopic desire. The alienation built into Lacan's theory of the other's gaze, combined with the dynamics of a cinematic mode of production based on the fetish character of commodities, creates a world in which objects look back with new-found agency. Drawing on Lacan's interpretation of the visual field, Beller (2006, 168) asserts that, 'The camera is an image for the agency of objects; moreover; it exemplifies their practice in visual terms – it is the object par excellence and marks the impact of alienation on the visible. The camera is, to a certain extent, the paradigmatic object of late capitalism.'

Beller's (2006) account of the cinematic is not confined to the cinema. Cinema provides the model for a new mode of production in which the sensual and perceptual are alienated from the spectator through reorganizing the circulation and production of images in reciprocity with the circulation of commodities. In Beller's account, the audience are not only utilized as a commodity for the generation of demand as Smythe (1977) postulates, but are

reformed through their continued cybernetic relation with the cinematic. Workers are not only alienated from their labour (now extended into leisure time as a site of productive activity) but are deterritorialized as zones of intensity which respond productively to the circulation of images. The cinematic does not address itself to the unified spectator-buyer as Berger (1972) supposes, but to the competing and fragmented desires of subjects whose sensual apparatus has been co-opted by the production and circulation of commodities that speak only for themselves. Beller therefore enables us to speak of the productive potential of vernacular photography in an alternative way to that proposed by Smythe (1977) or Fuchs (2014). Like Flusser, he enables us to discuss photography as a type of productive apparatus whose circulation produces alienating effects beyond the co-option of our free time for the purposes of value production. The alienating effects produced by the cinematic mode of production, whose 'special commodity' is the sensual apparatus of its spectators rather than the individual's labour, are of a different quality to those of early industrial capitalism. Whereas Smythe and Fuchs articulate the economic functioning of media as the exploitation of workers' free time for the valorizing potential of commodities, firstly through their attention as the audience and latterly through the 'prosumptive' actions of users, Beller's articulation of the economic function of media operates on a different register; that of a sensual reorganization of the spectator through the cinematic for the creation of deterritorialized desiring machines.

Beller's analysis draws heavily on Deleuze and Guattari's (1983, 8) concept of 'desiring-production'. Countering the Freudian narrative of the unconscious as a representational theatre structured through lack, they argue for a model of the unconscious as a factory driven by desire. For Deleuze and Guattari (1983, 24), the ideal forms of Freud mask the dynamism and productivity of the unconscious; 'a classical theatre was substituted for the unconscious as a

factory; representation was substituted for the units of production of the unconscious; and an unconscious that was capable of nothing but expressing itself—in myth, tragedy, dreams—was substituted for the productive unconscious.' Peeling away these singular ideal forms, Deleuze and Guattari find a more processual, multiplicitous and productive force operating in the unconscious. The desiring-machine of the unconscious is always assembling new connections between partial objects, partial bodies and partial flows, both inside and outside of itself. The humanist subject is therefore replaced by a continuous process of becoming-with and differentiation-from the world. For Deleuze and Guattari, the subject does not possess an interior ontological essence that subsequently performs actions in the world, but is generated as it makes contact with the world, continually enfolding what is outside of itself into new assemblages (Stark 2017).

Having substituted the bounded humanist subject with a continuous process of productive differentiation, Deleuze and Guattari (1983) frame the political and technological landscape as a series of openings and blockages that both enable and repress certain modes of desiring-production, a territory in which certain forms of subjectivity are made possible whilst others are excluded. As Deleuze's (1986) work on cinema indicates, mediation plays a central role in this process, affording the potential to actualize modes of becoming by connecting our sensory apparatus to temporalities, affects and rhythms that challenge habituated notions of subjectivity. Synthesizing Deleuze and Marx, Beller (2006, 165) recognizes this productive potential of the cinematic, but argues that within late capitalism this process almost always operates as a means of re-organizing the spectator's sensual apparatus so that it may respond more productively to the continuous stream of commodities that post-industrial societies produce. The unified subject of modernity is therefore

called to give way to zones of intensity that can productively engage with multiple conflicting stimuli in order to generate value.

The deterritorialization of the unified subject is also the theme of Deleuze's (1992) later work on the 'societies of control'. In this short essay, he argues that biopolitics no longer operates on the body of the individual, as per the disciplinary societies that Foucault had previously analyzed, but on categories that cut both through and across the subject: 'We no longer find ourselves dealing with the mass/individual pair. Individuals have become "*dividuals,*" and masses, samples, data, markets, or "banks"' (Deleuze 1992, 5). For Deleuze, the dividual signifies a decoding of the subject as a means of control at the infra-personal and supra-personal level (Lazzarato 2014), with the regulatory mechanisms of capital requiring the subject to be 'undulatory, in orbit, in a continuous network' (Deleuze 1992, 6). The concept of the dividual becomes increasingly pertinent to the argument of this thesis as photographic practices are connected to networked assemblages that generate continuous streams of data designed to capture emotions, desires and affinities (Wachman and Rose 2013). Whereas the cinema held out for Deleuze the radical potential of deterritorializing the subject into new hybrid configurations, dividuation marks the pre-emptive capture of these energies into surveillance and marketing assemblages that restrict and instrumentalize these flows. Deleuze's framework of deterritorialization therefore points simultaneously to the liberatory potential of mediation and to its instrumentalization by commercial and state actors, both of which are present in the processes and performances of contemporary vernacular photography.

Desire and Photography

Following Henri Bergson, Deleuze gave little weight to photography, conceiving of the photograph as unable to operate beyond representational and cliched thinking. For Deleuze, the frozen image substituted differentiation with homogenization, removing the vitality of the object in favour of a singular and flawed appeal to truth and identity (Zepke 2017). However, when we broaden our analysis from the image alone to the assemblage of libidinal, temporal and material processes that constitute photographic mediation, Deleuze's discounting of photography appears ill-founded. Photography circulates with an ever-greater intensity through a variety of networks, and is in many regards at the forefront of realigning our sensual apparatus with the circulation of commodities, producing new intimacies and mobilities of mediation. If the cinematic mode of production entails retooling subjectivity, with 'perception [becoming] increasingly bound to production' (Beller 2006, 3), the photographic streams of social media and messaging platforms certainly seems to meet the criteria. Furthermore, the sensuous characteristics of photography have always exceeded the limits of representationalism, with photographic processes making temporal connections and disjunctions that produce a range of desires as they pass through the sensorium. Returning to the particularities of photography, which have in some regards been absent from the discussion thus far, this section argues that the desires and beliefs activated by photography contain a vitality that is overlooked by Deleuze. Roland Barthes' (1981) *Camera Lucida*, with its emphasis on the connection between death and photography, may appear to be an odd place to look for this vitality of vernacular photography. Yet the phenomenology of desires articulated by Barthes speaks to a photography that is animating and lively by virtue of the affective charges that resonate between the image and the spectator.

Barthes' (1981) *Camera Lucida* ('*CL*') has become almost as entwined with the development of photographic theory as Kodak became with the practices of snapshot photography. Numerous authors have dissected, critiqued and responded to *CL* (a collection of essays responding to this text have been edited by Batchen [2011], whilst Elkins [2012] also provides a book length response to the text). Barthes' (1981) 'little book', as he calls it, occupies a curious position within the theory of photography. As a continual touchstone for the exploration and analysis of photography, the text is a strikingly subjective and emotive account of the relationship between photographs and one particular spectator – Barthes himself. Historical narratives, technical details and a broader cultural critique are all largely absent from the text, leaving only a sustained attempt at engaging with and unveiling the eidos of photography through Barthes's own body of desires: 'I decided to take myself as mediator for all Photography' (Barthes 1981, 8). The aim of this section is not to provide a thorough analysis of *CL*, but to focus on the relationships between photography and desire that are revealed by the text, and to consider how a belief in the indexicality of the image enables desires and fantasies of the real to be crystallized within it.

CL can be read as an uncharacteristic work of Barthes. As John Tagg (1988) examines, Barthes' movement towards post-structuralism and his earlier engagement with semiotics appears partially reversed by this realist account of photography and his underlining (and at times overwhelming) belief in the photograph's indexical relationship to its referent. Barthes' belief in the realism of the image – that it *must* in some sense be physically linked to the object depicted – is in one sense a necessary prerequisite to the following insights that develop as the book progresses. The *punctum* that famously 'pricks' and 'wounds', through both the photographs marking of a 'past presence' (the 'that- has-been' [Barthes 1981, 76] of photography), but also through the detail

that resonates only at the affective rather than cultural level, can only acquire such force through a sense of a deeply embodied physical connection that is actualised through the image.

The interpretation of photography that *CL* offers can therefore seem limited unless we adopt a similar premise to Barthes, one that for Tagg (1988) is untenable. For Tagg, the failures of *CL* can be understood as ultimately deriving from Barthes' (1981, 1) opening statement of intent: 'I was overcome by an "ontological" desire: I wanted to learn at all costs what Photography was "in itself," by what essential feature it was to be distinguished from the community of images.' According to Tagg, Barthes' project is a priori ill-founded, for photography in itself does not exist outside of the historical and cultural contexts through which it is deployed. In order to distinguish photography from the community of images, it is necessary not to look at the photograph in itself, but at the discourses and institutional frameworks that sanction certain readings of photography. As Tagg (1988, 4) states, 'what Barthes calls "evidential force" is a complex historical outcome and is exercised by photographs only within particular historical relations'. Barthes is therefore accused by Tagg (1988, 5-11) of erasing the history of the image and the complex negotiations that shape how the photograph is read within the broader discourses of evidence, knowledge and representation.

Operating outside of the technological developments and institutional frameworks that for Tagg (1988) produce photography, Barthes (1981) instead remains patiently focused on the reception of the image and the close relationship between the spectator and the photograph. However, despite Barthes' statements throughout the opening of *CL*, this work does not articulate an ontology of the image. Barthes' dedication in the latter half of *CL* to the famously unseen *Winter Garden Photograph* of his deceased mother, pulls the

theoretical basis of the text away from a universal definition of the image and towards an embodied and singular phenomenological account of the workings of desire in the photograph's reception. Whilst Tagg may be correct to argue against Barthes' self-described aims of finding the essence of photography, the body of text that constitutes *CL* offers a different category of understanding, one that focuses on the relationship between photography and desire. Barthes is accused of erasing the history of photography in his presentation of a naturalised and realist account. However, it can equally be argued that Tagg erases Barthes desires in favour of critiquing the text on neutralised grounds.

As Victor Burgin (1982) argues, we must contend with *CL* on the phenomenological terms upon which it is written. The essence or eidos of photography that Barthes attempts to uncover is not contained in the image itself, but in the reception of the image by a desiring spectator. The punctum that Barthes describes is not held firmly on the representational plane but reaches out of the image to 'prick' the viewer. We must therefore read the wounding effects of the photograph as held in the physical and embodied relationality of the photographic encounter. Burgin (1982) argues that *CL* is indicative of Barthes' broader struggle to negotiate between critical and personal subjective perspectives, of which the former is further compounded by fractures between the discourses of phenomenology, semiotics and post-structuralism. For *CL*, as with other writings by Barthes, the poetic and the critical aspects of the text cannot be separated easily, his project continually contending with the concept of language both as the object and as the instrument of his writings (Elkins 2012, 11-12). Barthes is intractably bound within *CL*; his desires, his body and his mother are all key focal points in his analysis of photography. Consistently moving between analytic and personal perspectives, the edges and boundaries of each are deeply frayed. To describe these tensions crudely, *CL* operates between the spaces of what photography is

and what Barthes wants photography to be, without ever offering a clear resolution or boundary between these perspectives. Whereas Tagg (1988) critiques the mysticism with which Barthes surrounds the image in his attempt to discover what unites photography, it is precisely the elision between these two modes of discourse that creates the space for *CL* to become a performative dialogue between Barthes and the image. Barthes' own desires and feelings slide over his more distanced or 'objective' insights without ever resolving this tension. Rather than presenting the type of coherent ontology of photography that Tagg critiques, Barthes offers a series of unresolved tensions – a factor that accounts in part for its longevity as a point of analysis and debate.

Barthes' (1981) use of the terminology *studium* and *punctum* furthers this economy of unresolved tensions and desires within photography. To briefly describe their relationship, the studium is perceived by Barthes (1981, 26) to be those parts of the image that are understood by the photographer and spectator through a shared set of historical and cultural references, and of a more specific shared understanding of photographic codes and conventions. The studium is what the photographer intends on showing the viewer. By contrast, the punctum is that which pricks the viewer in a more subjective and emotional manner. The following passages from *CL* partially demonstrates Barthes understanding of this relationship:

> It is by *studium* that I am interested in so many photographs, whether I receive them as political testimony or enjoy them as good historical scenes: for it is culturally (this connotation is present in *studium*) that I participate in the figures, the faces, the gestures, the settings, the actions.

> The second element will break (or punctuate) the *studium*. This time it is not I who seek it out (as I invest the field of the *studium* with my sovereign

consciousness), it is this element [the punctum] which rises from the scene, shoots out of it like an arrow, and pierces me.

(Barthes 1981, 26)

That Barthes identifies the co-presence of these phenomena within some images, does not extend to his viewing them as necessary or always present within an image. Instead, often an image is 'all studium', and contains no element that 'pricks' or 'is poignant' to him (Barthes 1981, 41). Barthes is not describing a dialectic that is always present in the image but is constructing a terminology for identifying the tensions within the photograph that are produced by its multiple readings.

Barthes' faith in the indexical relationship between the image and its referent may be considered a shortcoming in the terms of a structuralist critique of the photographic image, however, it also elucidates part of photography's enduring mythology and the role of desire in understanding photographs. Patrizia Di Bello (2008) reflects on these structures of desire in relation to indexicality through the term *disavowal*. For Di Bello, looking at how the culture and materiality of photography operates through the desire of indexicality is more productive than looking to the formal or intrinsic characteristics of the medium:

Rather than a philosophical investigation of essence and ontology, it might be more productive to explore the structures and desires – cultural and social, conscious and unconscious – that have been in place to engender and ensure the hold of indexicality on our conceptualization of photographs, even in the face of technological and cultural changes.

(Di Bello 2008, 147)

For Di Bello (2008, 148), the historically formed material and cultural practices of photography have cultivated a disavowal of the constructed nature of the image, enabling the fantasy of indexicality to flourish. The quality of indexicality speaks as much to the desires that the photographic image produces as it does the image itself. The question is therefore not a case of what is in the image, but what the viewer - or theorist - desires there to be. As Kember (1996) argues, faith in the image speaks to something beyond a rational investment in the evidential force of photography. This faith speaks to the affective and unconscious desires that traverse the distinction between the exterior world and the interior world of the subject: 'It is a faith which precisely cuts across our more rational investments in, and our knowledge about, the truth status of photography – because it is placed in a real located ultimately in our own interior worlds rather than in an exterior one' (Kember 1996, 161). Taking *CL* as an investigation of these desires, held within Barthes' own need to connect with his mother, photography becomes the desire to physically touch the object, to efface the subject/object distinction in a 'fluid continuity' (Young, cited in Di Bello 2008, 149). These desires, whilst developed in historically and culturally specific contexts, are shown by Gillian Rose (2010) to have been maintained in practices with the digital image. Regarding her own recent ethnographic work, Rose states (2010, 32), 'I would suggest, the importance of being able to touch and handle photos for some of my interviewees. It's almost like touching the actual person.'

Barthes (1981) and Di Bello (2008) both write of the active role of the spectator in engaging with the photograph; the image is never passively consumed but is caught up in an active process of negotiation between individual beliefs and desires and the socio-materiality of the photographic object. They also both emphasise a degree of fluidity outside of the representational subject/object relationship that has often constrained our understanding of the photographic.

Whereas the optic technologies of perspective that underpin photography might be said to constitute an oppositional logic of seeing subject and observed object, the desiring spectator seeks to overcome this separation. The photograph becomes what Kember (1996, 160) describes as a 'transformational object', in which a shift occurs in the relationship between subject and object, self and other, as 'the shadow of the object, falls on the subject.' Barthes (1981, 80), taken as the exemplary desiring spectator, continually seeks to overturn the separation imposed by photography's technological and epistemological origins: 'From a real body, which was there, proceed radiations which ultimately touch me, who am here'. As such, the immediacy of our connection to photography flows not from the ontological indexicality of the image, nor a generalised set of photographic codes and conventions, but is formed through our desire to efface the separation between ourselves and the image. For Di Bello (2008), our disavowal of the symbolic and technological facets of the image is a prerequisite for this fluidity between subject and object. The constraining lifelessness of representation is repudiated in favour of a sensual performance of intimacy.

The intimacy and immediacy felt towards the image is not an inherent quality of the photographic object, even though it would be facetious to deny within the substance of photography the immanent potential for these performances of desire. As Bolter and Grusin (1999, 21) argue, the photographic is always to an extent striving for immediacy, to transparently present the real and to 'conceal both the process and the artist' necessary for its production. Through this play of concealment and disavowal, photographic mediation can be understood as the unfolding production of desire and the progressive congealing of these desires within the image. There is, as such, an uncanny resurfacing of the fetishism of the commodity within the image, but where the value accruing within the photograph, born of our affective labours, is of a

different register to that described by Marx (1976). Through Di Bello (2008) and Barthes (1981), it becomes apparent that the meaning of vernacular photography is contained as much in the economy of circulating desires that surround the image, as it is in the fabric of the image itself. As the apparatus of photography is remediated through smartphones, social media and photo-sharing sites, we must therefore examine how these desires are also remediated and reconfigured.

Anywhere – Everywhere: Photography as Everyday life

According to Kris Cohen (2005), with the development of the photoblog, desire comes to be distributed throughout the photographic process, becoming constellatory in nature. Rather than being connected solely to the emergence of the image, there are desires and motivations present in all parts of the photographic process that each reinforce the other. As Cohen (2005, 884) argues, photographic theory has tended to arc, 'and arcs quickly […] from *the act* of taking the photograph to *the photograph* itself.' This swift arcing elides the tangled desires and motivations that are invested in photography; the image might be captured for the pleasure of using the camera, to be able to update our blog or profile, or to just spend time with friends: 'Photography produces photographs as effects, but isn't superseded by them and doesn't even seem to be the necessary cause of them' (Cohen 2005, 896). For Cohen, the constellatory nature of desires is made apparent through the insertion of photoblogging into the orbit of photography:

> This is how I want to describe it: the photoblog collapses the activity of photoblogging with the activity of photography without collapsing (1) the space that separates the making of photos and the blogging of them, or (2) the time that separates these activities […] or (3) the desires and pleasures

that energize both activities. Photography and blogging become interarticulated.

<div align="right">(Cohen 2005, 896)</div>

Of course, the photoblog is not without its antecedents in this regard. For example, through the form of the family album, the desire to construct and extend the narrative of the family motivated the act of picture taking far beyond the emergence of any individual image (Van Djick 2008). However, Cohen's discussion is useful for how it theorizes the distributed desires that run through photography's constitutive practices and technologies. This runs contrary to other theories of photographic desire, proposed both historically (Barthes 1981) and contemporaneously (Cassar 2012), which often take the emergence of the image as the ultimate raison d'etre of photography. Our tendency to overlook the desires held within the practice of photography can be traced to an extent back to Barthes (1981, 10) and to his self-confessed 'impatience' with taking photographs. With the prevalence of smartphones and the emergence of a situation in which 'we are all photographers now' (Zylinska 2016, 7), it is imperative that we take seriously the distributed nature of desires within photography. Investments in photography (both libidinal and financial) do not occur solely in the image, but also operate in the desires for capturing and sharing the image, processes that are always already inter-articulated with the emergence of the photograph.

The proliferation of smartphones, social media and photo-sharing sites has not only generated a deluge of photographers and images, but has fundamentally transformed how we interact and communicate through photography. As Martin Lister (2013) argues, we find the photographic image increasingly accompanied by others, arrested not as a singular or unique object, but always in multiple. Each image is always part of a stream in which, 'We anticipate that

behind an image we have alighted on there is another waiting or there is one, seen earlier, to be returned to. Rather than absorbing us in a singular manner each image seems to nudge us toward another' (Lister 2013, 8). Images jostle and compete against each other, creating a more 'fleeting or distracted' mode of viewing than 'imagined by traditional theories of photography' (Lister 2013, 8). This distracted mode of viewing is accompanied by a transformation in the form of images we create. As Susan Murray (2008, 155) argues, the confluence of digital imaging and photo-sharing has cultivated a new aesthetic of the ephemeral. Under this framework, photography has shifted from a preoccupation with immortalizing the past and the memorialization of significant life events, to become a more transient medium concerned with the small and the mundane (Murray 2008, 151).

Photography's hybridity with the mobile phone has meant that the camera is always near to our bodies, by our side ready for everyday, discursive interactions. No longer is the camera only used for solemnizing the high rituals of family life that Bourdieu (1990, 24) described, as we come to capture and share our current and fleeting impressions of the world. The transient ephemerality of contemporary photography is also analyzed by Daisuke Okabe (2004, 12), who investigates the role of photographic communication in creating a sense of 'distributed co-presence'. In Okabe's (2004, 5) analysis, the practice of camera-phone photography is no longer concerned with creating images for posterity or longevity, but is engaged in the casual snapping of images which create 'a street level everyday visual viewpoint'. The use of the camera phone transforms the role of photography into a medium for communicating an ambient co-presence with physically absent friends and family. For both Okabe (2004) and Murray (2008) the loss of the past becomes an increasingly diminished force in driving our photographic practices and desires; the nostalgic aesthetic of Kodak fading behind the temporal narratives of the

everyday that digital photography offers. For Murray (2008, 156), this shift is linked to an implicit waning of belief in photography's ability to 'hold onto certain moments', exacerbated by the transition to digital technologies. The fraying link between photography and loss (of the past, of loved ones, of youth) indicates not only a loss of faith in the photographic, but also signals a shift towards something else; a photography newly alive and immediate, unburdened from its associations with death and mourning.

Murray's (2008) description of camera-phone photography is echoed in Joanna Zylinska's (2016, 16) call to challenge the association of photography with death and mummification and to consider the active role of photography in 'cutting and shaping' life. Zylinska (2016) uses the term *photomediation* to cut across the boundaries between different photographic technologies, emphasizing the commonality between 'various kinds of light-based practices', and questioning the separations between analogue and digital, the still and moving image, and social and artistic practices. The term photomediation also offers a challenge to think about the temporal and processual dimensions of photography, moving away from seeing the media as a collection of objects or texts to be read or understood in isolation. Rather than viewing photography as a discrete medium, the framework of photomediation aims to foreground photography's 'embeddedness in the flow of time, duration and hence life itself' (Zylinska 2016). The constellatory nature of photographic desire that Cohen (2005) proposes must therefore be supplemented by a recognition of the investment of desires in the processual and temporal movement between these points.

This concept of photomediation is developed out of Kember and Zylinska's (2012, xv) earlier work on the concept of mediation, understood not as a transparent intermediary layer 'between independently existing entities', but

as 'a complex and hybrid process that is simultaneously economic, social, cultural, psychological, and technical.' Photography is not as such a medium of representation, but is a transformative and entangled set of processes that is both of the world, and shapes our relation to and separation from the world. As Kember and Zylinska (2012) argue, through Karen Barad's concept of the *cut*, there is a vitality and agency to photography. For Kember and Zylinska (2012, 75), 'the practice of cutting is crucial not just to our being in and relating to the world, but also to our *becoming-with-the-world*, as well as *becoming-different-from-the-world.'* Photography, understood through these concepts, should not be only associated with the embalming of time, but with the making of meaningful cuts in the flow of mediation, temporarily pausing and stabilizing the multiple and overlapping streams of data that constantly threaten to overwhelm us. For Kember and Zylinska (2012, 82), the cut is not an a priori useful or positive action, and the question therefore becomes 'What does it mean to cut well?' The division of photomediation into photographs is only made significant if the cuts we make reconnect to the durational qualities of life, enabling the creative possibilities of questioning the boundaries between ourselves and the world (Kember and Zylinska 2012, 82).

With Kember and Zylinska (2012), we are left with the potential for reconnecting photography to life through a play of process, movement and duration that transforms our relationship to the world. However, this potentiality is set against a backdrop in which the apparatus of photography is increasingly commodified, and the ability to 'cut well' is set against the commodity's demand for us to cut and reshape our subjectivity in line with its own needs and desires. As Beller (2006) argues, the connection of perception with production has caused a retooling of the subject as fragmented intensities of desire, as the image comes to speak for itself. The question therefore becomes from where and for whom do we cut? It could be argued that the creative

potential of photography to actively shape and carve life into new and radical configurations has already been actualised, only not via the ethical imperative to 'cut well' described by Kember and Zylinska, but through the processes of reification; our cuts in the flow of mediation not reconnecting to 'the horizon of duration', but instead producing fragmented and reified fetishes that are cut off from us as the deferred desires of the spectator. If photography is a vital part of mediation that offers the possibility of actively shaping and differentiating within the world, it is essential that we understand the complex agencies at play in forming our desires and beliefs of the photographic. This is not to deny the creative potential of photography in forming new subjectivities and configurations, but to take seriously the role of commercial agents in sanctioning which cuts are deemed acceptable and which cuts remain possible for intervening in the flow of mediation.

This literature review has examined the key pillars of theory that inform the analysis of the case studies that follow. Returning to Marx (1976) and Lukács (1971) has been essential for understanding how the process of commodification is part of a broader reconfiguration of social and material relations that continues beyond the factory doors. When examining the entanglement of photography with capitalism, it is therefore vital not to look at the commodity form in isolation, but to the wider configurations of labour, productivity and value that photographic activity produces. This form of analysis has been performed by Smythe (1977) and Fuchs (2014), who both examine the integral role of the media in the production and reproduction of material relations under capitalism. Rather than viewing the media solely through the lens of its ideological content, or as an auxiliary appendage to the functioning of capitalism, these accounts examine how the media operate as modes of production in their own right. Combining these materialist analyses with a processual understanding of mediation, Beller's (2006) concept of the

cinematic mode of production has revealed the biopolitical agency of the media in reorganizing our sensual apparatus. As Kember and Zylinska (2012) have argued, via Stiegler (1998) and Deleuze (1992), media technologies are not externalities that we navigate, but a vital and constitutive part of how subjectivity is formed. The productivity of vernacular photography is linked at one level to the commercial imperatives of organizations that seek to generate value through commodities and commodifiable practices. However, at another level, the processes of photographic mediation speak to a deeper reconfiguration of subjectivity, whereby our perceptions, desires and beliefs are aligned with the broader demands of capitalism. Drawing on the above theoretical pillars, the subsequent chapters aim to understand how these processes interact with and shape our everyday encounters with photography. Examining photography's circuits of labour and value, alongside the processual and productive potential of photographic mediation, the following case studies examine the extent to which photographic activity is captured by the demands of capital, and whether there remains the space for radical practices that offer alternative modes of becoming.

Chapter 1: Kodak and the Mass Production of Vernacular Photography

In a thesis ostensibly concerned with the contemporary landscape of vernacular photography, it may seem peculiar to begin by returning to the turn of the twentieth century and to that most famous of photographic corporations. However, the story of the Eastman Kodak Company ('Kodak') is essential for a number of significant reasons. For a major part of the twentieth century, vernacular photography was deeply imbricated with the commercial and ideological imperatives of Kodak. As one of the most dominant American media companies of the time, Kodak played a singularly important role in shaping the landscape of photography in the USA and beyond (Collins 1990; Slater 1995; West 2000; Sarvas and Frohlich 2011). To speak of vernacular photography during this time is to speak almost synonymously of Kodak and the technologies they developed in order to expand photographic markets. During this period, forms of the word Kodak even entered into the common lexicon, with terms such as *kodaking*, *kodakers* and *kodakery* colonizing the discourse of photography (Fineman 2004), a play of language cultivated and encouraged by Kodak's own advertising, such as 'The triumph of Kodakery' (1901a) and '"Vacation" means more if you Kodak' (1903a). Whilst Kodak have receded from prominence in recent years, the shadow they cast remains over everyday photographic practices today, with the popular imagination still coloured by the vision of photography they promoted.

Kodak also marks the most significant point of vernacular photography's conjunction with the processes of commodification and industrial capitalism. As Risto Sarvas and David Frohlich (2011, 80) argue, 'The Kodak model became the basis for snapshot culture, to which it gave birth, and the role of Kodak and

the business interests of Kodak were integral to the practices of snapshooters.'
The story of Kodak is not universal but has particular relevance to the story of
capitalism in the USA and the west. Within this story, framing vernacular
photography as a commodity form is far from being an abstraction, but speaks
to the material and cultural conditions of production that Kodak relied upon
and expanded. George Eastman deployed methods of proto-Fordism and
Taylorism in his manufacturing plants, breaking the labour process into small
tasks (many unskilled) and conducting time and motion studies on his
employees to ensure efficiency of movement in the factory (Collins 1990).
Simultaneously, he moved advertising campaigns from the technical
catalogues of equipment designed for professionals and serious amateurs, and
placed them into magazines of popular culture, chosen for their specific
demographics and promotion of particular lifestyles (West 2000). Under
Eastman's control, Kodak aligned itself closely with the spirit of twentieth
century American capitalism, embodying the ideology of continued and
exponential growth: 'The manifest destiny of the Eastman Kodak Company is
to be the largest manufacturer of photographic materials in the world, or else
go to pot' (Eastman, cited in Collins 1990, 81). From this vantage point, the story
of Kodak speaks not only to the commodification of photography, but also
more broadly to western capitalism in the twentieth century and the
relationships between industrial production, mass marketing and the
imperatives of consumerism.

Kodak's story provides vital historical context for understanding the heavily
mediated environment we find ourselves in today. On the one hand, there are
many consistencies between the contemporary landscape of vernacular
photography and the practices promoted by Kodak. For example, as the camera
closely accompanies us everywhere we go via the smartphone, there are echoes
of Kodak's injunction to 'Take a Kodak with you' (Kodak 1901b), and that the

moment for photography is 'Anywhere – Everywhere' (Kodak 1915). At the same time, the ruptures between Kodak's vision of photography and our current situation are also telling. Kodak's campaign to 'Keep the Story with Kodak' (Kodak 1922b) finds itself in stark contrast to the transitory and fleeting modes of photography that are often found in networked culture (Murray 2008), exemplified by Snapchat's statement that 'There is value in the ephemeral' (Snapchat 2012). By providing a close analysis of the material and discursive structures produced and promoted by Kodak, a complex picture emerges of its relationship to contemporary vernacular photography that features consistencies, ruptures and echoes. By tracing these threads, the aim of this chapter is to offer a partial genealogy of vernacular photography, or what Foucault (1977, 31) referred to as a 'history of the present'. Such an account helps to secure the subsequent chapters, concerning photography's more recent history, against a false dichotomy between the analogue and the digital, whereby newer technologies are read against a simplified and reductionist vision of the past (Lister 2013). But perhaps more significantly, conducting this analysis affords the opportunity to recognize more precisely those aspects of vernacular photography which have been challenged in recent years, enabling the ideological and commercial imperatives invested in our apparatus to be more readily identified and analyzed.

Of the case studies discussed in this thesis, Kodak submits most readily to a Marxian materialist analysis, remaining at least partially within the model of industrial capitalism that Marx's work critiqued. In addressing the central research question of how vernacular photography is utilized as a means of generating value, there is a temptation therefore to remain on the Marxian conceptual terrain of productivity and commodification. However, as per the overarching methodology of this thesis, examining how material circuits of labour and value intersect with the processual and temporal dynamics of

mediation is essential for gaining a deeper understanding of how vernacular photography operates productively in everyday life. As this chapter will argue, the agency of Kodak went beyond producing a series of interlocking mass-produced commodities, and extended to the production of new modes of subjectivity centred on the concept of 'positive growth' (Holland 1991). Whilst the symbolic value of the image played a significant role, the processual dynamics of desire that Kodak activated were vital in cultivating ways of becoming that were commensurate with the prevailing logics of twentieth-century commodity capitalism. This chapter therefore demonstrates how the productivity of vernacular photography has always exceeded the boundaries of representationalism, even when its defining objects were the symbolic commodities of Kodak culture. As this thesis moves towards the present day in the following chapters, this argument will be central to understanding how developments in networked and mobile media do not indicate a drift away from an ontologically secure photography, but a continuation of the deepening entanglement between photographic mediation and everyday life that Kodak had already begun. The proposition that photographic mediation operates as a mode of production is understood in this thesis as both a reconception of photography's ontology and as a historical-material feature of photography's agency under capitalism. The following discussion aims to illustrate these two dimensions by outlining how the creative forces of mediation came to be instrumentalized within Kodak culture.

The Triumph of Kodakery

From the handful of photographs, produced by professional photographers and placed on prominent display within the home, Kodak repositioned photography as an integral aspect of family life, enabling people to capture themselves with the camera en masse for the first time. Families, homes,

gardens, leisure activities, vacations, day trips and children at play, amongst a litany of other events and objects, became the visual tropes of a new class of photographers: the *snapshooters* (Chalfen 1987). Whereas the photograph had previously been produced only at exceptional family events (e.g. weddings, new births) or within the space of the photographer's studio, a visit to which would have been an exceptional event itself (Vivienne and Burgess 2013, 280), Kodak expanded the reach of photography into a far wider range of contexts and moments. A new sense of kinship and social familiarity between photographer and subject facilitated the capture of more intimate moments of family life, having a profound effect on how the private sphere was understood, and challenging the definition of what constituted an appropriate photographic subject (Slater 1991). The increased mobility of the camera changed the locative dynamics of photography; from going to the camera, to the camera that went with the family. In the imperative, yet open phrase of 'Take a Kodak with you' (Kodak 1901b), we see the offer of a newly freed photography, able to extend its presence by accompanying the family to places and events not quite yet codified.

Crucial to Eastman's strategy was changing the meaning and function of photography; of making the camera desirable to the American family through producing new reasons for consuming photography. Eastman recognized early in the twentieth century the need for both the alienated labour of industrial production and what Debord (1983, 51) calls 'the fabrication of pseudo-needs'. Eastman spoke for example of the necessity for educating the public regarding their needs for photography and of creating new markets and desires where previously there were none (Collins 1990, 148). Rather than induct a new class of photographers into the pre-existing frameworks and discourses of photography, Kodak assembled a new structure of photography around them. From a technical perspective, the knowledge and labours of photography were

redistributed away from the photographer and into an extended apparatus of snapshot photography (Slater 1995). The operation of the camera was reduced to simple discrete actions, with the film preloaded into the camera and the focal length, aperture and shutter speed set in a fixed relationship that was designed to reliably produce legible images. Beyond the camera, Kodak's apparatus included the factory, in which negatives would be extracted, developed and printed using the techniques of mass production (Cruz and Meyer 2012). As Reese Jenkins (1975, 18) explains, under Kodak the photographic industry went from being 'characterized by decentralized, handicraft modes of production in 1879 to one characterized by centralized, mechanized modes of production in 1899'. This programme of simplification, designed to expand the photographic market through a reduction of the skills and knowledge required of the photographer, created new dynamics of visibility and invisibility, as the processual nature of photography came to be hidden behind the black box of the camera (Sarvas and Frohlich 2011; Cruz and Meyer 2012).

The photographic space that Kodak entered was not insulated from the broader cultural, political and economic context. Since the earliest moments of photography, it had been implicated in the dynamics of capitalism that were already pervasive in the west. In the decades preceding Kodak, photography had already enjoyed commercial successes with inventions such as the Daguerreotype, Tintype and the carte-de-visite (Sarvas and Frohlich 2011, 25-43). Outside of small photographic studios, commercial photographers operated at fairs, carnivals, beaches and sidewalks, selling photographs of the family at leisure as a souvenir or memento of the occasion (Marian 2012). In these practices, the photograph was viewed as a saleable commodity, with low costs, durability and ease of production serving as key factors driving its popularity and profitability (Sarvas and Frohlich 2011, 29). These technologies also introduced the family to the idea of the photographic image as a desirable

object, embedded within a far broader pattern of consumption than previous modes of portraiture (Marien 2012, 60). Following the Tintype and Ambrotype, the carte-de-visite extended the availability of personal portrait photography to an even greater portion of the population.

The carte-de-visite, or 'card photograph', which reached the height of its popularity between the 1860s and 1880s, was a photograph that was printed cheaply on the back of a visiting card, which was then often exchanged between friends and family (Marien 2012, 83). The production of carte-de-visites was significantly cheaper than its contemporaries for two major reasons; the materials it used were significantly less expensive, and the apparatus afforded developing up to eight separate exposures on a single plate. In this way the carte-de-visite formed a new relationship between photography and mass production, a process that would be extended by print establishments breaking up the production process into separate tasks (some skilled, some unskilled); a division of labour that made production more efficient and further reduced costs (Sarvas and Frohlich 2011, 38). One side note regarding the carte-de-visite that is pertinent to this chapter, is the growth of family albums that emerged out of *cartomania* (the craze for collecting, exchanging and displaying carte-de-visites). Carte-de-visites of the family, but also of 'friends, celebrities, royalty, statesmen, and well-known landscapes and scenes' were gathered together in the family album for their protection (Marien 2012, 83), which in turn became a culturally significant object that was often decorated and embroidered, taking a focal point within the home (Sarvas and Frohlich 2011, 39-40).

These brief examples of earlier photographic technologies resituate Kodak within a deeper narrative of commercial domestic photography than is often present in historical accounts (Collins 1990). The photographic landscape that Kodak entered was not an independent arena operating separately from the

pervasive logics of capitalism, but was already intimately connected to multiple overlapping commercial interests. Geoffrey Batchen's (1997) genealogy of photography finds at its centre the desire for orchestrating particular epistemological arrangements, for example between nature and culture, subject and object, the modern and the romantic. According to Batchen, these desires both prefigure and accompany photography's development. This brief discussion of photographic technologies preceding Kodak, suggests that alongside these epistemological concerns, we might also read photography's history and expansion through the lens of commercial imperatives and the desire for increasing rates of photographic productivity. Batchen may be correct to argue that the originary conception of photography emerges out of the cultural milieu, as a desire to produce new modes of knowledge, yet it is also clear that the desires of capitalism swiftly became imbricated with photography and were invested in particular directions of travel for its development.

Kodak emerged within a technological and cultural context in which photography, consumerism and mass production were already present factors. Their significance arises in part from how these forces were gathered together and interarticulated at each stage of the photographic process. For Kodak, the logic of commodification and mass production went beyond the image-object (as in the carte-de-visite) and was extended to encompass the total process of photography. In what Slater (1991, 52) terms the 'first complete marketing concept of photography', Kodak opened the capturing of images to the processes of commodification, with 'kodakery' becoming an activity both mass-produced and mass-consumed. The camera of Kodak held a particular significance in how photography was framed within this logic, but only as part of a more complex and extended network of consumption that included photographic film, developing and printing services, and the instructional and

promotional material that prescribed particular practices of photography (Cruz and Meyer 2012).

As significant as the mass production of these objects, was the mass production of images that occurred through them. To consume Kodak was also to produce Kodak culture (Chalfen 1997), to participate in the creation of symbolic narratives that would add value and meaning to family life through a particular ideological frame. Creating images meant navigating the ideologies that had been instilled within the photographic apparatus both materially and discursively by Kodak, who held a particular vision of domestic photography that drove both their advertising campaigns and the affordances and restrictions of the cameras they designed. These ideologies and affordances will be discussed in greater detail later in this chapter. They are raised here, however, to stress that Kodak transformed the productive nature of photography by making fundamental changes to the process of photographic mediation.

As discussed in the literature review, photographic mediation can be understood as the making of cuts in the temporal flow of matter; of producing differences and boundaries (Kember and Zylinska 2012). The radical potential of photography occurs in the possibility of making cuts that critically and creatively intervene in the temporal flows of mediation, and also in the way these cuts are sutured back in order to generate new connections and disjunctions. Yet the possibilities of mediation appear as prefigured within the snapshot model of Kodak and refolded back into its modus operandi. On a technical level, the type of cuts available were restricted by an apparatus that focused, quite literally, in the middle-ground, centring and enclosing the subject within the frame (Chalfen 1997). As important as these technical affordances, was the ideological promotion of particular ways of practicing

photography; definitions not only of appropriate events and subjects, but of appropriate desires and needs that photography could fulfil. Photography offered the possibility of transformation, but only within a teleological framework of producing the right kind of family, crystallized into togetherness through participating in modernity (Slater 1991). In this way, Kodak sought to foreclose the radical possibilities of photography, by directing this energy towards a standardized range of images that reinforced the value of leisure and consumption. Examining these ideas in greater detail, the following section details the strategies used by Kodak as they rose to prominence, including both the technological innovations and promotional material they used to construct a comprehensive vision of vernacular photography. By analyzing the relationship between the technological and discursive vectors of Kodak's operations, this section will demonstrate how these aspects were defined in reciprocity, with the aim of affixing photography to a particular mode of mediation.

You press the button…

Before entering the mass market of snapshot photography, George Eastman's focus had been on the business of producing gelatin dry plates, a proposed solution to the practical difficulties of wet plate photography. The collodion based wet plate photographic process required the preparation, exposure and development of the photograph all within a brief period of time, thereby requiring the photographer to travel with a range of chemicals and equipment (Jenkins 1975; Sarvas and Frohlich 2011). As dry plates were far more stable, they could be stored for a considerably longer duration, which enabled their preparation to take place in advance of shooting and their development to take place at a later stage. Dry plates meant greater mobility and flexibility for the photographer and the proposition of mass production in a centralized location

for Eastman, who as early as 1878 had begun to investigate machine production (Kodak 2017). Despite his initial successes translating into a considerable share of the dry plate market, Eastman could not generate a substantive profit, owing to a saturated market that drove prices down through competition and overproduction (Sarvas and Frohlich 2011, 49). Eastman therefore turned instead to investigate newer developments in film photography and the potential for its mass production. As Sarvas and Frohlich (2011, 50) state, 'Eastman's objective became to invent and patent a complete system of machinery, products and processes for film photography; if successful, the whole business of film photography would be covered by his company.'

In the early 1880s, having found professional and amateur photographers less willing than expected to take up film and forego the expertise they had developed with glass plate photography, Eastman pivoted instead to a new potential mass market of photography (Jenkins 1975; West 2000). Beginning with the Kodak camera in 1888, Eastman cultivated a new market of consumers without expertise or knowledge of the photographic arts. The form of snapshot photography that Kodak developed was distinct from the professional or amateur markets, who Eastman had struggled to convince of the virtues of his new system. Vernacular photography has been defined previously as the 'grab-bag left-overs' of photography that cannot be categorized elsewhere, such as within the arts or journalism (Batchen 2000a, 229). And yet for Kodak, the vernacular photographers, or *snapshooters*, appear as a specially cultivated market necessary to the commercial ambitions of Eastman.

Eastman's proposition was for a complete system of photography in which the technical aspects would be taken out of the hands and sight of the photographer. The requisite knowledge and training necessary to engage in photography was to be radically reduced, as signified by Kodak's most famous

of lines, 'You press the button, we do the rest' (Kodak 1890). Kodak's system of photography went beyond the design of the camera, extending to the type of film they provided, the mass production of images, and the use of an existing postal network for the sending off and receiving back of developed images (Cruz and Meyer 2012). In short, alongside technical simplifications in the apparatus of photography, Kodak created new divisions of labour, in which the consumer would only be engaged for a small portion of the overall process of photographic production. As one early advertisement promoted, 'A division of labour is offered whereby all the work of finishing the process is done at the factory where the camera can be sent to be reloaded. The operator need not learn anything about photography' (Collins 1990, 56). In deploying this network of processes, Don Slater (1991) argues that the central marketing concept of Kodak was one in which the user never engaged with, or even saw, the film from which the image was produced. In this way, Eastman simultaneously demystified and remystified photography, making it approachable and accessible to a broader audience, whilst rendering invisible the mechanics and chemistry of its operation.

As Douglas Collins (1990, 99) writes, a key strategy of Kodak was to 'average out the difficulties of photography and fabricate a tolerant piece of equipment out of the sum of those figures.' This *averaging out* of photography's difficulties meant threading a line between various aspects of the camera and the film that would produce clear images, without the photographer having to pay particular attention to any of these individual aspects. As one early advertisement proclaims, 'A simple mechanism perfectly made – freedom from detail in operation – these qualities enable the Kodaker to give his entire attention *to taking the picture'* (Kodak 1900). To detail some of how this line was thread, Kodak's cameras were equipped with a fixed aperture and focal length, so that pictures could be taken easily and quickly by simply pointing and

shooting (Sarvas and Frohlich 2011, 48). Concurrently, the film itself was designed to have a wide latitude, ensuring that a legible image could be produced without being precise about lighting, whilst still being sensitive enough to produce images with a quick shutter speed (Collins 1990, 223). Most cameras also came adapted for roll film, enabling the photographer to shoot continuously without having to open the camera between shots. The combination of these elements enabled Eastman to describe the camera as having been reduced to 'three motions', thereby opening the market of photography to a new cohort of consumers without previous knowledge or indeed the motivation to develop it. As Eastman writes in *The Kodak Primer*:

> Yesterday the photographer, whether he used glass plates or films, must have a dark room and know all about focusing, relations of lens apertures to light and spend days and weeks learning developing, fixing, intensifying, printing, toning and mounting before he could show good results from this labour. Today photography has been reduced to a cycle of three operations: 1: Pull the String, 2: Turn the Key, 3: Press the Button.
>
> (Eastman, cited in Collins 1990, 59-60)

This statement frames the reduction of prerequisite knowledge and equipment as providing new levels of freedom and convenience to the photographer. Yet implicit in this convenience is the closing down of potential lines of exploration, limiting the degrees of control the photographer had over the photographic process. The extended apparatus of photography that Kodak produced removed the possibility of human intervention at particular moments in the photographic operation, as they came to be replaced by mechanical and industrial processes. Consumers were free from having to learn the techniques of photography, but they were also freed from the option of doing so. For example, the fixed-focus lens of the camera meant only subjects at a distance of

at least 4 to 5 feet would appear in focus (depending on the particular model), precluding close-up photography, experimentation with depth of field, and more complex interplays of background and foreground. The subject was forced out into the middle-distance of the frame or beyond, with the surrounding scene called upon to form a significant part of the composition. Techniques considered professional, such as the use of soft focus, were placed out of reach, as were most of the aesthetic effects of either pictorialism or modernism. For Eastman's *snappers,* the marvel of capturing the scene was to offer more than enough pleasure to sustain an engagement with photography. As Collins (1990, 60) writes, 'The Kodak camera system was so compact, economical and deceptively simple that it absolutely delighted the average consumer.'

In their discussion of control in the photographic process, Edgar Gomez Cruz and Eric Meyer (2012) articulate a similar argument, via the actor-network theory of Bruno Latour (2005) and John Law (1992). As they argue, Kodak embarked on the creation of 'quite literally, a "black-box"' (Cruz and Meyer 2012, 209), that dramatically reduced the possibilities of photography. Drawing on Law's (1992) notion that networks of actors (both human and non-human) form 'punctualisations', the apparatus of Kodak is shown as re-presenting the complexity of photographic production as a singular action performed with an enclosed box. Simplifying the activity of photography not only meant making it easier and more convenient, but also placing limits on the creative possibilities it could offer (Cruz and Meyer 2012). By threading a line between the various components of photography, Kodak obscured a complex network of relations behind a singular object. The obscuring of such relations subtly shifted the horizon of possibilities for picture making, as the range of available visual forms were limited by a system designed with particular images in mind.

The limitations imposed by this programme of simplification were not only of a technical nature but coalesce directly with the ideological vision of Kodak. Kodak's strategy of simplifying photography involved an embodying of particular values within the camera, and indeed, the complete system of photography. Firstly, quicker shutter speeds and greater film sensitivity reconfigured the temporality of photography. These developments cultivated a more dynamic and playful approach to photography that moved it away from the stiffness of Victorian portraiture, whilst simultaneously inviting the camera into the natural light of the outdoors (West 2000). Through the concepts of play and the outdoors, photography forged an association with leisure time, vacations and day trips, together with the cultural significance that these activities held. Secondly, the focal range of the lens invited the subject into the frame at a degree of intimacy with the camera, whilst also keeping them at a distance, at risk of blurring into indeterminacy. Such technical constraints speak to a positioning of the camera within the social dynamics of the family; of a certain degree of intimacy and familiarity between photographer and subject, that nevertheless should not be exceeded. Photography under Kodak was designed to strengthen bonds of the family but was also invested in maintaining a conservative vision of familial structures (Prøitz 2011). We might see in the focal range a desire for bringing family members close together, but also keeping them at bay, maintaining a respectful distance between parents and children.

Finally, the focal length of the camera (the distance between lens and film) produced an aesthetic that flattened the plane of the image (Figure 3), creating what Kodak described as a 'pleasing aesthetic, distinctive from the perspective that the eye saw' (Kodak 1921). Whilst more ambiguous than the previous two examples, this flattening of the plane signals a sense of continuation with the perspectival logic of realist painting, whose depth was hung on the rationality

of the grid (Batchen 2000b). In this flattening, a continuity of the desire to contain and possess the object can be seen, as can the denial of a dynamism that might spill beyond the frame (Berger 1972). Each of these examples suggest deep connections between the technological and the ideological; between the design of the apparatus and the cultural values associated with it. The type of locations, activities and relations that would be captured through the lens, as well as aesthetic decisions about how these would be represented, are all to an extent prefigured in the apparatus of photography.

ABOUT LENSES

Fig. 14
This is a truthful rendering of the perspective that the eye saw from the viewpoint of the short focus lens.

Fig. 15
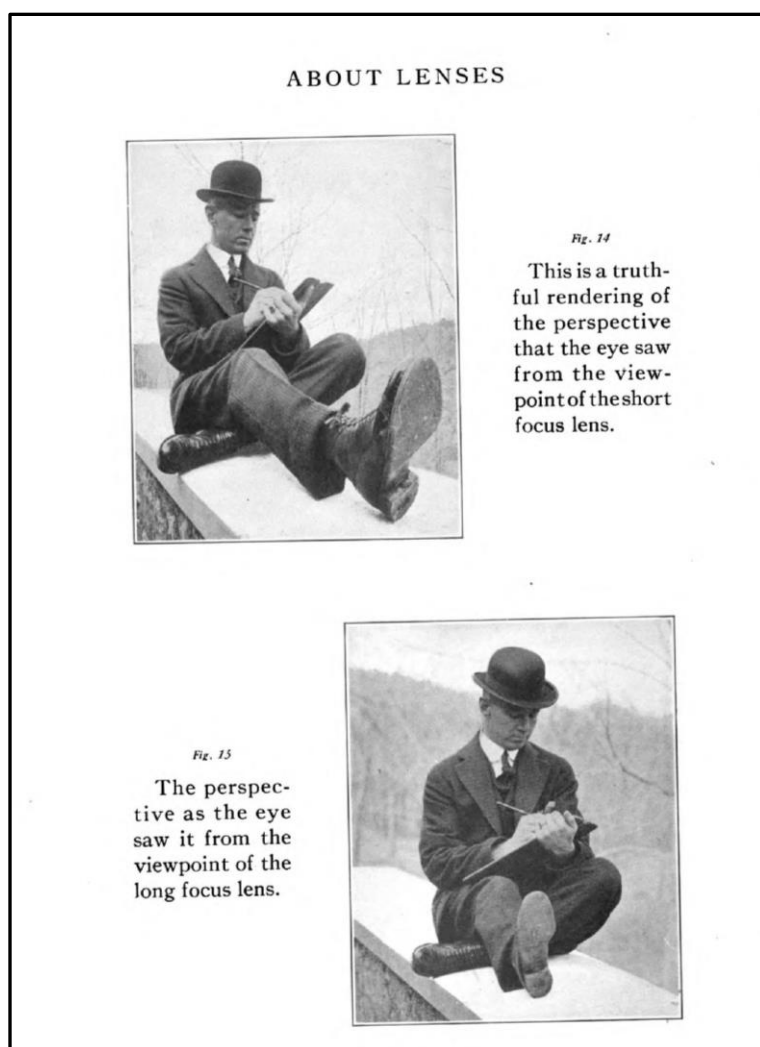The perspective as the eye saw it from the viewpoint of the long focus lens.

Figure 3. Excerpt from 'About Lenses', produced by the Eastman Kodak Company, 1921.

The limitations created through simplification focused the symbolic world of photography into particular styles and forms prescribed by its apparatus. To discuss the symbolic world of vernacular photography is not, as Richard Chalfen (1987) suggests, only to speak of the implicit social and cultural values constructed through a process of normalization, for it must also be considered how these values are embedded within and reciprocally reproduced by the apparatus of photography. As Vilém Flusser (2000, 26) argues, 'The camera is programmed to produce photographs, and every photograph is a realization of one of the possibilities contained within the program of the camera.' Of course, the apparatus of Kodak did not develop in isolation from broader cultural and ideological values circulating at the time. As other researchers have argued, the success of Kodak can be viewed as being predicated upon its connection to prevalent discourses of leisure, consumption and the modern family (Sarvas and Frohlich 2011; Slater 1995; West 2000). As the above analysis demonstrates, however, the apparatus of Kodak does not only reflect these values, but also plays an integral role in shaping and reproducing them, determining, to an extent, the symbolic world that is both consumed and produced through photography.

Constraints to the symbolic possibilities of the photographic apparatus, form only a part of the picture of how Kodak transformed the process of photographic mediation. Interrelated to these changes was a fundamental re-articulation of the photographer's role in the process of photography. Returning to Flusser (2000, 27), the photographer is posited as a 'functionary' of the apparatus, meaning that the photographer is bound together with the apparatus as a codependent entity. For Flusser, the camera is not a separate object that we externally control, but forms part of a dynamic unity with the photographer. In this dynamic, the world is seen 'through the camera and in photographic categories' (Flusser 2000, 59), whilst the apparatus becomes

reciprocally imbued with perceptual and affective significance. The complete system of photography that Kodak constructed should therefore be expanded to incorporate the photographer as a co-constitutive component. This conceptualization is not purely heuristic, for it resituates the figure of the photographer throughout the apparatus of photography, rather than as an independent force acting upon it.

The form and language of the user manuals that accompanied the camera accentuated this conception of the relationship between photographer and apparatus. Rarely alluding to any technical details of photography, these manuals reinforced the central role of the photographer within the apparatus, as the complexity of photography was reduced to a number of fixed positions and motions performed by the photographer's body. For example, an emphasis was placed on maintaining a certain distance from the subject, on making sure the sun was 'over the shoulder' of the photographer, and of holding the camera firmly and steadily (Kodak 1956). The knowledge and skill of photography was therefore displaced from the inner workings of the apparatus and placed into the body of the photographer; how they should stand, hold the camera, and in what direction they should face. These manuals begin to indicate how the conception of the camera as a tool that could be mastered and utilized was steadily eroded by new understandings of the camera as a mediating interface between the perceptive and affective body of the photographer and the world around them.

We can also perceive in these changes an influence of Taylorism extending beyond the factory and into the ideological narrative of photography, now reconfigured as a series of efficient motions for the creation of images. The time and motion studies conducted within Kodak's factories are seemingly reapplied in a photographic apparatus that requires only 'three motions'

(Collins 1990, 164). In some key respects, the concept of Taylorism and the 'scientific management' of labour reflects the concept of the 'functionary' that Flusser proposes. For in the principles of Taylorism, the worker is figured as an integral part of the machinery, rather than as something essentially different in kind. In Taylor's (1911) treatise on the scientific management of labour, he views the movement and efficiency of labour from a perspective of science and engineering that collapses the distinction between labourer and machine. For example, the discussion of better pay and living conditions for workers is not justified from a humanist principle or moral imperative, but is seen as akin to the appropriate maintenance of necessary machinery (Taylor 1911). Like in the Taylorist factory, Kodak's snapshooters are not external to the apparatus, but are an integral part of a single hybrid assemblage.

By rendering crucial aspects of the photographic process invisible, embedded within the black box of the camera, the technical and processual nature of photography came to be replaced by an economy of gestures directed at the subject. The speed and efficiency of these actions enabled the image to become a product of photographic looking; a productive gaze that created value and meaning out of perceptions and emotions. In the mystified process of snapshot photography, in which the user's role in the production of the image is increasingly limited, the moment of capture ('pressing the button') comes to stand synecdochally for the total process of photography. However, in the easy-to-use apparatus of Kodak, the snapshot photographer, somewhat counter-intuitively, becomes more, rather than less entangled with their apparatus. Its simplicity and automacity enabled and encouraged perceptions and desires to flow through the apparatus, unimpeded by a sense of the camera as a technical externality. Bolter and Grusin's (1999) determination that the medium of photography has a tendency towards immediacy as a mode of mediation, appears to be the case in the production of images as much as it does

in their consumption. Whilst the simplicity of Kodak's apparatus foreclosed certain creative possibilities of photography, the immediacy of its use enabled the desires and perceptions of the user to flow through the camera, imbricating the photographer with their apparatus.

Kodak's concept was completed in the process of developing and printing the image. Either returned as a whole, or as a cartridge removed from the back of the camera, Eastman's system of photography involved redistributing the labour of developing and processing the image, first into Kodak's factories, and later into smaller processing laboratories. At the factory, techniques of mass production were utilized to lessen the cost and time associated with developing each image (Collins 1990; Jacoby 1997). Rather than require the photographer to own the necessary equipment and space to develop and print their own images, alongside the necessary skills and expertise, Eastman transformed the developing process into a simple case of posting the camera back to Kodak, where workers would handle the complexities of production in the segmented and standardized mode of a modern factory (Cruz and Meyer 2012, 209). Kodak sought to take the labour of photography out of photographers' hands, granting them the freedom to enjoy the pleasures of capturing images without ever having to enter the darkroom. Indeed, a recurring theme of Eastman's early career was to remove the darkroom altogether. As he writes of new developing methods, 'These machines will enable us to advertise "To Hell with the Darkroom"' (Eastman, cited in Collins 1990, 99), which he comes remarkably close to with the revolutionary zeal of the advertising line, 'Dark-Room Abolished' (Kodak 1902).

By transferring the labours of developing and printing to their own workers and machinery, Kodak introduced another instance of commodification and reification to the photographic process. The pathway from the captured image

to its emergence as a visual object was re-routed via yet another black box, the factories and processing plants of Kodak. Beyond the material and economic consequences of such a structural arrangement, lay deeper changes to the meaning and value of the photographic object. These changes might be understood via Ignaz Cassar's (2012) concept of latency in the photographic process. As Cassar argues, there is an investment of desire after the image is captured; an energy that exists in the liminal space between the capture and visualization of the scene. The image enters a state of indeterminacy, existing as an impression (both mentally and physically), but as yet unseen and unknown. In this period of latency, desires invested in the image rise to the surface as we project forward to what we want the image to show us. In Cassar's discussion of the libidinal economy of photography, the emergence of the image is in some sense always already separated from its storage upon the film. Rather than the result of a process conceived in technical or chemical terms, the invisibility of its production enables the image to emerge as a reified and singular object that disavows its contingency and temporality. In the system of Kodak, however, emergence from this indeterminate state always occurred in the form of a packaged and fetishized commodity; an object that has been imbued with significance through its involvement with the valorizing processes of labour. It is not only on a theoretical register that the photograph emerged from Kodak's productive apparatus as a commodity. Kodak and their partners paid specific attention to the packaging of photographs and the customer experience of receiving these images back (Pollen 2020). The photographic object that resolved the latent desires and meanings invested in the image was therefore connected with a discourse of consumption that interceded in the libidinal process.

Kodak has previously been framed as enacting a democratization of vision and as a disruption to the established hierarchies of photography through lowering

the technical and financial barriers that had kept it the preserve of a select coterie of professionals and wealthier dilettantes (Cruz and Meyer 2012, 208). Whilst the cost of photography was significantly reduced, as Dave Kenyon (1992) argues, at first it remained only available to the upper middle classes. Even Kodak's cheapest products such as the eponymous Kodak were not affordable to most families, equating at the time to approximately an average monthly wage (Kenyon 1992). Therefore, over these first decades, the craze for Kodak and the repeated notion that *anyone can become a photographer*, extended for the most part only as far as the upper middle classes (Sarvas and Frohlich 2011). It would only be later in the first half of the twentieth century that a wealthier middle and working class would have the available surplus money to spend on such non-essential items as photographic equipment and services (Sarvas and Frohlich 2011, 55).

Regardless of such realities, Kodak promoted an almost revolutionary rhetoric of photography becoming a central part of everyday life; a photography that 'anyone could' and 'everyone would' take part in (Collins 1990, 60). Whilst Eastman expresses a degree of humour in the following statement, the underlying sentiment appears quite congruous with the discourse of vernacular photography promoted by Kodak at the time: 'it shall finally come to pass that children will be taught to develop before they learn to walk, and grown-up people – instead of trying word painting – will merely hand out a photograph and language will become obsolete' (Eastman, cited in Collins 1990, 99). This imagined photographic future speaks of an unimpeded circulation of images, with the technical apparatus of photography transposed into a state of ubiquity. In speaking of children learning photography before using the written or spoken word, Eastman signals a desire to imbricate photography deeply with our needs and emotions; a vision of photography in which our perceptions and desires are transmitted through photography with

the immediacy of language. However, the mode of mediation they offered was not a return to a pre-ideological state, but rather the naturalization of an ideological narrative that was promoted and enhanced by Kodak. As explored in the following section, in conjunction with a radically altered process of photographic mediation, Kodak sought to provide a new raison d'etre for photography, one that was deeply connected to prevailing ideological narratives of leisure, modernity and the consuming family.

Take a Kodak with you

Although the production and sale of cameras was a profitable enterprise, the heart of Kodak's long-term business model was the reciprocal consumption of film and the services of developing and printing images. This can be seen across the diversified business interests of Kodak and the range of fields they entered; x-rays in the medical industry, microfilm in education and record-keeping, and perhaps most notably, the production and development of film stock to a burgeoning movie industry, which consumed vast quantities of Kodak supplies as the century progressed and the running time of films extended (Collins 1990, 134-182). Producing a new apparatus of photography was therefore just one aspect of a framework designed to introduce people to the pleasures of 'kodakery'. Cameras such as the Brownie and the Kodak were seen commercially as gateways to a long-lasting and deeply ingrained consumer relationship that would generate continued revenue streams over many years. We can see this concept at play in one article from the *Kodak Salesman*, a trade publication produced by Kodak:

> Rid your mind of the notion that Box Brownies were put on the market to fill a demand for cheap cameras, purely and simply. The price was entirely a secondary consideration. The prime reason for the existence of

these cameras is to enable you to get the youngsters going in Kodakery early – to start them making pictures when they are young.

(Kodak 1917a, 3)

This excerpt signals how the provision of affordable and easy-to-use cameras was a means of generating a new class of consumers who would engage with photography and be emotionally invested with the Kodak brand from an early age. It was not enough, however, simply to provide cameras and expect people to find an innate reason or passion for partaking in photography. Instead, Kodak sought, through extensive marketing campaigns and promotional material, to create new motivations and desires for photography (West 2000).

Rather than expand the pre-existing market for consumer photography (those 'serious amateurs' who Bourdieu [1990] describes as focused on the technical or aesthetic qualities of the image), the vision Eastman held was of a photography imbricated with the core ideological beliefs of a broader base of consumers. As another excerpt from the *Kodak Salesman* states, 'In offering a device with which people can record kin, possessions and pastimes, he deals with joys, yearning and vanities that for centuries have been the instinct of the race' (Eastman, cited in Collins 1990, 187). Shedding the desire to either imitate or rival the high arts, photography could be freed to play a fundamental role in the production of daily life. In seeking to connect photography with a core set of beliefs held in society, Kodak cultivated a narrative of photography that focused on the concepts of leisure, family and memory (Slater 1995; West 2000). The advertising and promotional material of Kodak operated as a means of instruction and education for consumers about the value of photography in everyday life and the needs it would address. As the technical knowledge required to operate the camera was significantly reduced, a new level of knowledge regarding the role and function of vernacular photography in the

consumer's life had to be taught, achieved through aggressive campaigning and marketing at unprecedented levels (West 2000, 19-35). As Eastman (cited in Collins 1990, 148) quite bluntly put it in private correspondence, 'As a rule the public has to be educated to its own needs. It does not see the merits in an article until it has been, so to speak, thrust down their throats and held there by some enthusiastic, imaginative person.' To frame vernacular photography as a phenomenon that emerges from the ground up, as the vision of untrained people creating meaning through the camera, therefore misses the importance of the lessons given by Kodak about the appropriate times, subjects and contexts for picture-taking that formed the ideological framework of snapshot photography.

In the early days of Kodak, we can identify key recurrent themes in their advertising campaigns. The first of these is linked directly to the previous section of this chapter, namely the simplicity and ease of Kodak's new system of photography. Kodak's most famous of lines, 'You press the button, we do the rest' (1890), was accompanied by a number of similar taglines promoting analogous sentiments, such as 'Photography Simplified' (1880s), 'Anyone who can wind a watch can use the Kodak Camera' (1888) and 'Tis Kodak Simplicity' (1902). Focused on introducing the consumer to a new class of commodity, these advertisements sought to create a space outside of the niche discourses of photography and within a more generalized field of consumption, as they invited people to 'see the ease and comfort of Kodak Photography' (Collins 1990, 93). This appeal to a new type of consumer was reinforced through positioning a number of such advertisements outside of photographic trade publications and into newly emergent lifestyle and family magazines that arose contemporaneously to Kodak, such as *Good Housekeeping* and *Companion for All the Family*.
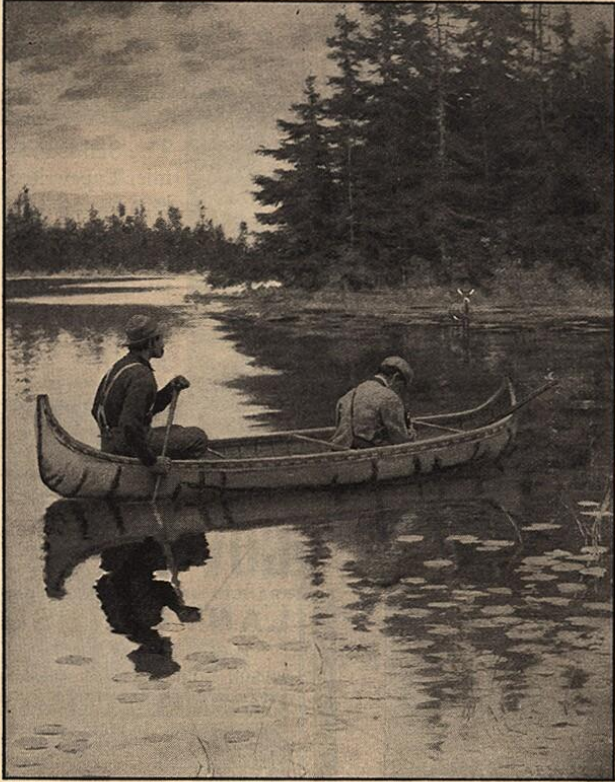
Beyond raising brand and product awareness, Kodak initially emphasized the fun and playful aspects of photography. This was particularly the case with child-friendly cameras such as the box-brownie, for which its eponymous magical sprite became a key concept in extended marketing campaigns (Olivier 2007). Linking the box camera with children's stories and folklore spoke to photography being playful and magical, a game to be played rather than a skill to be learnt and developed. The mythical aspects of the brownie also signalled a sense of wonder and awe; a magic trick performed with the camera, as moments captured disappear within the box, only to re-appear again as frozen and crystallized objects. The concept of connecting photography to magic went beyond products aimed at children, with lines such as the 'Witchery of Kodak' (Kodak 1909) declaring the mystical ability of the Kodak camera to effortlessly create photographic stories out of any event. In making such connections, Kodak was constructing a discourse of photography as an enjoyable and fun activity, in opposition to the solemn and serious affair of its Victorian predecessors. Rather than the static and laborious process of the daguerreotype, with its extended exposure time transforming the body into something of a corpse as it sat in constrained stillness (Batchen 2000b, 130), Kodak was to be lively and dynamic; the body caught in action, the face with a wider range of expressions and a new degree of spontaneity.

Framed as a leisure activity, photography was seamlessly situated in the context of other leisure activities, with Kodak constructing a narrative of photography that enhanced and provided additional significance to the event. Lines such as, 'Vacation Days Are Kodak Days' (1904), 'All out-doors invites your Kodak' (1910) and 'Every sport is more sport with a Kodak' (1922a), keenly emphasized the role of Kodak in leisure, whilst leaving labour (paid or unpaid) conspicuously absent from the invitation to 'Take a Kodak with you' (1901b). In each of these lines, immortalizing or recording the event is given

almost secondary consideration to the value added in the moment through the enhancing presence of the camera. According to Don Slater, Kodak was 'both a commodity and a meta-commodity, leisure and meta-leisure' (Slater 1995, 135). More than this, however, photography was an activity that enhanced the significance and meaning of other activities through the act of recording and archiving them. Photography does not just immortalise an event in the future tense of 'looking back' at the high moments of family life, but instils by its own presence a sense of significance and exceptionality to the present moment: 'Because it can be the object of collective and quasi-ceremonial contemplation, photography […] prolongs the festivity of which it is a part and whose importance it signals' (Bourdieu 1990, 26). Photography is not therefore only the means of representing other commodities, but is transformative of the act of consumption, signalling the event as something significant, as something worth capturing, whilst simultaneously devaluing the event unseen through the lens. Forerunning the 'pics or it didn't happen' (Silverman 2015) mantra of the Instagram generation by some hundred years, Kodak proclaimed 'A vacation without a Kodak is a vacation wasted' (Kodak 1903b).

In one early advertisement, the imperative phrase 'Hunt with a Kodak' (1905), is used to connect photography directly to the sport of hunting (Figure 4). In making this association, photography is framed as an exhilarating and exciting activity; a sport played for the enjoyment of the pursuit as much as the final capture. Depicted in the accompanying image, a man and a boy drift in a small canoe surrounded by dense forest, the boy stares down at his Kodak and by proxy into the distance, where a deer stands by the riverside. As Susan Sontag (1979) analyzes, 'shooting' with the camera has much deeper psychological resonances with guns and hunting than its connotations of 'good sport', and we might therefore highlight the notion of symbolic possession that the camera conjures in such a comparison. Signifiers of traditional masculine American

values might also be seen in this representation of hunting. The camera in this advertisement, however, is less a sublimation of the gun than its direct competitor, portrayed as more essential and more convenient than its rival. There are, proclaims the advertisement, 'no game laws' for photography, no restrictions on what may be captured through the lens. Highlighting how Kodak drew on a nostalgic vision of the past, this advertisement demonstrates how traditional past-times were reconstructed as modern activities of leisure and consumption - a pattern repeated across its early advertising.

Figure 4. Kodak Advertisement, 'Hunt with a Kodak', 1905.

The sphere of 'free time' or 'leisure time' that Kodak operated within was a historically and ideologically specific phenomenon. As Adorno (2001) argues, the concept of leisure time is not an immutable part of lived existence, but has experiential qualities that are directly linked to particular time periods and material economic conditions. As a result of rapid industrialization and a newly swelling middle class, the USA in the late nineteenth century was characterized by an increase in conspicuous consumption and by a reconfiguring of leisure as an activity defined in opposition to work (Burke 1995). The reification of labour and the loss of agency implied by the capitalist mode of production are not separable from leisure time, but, according to Adorno (2001), come to define leisure dialectically as its opposing pole. In Adorno's polemic essay *Free Time* (2001), written in 1969, modern practices of leisure are understood as extending the production of capitalism, with 'free time […] shackled to its opposite' (Adorno 2001, 188). Whilst notions of productivity and labour are vociferously erased within a discourse of free time that is framed as an 'unmediated oasis', work is discretely 'smuggled into the realm of free time' (Adorno 2001, 190). We might return here also to Debord's (1983) argument in *Society of the Spectacle*, whereby leisure time in the twentieth century was said to be characterized by a necessity for cultivating the demand for an over-abundance of commodities being produced. To describe Kodak as entwined with a discourse of leisure, is therefore to locate it within a space defined through corollary capitalist modes of production, rather than as a space external to such systems.

By fostering a clear association with leisure, Kodak created a clearly defined field of operations for photography, with ready-made moments and locations for taking out the camera. As Slater (1991, 57-58) argues, 'Film throughput requires *particular*, readily identifiable situations which require the camera […] conventional situations but not everyday ones.' By infusing these events with

the significance of the camera and the anticipated image, snapshot photography also enabled the symbolic production of leisure time, characterized through notions of freedom, pleasure and change (Chalfen 1987). By focusing on leisure and consumption in domestic life (defined against notions of labour and routine), a patterned view was constructed that re-affirmed the singularity and significance of the family. Separated from the uncertainty and atomization of modernity, the Kodak family was a site of meaning-making, depicted as a movement through significant life stages and characterized by togetherness and stability, but also growth and development (Holland 1991). As Chalfen (1987, 99) argues, the concept of change forms a significant part of our photographic narratives, or perhaps more precisely, 'socially accepted and positively valued change'. Change in the terms of Kodak is therefore understood as points of familial and social growth, as seen through images such as a baby's first steps, moving into a new home, or going on vacation. Through the camera, a particular ideological vision of the family became the locus of a new spectacle, which alongside other spectacular commodities, 'assumed an increasingly symbolic value' (West 2000, 4). Taking photography away from the flat functionality of representation, Kodak injected desire into photography by imbuing it with feelings of nostalgia and a yearning for the past. As Nancy West (2000, 5) argues, Kodak 'taught us how to see and use photographs as sites of longing', bringing photography into the new realm of spectacular commodities that teemed with symbolic significance and special meanings.

Kodak's advertising developed over time to figure photography not only as a leisure activity, but as the means of symbolically producing the family through a particular ideological lens, with the frame of nostalgia acting as a central tenet of how this vision was constructed (West 2000). The photograph became a way of holding particular moments in perpetuity, securing significant points of

family life against the effects of time. As the moment passes and our memories fade, Kodak offered the means of fixing these moments through the photographic image. The value of the image and the role of photography as a form of mnemonic labour came to the fore in their advertising campaigns, as Kodak compelled people to 'Keep the story with a Kodak' (1922b). Kodak taught us to view memories through a nostalgic flow between the past and present. Just as important, however, were the gaps in these narratives; those memories excluded from the frame of nostalgia that were conspicuously absent from albums and shoeboxes. As West (2000, 1) argues, 'Kodak taught amateur photographers to apprehend their experiences and memories as objects of nostalgia, for the easy availability of snapshots allowed people for the first time in history to arrange their lives in such a way that painful or unpleasant aspects were systematically erased.' This was a reconstructed vision of the past framed around happy and poignant moments, attested to by a plethora of smiling faces and summer light.

Nostalgia is not only a frame for perceiving the past, but is directly connected to a mode of seeing in the present that anticipates its future readings. Rather than the 'embalmer of time' that Andre Bazin (1960, 14) suggests, the photographic object appears to roam between past, present and future imaginings, constructing new narratives of the family. Kodak's advertising invokes future readings of the image. However, it also disavows this ideological and productive picture of photography in favour of an authoritative discourse of the objective archive. For example, an advertisement for the Autographic Kodak (a system for recording notes on the film at the time of exposure), states 'Such records mean a great deal when baby has begun outgrowing baby ways and time has begun playing tricks with memory' (Kodak 1917b). In addition to placing the camera firmly within family life, this claim also positions photography as addressing the failings of memory as an

archive. The photograph becomes part of an objective history through which our memory of events can be preserved and corrected, rather than the vehicle for their construction and production. As a 'defence against time', Kodak depicts photography as fixing moments and standing in for memory, despite the cultural imaginaries that are imbricated within the image. With devices such as the Autographic, Kodak offered the ability to fix the meaning of the image; to secure specific readings of the photograph against the surfacing of alternative versions of events in the future (Kuhn 1991).

Through the disavowal of vernacular photography's transformative and productive dimensions, the denial of its capture within a dialectic of truth and myth, the image becomes a spectacular and symbolic commodity. The image of the family becomes spectacular not through its extraordinariness as such, but through a series of conventions which refract the image within a particular ideological framework that is linked to, and yet separated from, the social experiences of the family. As Holland (1991 4) argues, images that embrace conventionality are immensely pleasurable because 'their familiar structure is able to contain the tension between the longed-for ideal and the ambivalence of lived experience.' It is the appearance of an ideal being materialised that gives the image its spectacular quality; a blurring between fact and fiction, indexicality and mythology, which produces new modes of photographic desire. The camera dialectically offers the faithful record - the 'that-has-been'-ness of photography (Barthes 1981, 76), alongside the possibility of transforming the self and the family into something more, something laden with symbolic potential. The spectacular nature of Kodak emerges not from a particular form of visual representation, but in the crystallising of desires within photography, and the subsequent disavowal of these crystallised desires, the image confronting us instead as an objective and evidential record.

Kodak had significant power and agency in defining the symbolic and material meaning of vernacular photography. However, even when excluding modes of active resistance to such a discourse, the mythology of photography that Kodak sought to impose was always partially undermined by the effects of a time and history that exceeded it. Despite Kodak's narrative of the photograph as a fixed point in time - a single moment from the past drawing us inexorably back - the image always undergoes 'a continuing process of production, exchange, usage and meaning' (Edwards 2004, 4). Its meaning shifts and transforms as it participates in and responds to events in family life. The pathos of the image changes as it is viewed by different people, for whom it may evoke different or even contradictory emotions to those intended at the point of creation. In wresting photography from the banal functionality of representation and transforming it into a site of desire and yearning, the photograph takes on a new symbolic significance, becoming a contested site of emotions and desires that resist any singular meaning.

Having invoked the productive nature of the image, it is useful to consider how notions of mnemonic and emotional labour are figured in snapshot photography, even as it disavows forms of labour in its subject matter (Holland 1991). In constructing a narrative of the family, the role of in/visibility again plays a vital role, as particular moments are gathered together within the family album, whereas others are routinely excluded. The conspicuous absence of pain and anguish in the promotional material of Kodak points to the creation of selective archives premised as much on forgetting as they are remembering. These extended photographic practices, whilst not necessarily specific to Kodak, formed a key aspect of how photography was performed during the twentieth century. The drive to construct such stories out of photographs was a crucial part of Kodak's advertising, with the family album taking a central role.

Keep the Story with Kodak

In examining snapshot photography in the twentieth century, it is vital to recognize the range of material practices extending beyond the emergence of the photographic image. Once the photograph was developed and printed, certain images were called upon to form part of larger photographic narratives with others. The creation of family albums, slideshows and display cabinets were integral aspects of how photographic meaning was constructed. As Elizabeth Edwards (2004, 6) argues, 'Material forms create very different embodied experiences of images and very different affective tones or theatres of consumption.' In constructing the family album, amateur photographers were shaping the receptive context for how pictures of the family would be read and understood. Simultaneously, this potentiality for images to enter into these contextual arrangements had a deep and profound effect on the photographs that were taken and those that were not (Cohen 2005). Snapshooters may have been unburdened from having to possess knowledge and skill regarding the technical processes of photography, however, the labours of photography still called upon a deep reservoir of knowledge in the creation of 'pleasing' or 'affirming' narratives of the family from the fragmented and disconnected moments of life caught on camera.

The family album formed a locus of these extended photographic labours; the production of an archive that contained a particular vision of the family within an idealized system of representation. Against the backdrop of atomization and fragmentation, the family album reasserted the primacy and exceptional nature of familial relationships (Holland 1991). Mapping a path between disconnected moments of family life, the photographic album constructed both story and record of the family, in which significant events and relationships were memorialized, whilst perhaps just as importantly, others were systematically

repressed (Holland 1991; Stanley 1991; Chalfen 1987; Sontag 2003). Dynamics of presence and absence (or in/visibility) once again form a central axis through which practices of vernacular photography operate: 'albums construct their own versions of family history, in negotiation with the ideal. Aware of the ever-present possibility of scandal, they will rigorously exclude others' (Holland 1991, 7). The family album can be used as both a tool for making-present the absent family member through their symbolic presence and a tool for the making-absent of others, who by exclusion can be forgotten, or at least symbolically repressed. As Julia Hirsch (1981, 118) argues, 'The renegade, wastrel, the outlaw are not pictured in their extremities. They are simply not pictured at all. The family pictures we like best are poignant – and optimistic.'

As the site of making such decisions, the family album can be thought of as a site of meaning-making, a place for producing a symbolic narrative of the family, constructed by the keeper of the archive. Furthermore, within the family album there often occurs a struggle or contestation over the meaning of the story and who has the right of interpretation (Kuhn 1991). In thinking through these power dynamics, we might place the family album in the context of Jacques Derrida's (1995) writings on the archive, and the role assigned to those he terms the 'archons'. These keepers of the archive decide on what is to be included or excluded from the record, performing what Derrida terms the act of 'consignation'. This act of consignation is the gathering together of different signs to construct a symbolic order from the available resources and documents, 'to coordinate a single corpus, in a system or a synchrony in which all the elements articulate the unity of an ideal configuration' (Derrida 1995, 10). This expression of unity and cohesion is not only an aspect of the technical form of the archive, but also part of a symbolic order, that in the case of the family album instils a unified vision of the family. The act of consignation is therefore simultaneously a technical and an ideological act; a gathering

together of both the archive *and* the family, placing them within particular relationships of meaning.

The archons' role is twofold, for as the primary gatekeeper, not only do they construct and maintain the archive, they also act as its primary interpreter and authority. The archons are granted by virtue of their position the 'hermeneutic right' to interpret the meanings of the archive (Derrida 1995, 10). The polysemy that inhabits the archive is suppressed (although not extinguished) through the authority held by its keepers, whose position designates their interpretation as the official reading. These dynamics might be seen to operate in the production of the family album, which was rarely seen as a collaborative effort, and is often assigned to one adult within the family, as attested to in the series of accounts given in Patricia Holland's (1991) *Family Snaps* and Jo Spence's (1988) *Putting Myself in the Picture.* Struggles that occur over the meaning of the family album take place through uneven dynamics of power, whereby those who have the hermeneutic right hold significant privileges over those who are merely recorded participants by the camera (Kuhn 1991).

The negotiation of meaning in the family album does not only happen within the internal dynamics of the family but is co-constituted by the structure of the archive that provides its foundation. The family album is dependent on the objects produced through the photographic apparatus and the discourses of vernacular photography; both from the commercial institutions who produce and market photographic equipment, and the broader set of socio-technological conditions in which these are embedded. The 'theatre of consumption' (Edwards 2004, 6) is partly shaped by the family constructing their familial narrative, but also by the available resources to construct such a narrative and the particular effects produced by their affordances. As Derrida writes:

> […] the archive, as printing, writing, prosthesis, or hypomnesic technique in general is not only the place for stocking and for conserving an archivable content of the past which would exist in any case, such as, without the archive, one still believes it was or will have been. No, the technical structure of the archiving archive also determines the structure of the archivable content even in its very coming into existence and in its relationship to the future. The archivization produces as much as it records the event.
>
> (Derrida 1995, 17)

This passage firstly emphasizes the integral role of the archival apparatus in the construction of its symbolic narratives. The form of inscription and the material substrate on which it is inscribed produce effects that continually shape our way of seeing and knowing the past. Secondly, and perhaps more crucially, Derrida is positing that the presence and structure of the archive changes not only how the event is recorded and understood, but is constitutive of what an event is and how it is experienced. When Derrida argues that 'archivization produces as much as it records the event', he is supposing an inseparability between reality and its recording, or an internality of the archive to the structure of the event. We might think here once again of Bourdieu's (1990) description of the photographic act as marking a high point of solemnity and togetherness for the family. The camera's presence does not merely document the family, but calls the recorded event into being and transforms how this moment is understood. The archival process is productive of the event as much as it is productive of the archive. The archival moments of photography are therefore nested, in that they occur not only at the point of entrance or exclusion from the family album, but also at the very point of being captured as an image through the lens. For the production of the photograph

can itself be framed as a moment of inscription, with archival dynamics being played out in the very act of capturing the image.

As has often been recalled in photographic theory, the term photography is composed etymologically from the components *phōtos* (light) and *graphé* (writing or representing by lines) (Clarke 1997). The sense of *light-writing* contained within the term provides a sense of productivity and agency to the photographic act. As the *writing* of new stories, our family albums construct a narrative of the past, but they also intersect with and shape the present, producing future ways of *becoming.* In writing the story of the family, we create a narrative that is co-constitutive of our experiences, relationships and desires. Rather than snapshots of an external world, or an objective record of noteworthy events, photographic mediation productively generates forms and concepts of living. The family album stands as a complex assemblage of cuts, the *cut* being understood here through Kember and Zylinska's (2012) work on photographic mediation. Foregrounding the 'productive and performative aspect of photographic acts' (Kember and Zylinska 2012, 71), their concept of the cut is one of making incisions that transform matter and produce new forms. Understood as a temporal process that works through the dialectics of flux and stasis, photography moves beyond a representational ontology, in which it can only record the world more or less faithfully, and towards a productive economy of making differences in the world, culturally, materially, and biologically (Kember and Zylinska 2012, 83-6). As a continuation of this process, the photographic album is therefore reframed as an extended medi(t)ation on the life of the family, an expression of the possibility of writing new modes of being in the world and new ways of relating to each other.

As Kember and Zylinska (2012) propose, photographic mediation is a matter of becoming (and a becoming of matter). Through making cuts, we create

temporary moments of stability from within the flow of mediation that enable us to productively reconfigure our ways of relating both to the world and as part of the world. However, this agency of photographic mediation is not entirely our own, as we are reminded when we are invited to 'Let Kodak Tell the Story' (Kodak 1910), providing a template for our cuts within a framework of becoming that is contained by established narratives of conspicuous consumption and the nuclear family. The transformative possibilities of photographic mediation were codified by Kodak within an ideological imperative to become both the ideal consumer and commodity within a new mode of spectacular production. The creative potential of reconnecting the cuts of photography to the horizon of duration is perpetually deferred in the realization of the gaps and disjuncts between our images and desires. The potential state of *becoming* that Kember and Zylinska theorize is co-opted by a mass-market of vernacular photography, in which the commercial prerogative is to produce a teleology of photographic becoming whose promise is never fully realized. This means that the creative and productive potential of photographic mediation was pre-figured within the commercial framework of snapshot photography, prescribed as the point at which the family emerges from the routines, pains and banalities of daily life and into a utopian landscape of Kodak's making.

Ignaz Cassar's (2012) concept of *latency*, briefly discussed above, might point to how we can conceive of the pre-figuring of such cuts and flows in photographic mediation. In Cassar's description of the photographic process, the latent image, caught in a state of indeterminacy between capture and development, becomes invested economically and libidinally with our unconscious desires. Concealed, the uncertain image calls into question the teleological imperative of photography, providing a space of suspension between the event of capture and its almost inevitable emergence as a symbolic image. However, this

moment of resistance to signification is lost as the photograph manifests itself as a symbolic surface to be reintegrated into the known. The *becoming* of photography is thereby resolved into a state of *being*. Whilst the symbolic surface of snapshot photography is filled with representations that posit an ideological or 'patterned view' of the world (Chalfen 1987), it might instead be within this pre-symbolic moment of latency, of the construction and production of photographic desires, where we find Kodak and the logic of commodification operating most deeply. This point of indeterminacy, where the image exists only in potentia, or as a site of becoming, is also a space which Kodak appropriates and fills with its own ideological vision of the photographic; of *becoming*, becoming contained within a particular ideological vision of modernity and the family.

Kodak knows no dark days

This examination of Kodak has demonstrated how the relationship between capitalism and photography went beyond the fetishized image-object, being present across the mass-produced apparatus of Kodak and the forms of photographic mediation these created. To establish these relations, this chapter has examined from different vantage points how the socio-material network of Kodak produced a 'complete marketing concept of photography' (Slater 1995, 52). These vantage points have foregrounded how technological, cultural and commercial imperatives are reciprocally engaged in the production of snapshot photography as an ideological structuring of photographic mediation. To understand Kodak culture, we need to go beyond the representational image and look to how Kodak structured the temporality and performativity of photography; to examine how particular cuts were sanctioned and promoted, whilst other creative horizons were limited by design.

In framing this discussion, it was important to first examine the material and economic dimensions of Kodak, including the key commodities they produced. Kodak cameras were imbued with an agential significance and liveliness through both the reification of labour entailed in their production and the extensive marketing campaigns that promoted their value in daily life. As discussed, Eastman adopted relatively novel techniques of mass-production early in the history of Kodak, including Taylorist techniques of efficient and economic movement and an organization of the factory that might be considered proto-Fordist in terms of design and output (Jacoby 1997). Whilst the snapshot camera might stand as the emblematic commodity of Kodak, it was the mass-production of film and the developing of images that provided the sustainable profit margins on which they relied, requiring the creation of new photographic opportunities and situations, cultivated through a narrative that promoted the symbolic significance of family life (Slater 1991). Enabled by divisions of labour in the production process, the photographic image became paradoxically both a standardized, mass-produced commodity and a vessel for the individualized desires and beliefs of the consumer.

In the process of factory production, the worker's labour, reified in the image-object, was accompanied by the affective and sensorial labour of the photographer. The desires of the family became entangled in a system of commodity production, detached and objectified within the image. In capturing the beliefs and desires of the family, they came to be congealed in what Debord (1983) refers to as a 'spectacular commodity', a category of commodity whose purpose is to reaffirm and reproduce an ideology of conspicuous consumption. The act of consuming Kodak is therefore joined conceptually with a sense of producing Kodak, as the investment of our perceptual apparatus and libidinal desires becomes co-constitutive of the image's value. However, to fully account for the significance of Kodak culture,

and to understand how the drive to keep 'kodaking' was formed, we must also look beyond the image to the more ambiguous, deeper and generative potential of photographic mediation. Reading the apparatus of Kodak through the lens of Kember and Zylinska (2012), Cassar (2012) and Di Bello (2008), this chapter has shown how the creative and transformative potential of photographic mediation was appropriated as an integral aspect of producing not only photography, but also the family, as a spectacular commodity. Taking photography as a durational phenomenon that stretches beyond and between the acts of picture-taking and the emergence of the image, we can therefore begin to connect the dynamism and vitality of photographic mediation with the reifying effects of commodification.

In making these arguments, for the sake of brevity and clarity, a significant number of omissions have been made in Kodak's extensive, complex and far-reaching history. By focusing on the foundational moments of Kodak's business model, the continuous changes to vernacular photography they enacted as the century progressed, remain largely unexplored. It is worth emphasizing that there was no singular 'Kodak moment' of photography as such, but rather a gradual unfolding and combining of different technologies, marked by particular commercials successes, such as the Kodak Camera, the Brownie, Kodachrome film, the Instamatic and the Kodak Carousel (Kodak 2016). Also absent has been a fuller account of Kodak's broader business strategies, such as its significant research and development operations, its continual acquisitions and takeovers of its competitors, and the filing, purchasing and infringement of patents (Collins 1990; Jacoby 1997). Furthermore, as part of its monopolistic tendencies, Kodak operated across the spectrum of photographic markets, offering products and services that catered to snapshot photographers, amateur enthusiasts and professionals alike, of which only the first has been given consideration. There is only space here to

note that the stratifications between the 'snapper' and the latter two categories was maintained and to an extent cultivated by Kodak. Rather than offering a flattened hierarchy of photography, these separations appeared to provide a pathway for the consumption of more expensive goods through an aspirational framework of photographic mastery (Collins 1990; West 2000).

Outside of Kodak's dominance, there were a number of alternative commercial vernacular photographies that emerged in the twentieth century. There is not the space in this chapter to fully engage with the array of competitors to Kodak operating both in the USA and abroad, such as Fujifilm, Leica or Coronet. However, it is useful to briefly pause on the case of Polaroid, as beyond providing a counterpoint to the vision of photography propagated by Kodak, Polaroid also signals towards some of the temporal and durational qualities that have come to the forefront in networked and digital photography. As Peter Buse (2010a, 2010b) has examined, Polaroid's unique brand of 'picture-in-a-minute' technology was not only a quantitative shift in the temporal dynamics of photography, but had a qualitative impact on the types of photographic practices it fostered. Polaroid maintained the associations of nostalgia that Kodak had promoted, with its distinctive materiality and thick white borders evoking a strong sense of the photograph as an object, making it the perfect vehicle for the memento or keepsake (Buse 2010b). However, the concept of instant photography also brought new pleasures of a photographic present, in which developing the image became itself part of the event.

Compressing the time between a moments capture and its emergence as a visible photograph, Polaroid's 'instant photo' technology collapsed photography into a single structured activity in which the users 'are simultaneously subjects and viewers of the photograph, a tableau mirrored in the image they are consuming' (Buse 2010a, 222). As Buse (2010a) argues, the

Polaroid did not keep the distance of other photographies, but was actively and reciprocally engaged in the event it sought to document. This process is described by Buse (2010b, 192), playing on a phrase by Tom Gunning relating to early cinema, as the 'photography of attractions'. From this viewpoint, Polaroid was caught not within the desire of faithfully recording a moment for posterity, but was engaged in the enjoyment of the technology itself as a spectacle; an almost magical and captivating unfolding of the image in the very time and space it recorded. The camera was inserted into the occasion as part of the social experience itself, a communal activity in which performance and play became central to photography. The apparent magic of Polaroid still relied on the deeper ideology of photography as a truthful record of a fixed moment in time. However, its practice involved the immediate reinsertion of the image into the moment itself, actively shaping and transforming the moment it documented. Whereas photography had previously been associated with a detached individual eye that would capture the moment from behind the lens, Polaroid cultivated a 'dispersed collective vision' in which the image was not the photographer's alone, but the collaborative product of a group activity (Buse 2010a, 225).

Polaroid serves as just one example in which the version of vernacular photography presented by Kodak, despite its undoubted dominance, was not all-encompassing. Different corporations produced modes of vernacular photography which had alternative visions of the relationship between photographic mediation, productivity and everyday life. As our genealogy of vernacular photography moves towards the present in the following chapters, we see aspects of photographic mediation that were present in Polaroid resurface in contemporary practices. As the image appears on the screen of our smartphone, we often spontaneously share the image by passing or huddling around the device (Okabe 2004), recalling the 'instant-image' of Polaroid that

was an integral part of the photographic event. The case of Polaroid therefore reinforces the idea that the history of vernacular photography is not one of a linear march towards the present, but entails multiple, overlapping photographies that borrow, challenge and refashion one another (Bolter and Grusin 1999).

Also significant to the narrative of Kodak is their recent decline and what this might tell us more broadly about patterns of photographic consumption. There are multiple accounts of Kodak's financial and commercial failures prior to its filing for bankruptcy in 2011 (Wiles 2012; Harris 2014; Prenatt et al. 2015). These accounts highlight, for example, how despite being responsible for inventing one of the first digital cameras in 1976, Kodak left these innovations largely unexplored due to the questions they raised in relation to the film-based technologies that had been its central driving force over the preceding century (Wiles 2012). Once Kodak belatedly realized the importance of these digital technologies to the future of the industry, the market had already been occupied by multiple competitors, such as Hewlett Packard, Lexmark and Fuji (Prenatt et al. 2015). Later, the introduction of the camera-phone would place Kodak even further out of step with the direction of travel towards lower-cost cameras and lower-quality images that could be sent electronically between devices or viewed through the screen (Prenatt et al. 2015).

Kodak's attempt to regain stability within these new markets was to offer digital printing services via kiosks, signalling a belief in the continued lure of the printed image for consumers; a belief in the perceived value, longevity and security of the material object for storing our personal moments, against the seemingly unstable, unknowable and immaterial files that sit on hard-drives or servers. As Prenatt et al. (2015, 5) argue, 'Kodak's digital strategy could not accept that consumers no longer felt compelled to print pictures and chose

rather to store and share them electronically.' In the business of digital cameras, a perfectionist mindset coupled with a failure to switch from their traditional strategy of selling at low margins, with the aim of recouping profits through the sale of photographic consumables, demonstrated further an unwillingness to accept the new realities of the photographic market (Wiles 2012).

These relatively narrow accounts of Kodak's fall from the dominant position it once held do provide some key insights into the failure of Kodak to keep apace with the changing nature of photography over the past decades. However, these institutional shortcomings must be situated in a broader shift in the ideological and cultural landscape of vernacular photography. The changes that unfolded over Kodak's more recent history were not only technological or commercial in kind, but encompass deeper shifts in the meaning and value of photography in everyday life. From a largely archival practice of mnemonic labour focused on the construction of a coherent symbolic narrative, photography has become an increasingly present form of communication, focused on the maintenance of an ever-shifting collage of desires and aspirations (Lovink 2011; Slater 1995). The family album, one of the central pillars of Kodak culture, appears to have been superseded by different theatres of consumption that speak to new dynamics of proximity and intimacy. The family, whilst still a central subject of photography, is not necessarily the unifying principle of consignation that underpins personal photographic archives. As ethnographic accounts of contemporary networked photography demonstrate, the story of familial unity and progress is joined by competing narratives that structure photographic activity in different configurations and temporalities (Prøitz 2011; Gomez Cruz and Lehmuskallio 2016). As examined in the following chapter, the immediacy of transmission in the networked image can be seen to signal a reconfiguring of photographic temporality. Whilst this has often been framed theoretically as the shift from a photography that

documents the past, to one that communicates the present (Okabe 2004; Murray 2008), as the following chapter argues, it might be more productive to consider this shift as one from the selective mediation of potential futures, to one grounded in a perpetual mediation of the present.

Contemporary vernacular photography is in many ways significantly indebted to the practices and forms of photography that Kodak produced and cultivated during the twentieth century (Rose 2010). The photographic image as a site of nostalgia, memory and meaning-making remains relevant today, even as other modes of photography have become prevalent or even dominant. Perhaps most significantly, Kodak taught us that unless we take the camera with us and capture our lives for the camera, we will be excluded from the symbolic networks of meaning that photography produces. In Kodak's advertising, the camera must always be with us, 'Anywhere – everywhere' (Kodak 1915), by our side and ready to capture special moments, enhancing their significance by its presence. By providing for photography an integral role in daily life, Kodak in part laid the groundwork for the vernacular photographies of smartphone photography and social media that thrive on the insertion of the camera into the everyday.

However, as the next chapter will examine, vernacular photography has been significantly transformed through new modes of production and consumption, driven in part by the value created by the image as it circulates, or in the preferred nomenclature of social media, as it is *shared* (Meikle 2016). Whilst newer practices of vernacular photography take place through new technological forms, such as the networked image, smartphones and social media, they are by no means reducible to these objects. As with Kodak, they form part of a socio-technical network that produces effects beyond any individual object (Cruz and Meyer 2012). Within this landscape of networked

photography, new commercial imperatives have been produced, as the processes and temporalities of photography are reconfigured. Kodak's decline should therefore be read as going beyond its failure to identify or capitalize on any one particular technology, but as indicative of an over-identification with a particular mode of photography that was productive of certain commodity forms. Even as Kodak attempt to adapt to the changing technological landscape of photography, through ventures such as KodakOne and KodakCoin, they remain committed to a concept of the image as a stable object invested with symbolic and commercial value. Despite the technological sophistication of the KodakOne platform, there is an epistemological and commercial naivete in seeking to restore the value of the photograph as a commodity. As the following chapters demonstrate, photographic mediation has already been co-opted into different circuits of labour and value which depend precisely on the abundant supply of free-flowing and ephemeral images.

Chapter 2: Snapchat and the Mediation of Everyday Life

It has become a cliché of articles and books about contemporary photography to cite the astronomical number of images being produced under the conditions of networked, mobile and social media (a cliché repeated in this thesis). In reaction to this abundance of imagery, some balk at the loss of value attributed to the individual photograph, as each is swept along the feeds of various platforms, pushed beneath a torrent of continuous new arrivals (Lindsey 2020). The production of images at this scale is critiqued as excessive and overwhelming: 'We shouldn't play down the brutality of these data: a level of photographic inflation far beyond all precedent, an asphyxiating visual pollution and a hyper-capitalism of images. This rampant excess radically transforms our relationship with images' (Fontcuberta, cited in Batchen 2017). In addition, others write of the dematerializing effects of digitization, with the content of the image becoming unmoored from any tangible substrate, the divergent materialities of the photographic object reduced to homogenous 'digital ghosts' that flitter between screens and servers (Sassoon 2004, 200). This focus on the current status of the photographic image has created a sense of overabundance and detachment that threatens to collapse or disintegrate photography under its own weight and force. However, this emphasis risks missing the productive dynamics that are generated by a more ephemeral and fluid mode of photography and the interconnected topologies of data that accompany such activity. As this chapter argues, contemporary networked photographies are characterized by ongoing mediated interactions that demand the production of an abundance of imagery. Accounting for the purpose and productivity of networked photography requires that we extend our understanding of photography's materiality beyond our encounters with

the image-object, and towards 'the material informational ecology that now informs global image exchange' (Sluis 2020, 113).

Anchored around the case study of Snapchat – the image-sharing platform that became famous (and infamous) for its self-destructing images – this chapter argues that photography's conjunction with networked media has generated circuits of labour and valorisation that are premised on a new set of relations between mediation, subjectivity and everyday life. Snapchat has been chosen as a focal point of analysis as it points to the ways vernacular photography is being made productive and profitable as value disappears from the individual photographic image. From its inception, Snapchat has made a virtue of the transitory and ephemeral, concepts that were reflected in the platform's original affordances and limitations. Most notably, users were only able to view an image for a maximum of ten seconds, after which time the image would 'self-destruct', being automatically erased from their device (Wortham 2013). Rejecting the mnemonic and archival principles of photography, the 'snaps' produced in Snapchat are incapable of being the embalmers of time that Bazin (1960) suggested was an integral part of photography's ontology, instead unravelling almost as soon as the moment has passed. By balancing the current levels of image production with a reciprocal and swift act of image destruction, Snapchat prompts us to think of contemporary vernacular photography not as a vast accumulation of images, but as a recalibration of mediation towards an ever-present presence; a photography less concerned with the archive than with an ever-shifting index of current desires, beliefs and behaviours.

Snapchat cannot stand in metonymically for the fragmented and variegated network of companies engaged in the business of photography. However, by eschewing the historical foundations of photographic discourse, it can reveal characteristics of networked photography that are elided in other platforms

that, superficially at least, remediate vernacular photography more closely. In becoming commensurate with the databases, algorithms and protocols of networked culture, vernacular photography is connected to the needs of platform capitalism for capturing attention and extracting information from users. In this media ecology, photography's focus has shifted from the commodification of memory and the creation of fixed symbolic narratives (West 2000), to the continuous mediation of subjectivity *in the flow* of everyday experiences (Jurgenson 2014). Snapchat destabilizes the meaning of vernacular photography by shifting the temporal and durational qualities of photographic mediation. Through the creation of self-destructing images that have a strictly delineated viewing window, the horizon of photography is moved from future readings of the archive towards the mediation of a perpetual present. This draws vernacular photography closer to our lived experience, enmeshing it more intimately with our desires and emotions, and enabling new forms of productivity to emerge.

The clearly defined photographic events that characterised Kodak culture are decoded, as networked photography spills into the crevices and cracks of quotidian life. More than an expanded range of photographic opportunities, this process has entailed collapsing the epistemological gap between the representational object and its subject, the production and performance of subjectivity being acknowledged as at least partially constituted through its photographic mediation. As Sarah Kember (2012b, para. 2) argues, 'we are becoming aware that the gap, if there ever was one, between photography and life itself continues to close so that, in both material and symbolic terms, photographic media can be said to shape the world that they pertain to represent.' Of course, critical theory has long held that photography does not only represent everyday life but plays a key role in producing the very categories and subjects it claims to depict (Tagg 1988). However, whereas this

productive capacity of mediation was disavowed in practices that were premised on the image's ability to faithfully record and preserve significant moments occurring in front of the camera, these same productive capacities are now promoted and valorised as a means of continually remaking ourselves in the present. If the commodification of vernacular photography, as discussed in the previous chapter, was based on the production of an idealized image of the self and family that was crystallized in the photographic object, this process of reification is seemingly rejected in the ephemeral and shifting sands of networked photography that Snapchat promotes.

In an article written for the Snapchat blog, researcher Nathan Jurgenson (2013, para. 5) suggests, 'Instead of a single, unchanging self, we might consider a "liquid self", one more verb than noun.' In response to this liquidity of the self, Jurgenson (2013, para. 10) considers the possibility of a more 'temporary social media', in which the user's identity is expressed 'not as a collection preserved behind glass but something more living, fluid and changing.' Rather than seeking to affix an accurate representation of the self, the aim of photographic mediation can therefore become a more playful and continuous process of experimentation and transformation. For Jurgenson, fluidity and liquidity are valued for the freedom they provide, unburdening subjects from the weight of their past and the permanence of categorical identity markers. Against the conservatism of social roles prescribed in the advertising of Kodak, there might be good reason to desire forms of photography that embrace the possibility of fluidity and transgression.

However, as this chapter examines, liquidity and ephemerality are also intimately connected to the late capitalist drive towards understanding the self as an always-ongoing project that requires constant self-surveillance and self-improvement (Bauman 2000; Elias & Gill 2018). By unburdening photography

from the solidity and permanence of the lasting image, Snapchat may provide new degrees of representational freedom. But perhaps more significantly, it reconfigures photographic mediation to meet the needs of a social and economic landscape that requires subjects to hold a more fluid and variable collection of desires and beliefs than those characterizing the early to mid-twentieth century (Beller 2006). In promoting an ephemeral mode of photography grounded in the present, Snapchat encourages us to mediate our fleeting emotions and desires. No longer restricted to the high rituals of family life that Kodak emphasized, photography is engaged in an ongoing mediated performance and production of the self: 'Snapchat isn't about capturing the traditional Kodak moment. It's about communicating with the full range of human emotion — not just what appears to be pretty or perfect' (Spiegel 2012).

This chapter contributes to the overarching argument of the thesis by highlighting how the deterritorialization of vernacular photography has created new productive potentials of photographic mediation. In the networked media ecology that Snapchat operates, many of the visible commodities of vernacular photography appear to have either disappeared or been absorbed into complex hybrid assemblages. However, this chapter will demonstrate how vernacular photography remains engaged with circuits of labour, value and productivity. As discussed in the literature review, despite the projection of immateriality by the technoscience industries, these technologies are central to the (re)production of socio-material relations under late capitalism. To identify the agency of commercial institutions in networked photography, our analyses must be attuned not only to the objects and devices of networked media, but as Kember and Zylinska (2012, 1) argue, to the 'interlocked and dynamic processes of mediation.' Revealing a broader condition of networked photography, Snapchat's focus on ephemerality highlights the role of photographic mediation as a continually modulating

interface between individual desires and commercial imperatives. Drawing on the framework of mediation offered by Kember and Zylinska (2012), alongside Deleuze's (1983) concept of deterritorialization, this discussion will illustrate how the productive effects of networked photography go much deeper than exposure to advertising imagery measured through 'eyeballs' or 'impressions' (Partridge and Begole 2011). Combining a Marxian analysis with a processual understanding of our socio-technical entanglements, networked photography is understood as productively reconfiguring subjectivity through the continuous mediation of our actions, emotions and desires. The case study of Snapchat demonstrates how deterritorialization creates new productive potentials of photographic mediation, but also how these have been instrumentalized as a strategy of generating value within the axioms of capital.

Greetings from a pet fish

The vertical and horizontal integration that characterized Kodak's business for much of the twentieth century, by which they controlled each step of the photographic process and multiple markets segments, finds no clear analogue in today's photographic marketplace. Counter-intuitively, as the technologies of vernacular photography are seemingly collapsed onto a single device for controlling the entire creative and distributive process (Cruz and Meyer 2012), the number of companies involved has expanded dramatically, including some for which photography is only tangentially relevant as part of the broader ecosystem of telecommunications and networked media (Sarvas and Frohlich 2011; Villi 2015). The acquisition by Facebook of Instagram in 2012, and WhatsApp in 2014, has provided it with a substantial portion of the photo-sharing and messaging market. However, competitors such as Snapchat, WeChat and Flickr still attract a considerable number of active users (Meeker 2017). Photography's convergence with the smartphone has also given a

significant amount of control to a number of technology companies previously absent from the photographic industry, such as Apple, Samsung, Huawei and Sony, who design and develop such devices. Beyond these, we might continue to include the companies that produce the operating systems that serve as part of the core infrastructure of networked photography; the cloud computing services of companies such as AWS ('Amazon Web Services') which host our data (Srnicek 2016); the telecommunications companies that manage the transfer and circulation of data; and the outsourced companies that actually manufacture our devices and their components (Fuchs 2014).

The current media environment points to a more nebulous and ill-defined relationship between capitalism and vernacular photography. Images are captured, produced and distributed at near-zero cost to the user. We are not charged by Facebook or Instagram for their hosting services and no tangible materials appear to be consumed in the act of producing a photograph. The smartphone is certainly a prized commodity of our time, but the camera's value is obscured in this multi-purpose assemblage, which in turn is often included as part of a service agreement that further masks its true cost. Despite the magnitude of current photographic activity, the once clearly delineated industrial base has dispersed, with photography 'now serviced by an industry which regards it as marginal' (Hodgson 2020, 280). We might ask as such where the commodity of vernacular photography can be found in the context of digital and networked imaging. How can networked photography be productive when the necessary reciprocal concept of value has seemingly fallen out of the picture? As this chapter argues, to answer these questions we must examine how commercial actors have created new circuits of labour and value within the broader framework of networked communications. With the commodity value of the single image diminished by continually replenishing streams of visual data (Lister 2013), new modes of productivity have formed that

capitalize on the user's ability to mediate their experiences with greater velocity and volume than previously imagined. Through the smartphone and the social networking platform, photography's value emerges not through the individual image, but through its contribution towards a media environment that is characterized by continuous mediated interactions.

In reckoning with the shift from chemical and print based to digital and networked photography, methodologies from ethnography, visual culture and STS (science and technology studies) have been particularly prominent in academic research (Larsen 2008; Pink 2011; Van House 2011). Despite their differences, these methods have in common an understanding of photography as a fragmented and multifaceted phenomenon. Rather than seeking a singular ontological foundation of photography, they aim to investigate the range of heterogeneous factors engaged in producing the photographies that exist in various cultural contexts. Research from these methodological approaches has provided a significant framework for conceptualizing the role of networked photography in daily life, with mobility, ephemerality and intimacy forming key motifs (Murray 2008; Larsen 2008; Pink 2011). Less attention, however, has been paid to the agency of commercial actors in producing and promoting these new modalities of photography.[10] Whereas the relationship between capitalism and networked communication in general has been discussed through concepts such as 'digital labour' (Fuchs 2014), 'communicative capitalism' (Dean 2008), or 'platform capitalism' (Srnicek 2016), these have often remained at one remove from the particulars of photography.

Snapchat serves as a useful case study to focus our attention on the relationship between vernacular photography, networked culture and commercial

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[10] There are, of course, significant exceptions to this statement, including works by Paul Frosh (2003), Sarah Kember (2012, 2018), Edgar Gomez Cruz (2017) and Katrina Sluis (2020).

imperatives. Self-described as 'a camera company' (Snapchat 2020a), Snapchat foregrounds the role of photographic media in networked and mobile communications. However, whilst the camera is a central feature of Snapchat's marketing and promotion, the photograph is notably absent, rarely if ever used in the discourse they circulate for consumers and investors about the platform. Instead, another term from photographic discourse takes its place, the lighter and more colloquial 'snap'. An abbreviation of the term 'snapshot', which appeared as early as 1860 (Zuromskis 2020), snap has long been used as both a noun ('to take a snap') and verb ('to snap a picture') of photography. In contrast to the photograph, which has always traversed multiple fields at once, the snap does not tend to operate outside of the vernacular, describing the rapidity and ease of operation of the mass-consumer 'snapshot camera' (Sarvas and Frohlich 2011). Bearing less historical and institutional weight than the photograph, the snap can more freely accrue and shed meanings, whilst maintaining an association with the social and cultural significance of photography. The value of this discursive manoeuvre becomes apparent as we consider how Snapchat emphasizes the interpersonal and communicative dimensions of photography, while removing the burden of truthful or indexical representation that the photograph has historically had to carry.

Launched in 2011, the distinguishing feature of Snapchat was the time-limited nature of its images, described in the media as their inbuilt 'self-destruction' (Benedictus 2013; Wortham 2013). Visible for only ten seconds, Snapchat's images were automatically deleted from the receiver's device once this time had elapsed. The unseen image could be left on the device indefinitely, however, once the file was opened, the duration of the viewing window was strictly limited. In addition to the time restrictions imposed by the sender, the receiver was also required to maintain touch contact with the screen whilst viewing the image, a feature termed 'touch-to-view' (Snapchat 2015a). In the

case of either the user ceasing to maintain contact, or the ten seconds having elapsed, the image would disappear. Snapchat's self-destructing images challenge many of the historical narratives of vernacular photography. At a philosophical level, Bazin's (1960) embalmer of time is nowhere to be found, and neither is the 'that-has-been' of Barthes (1981). The bindings unravel before the image can be preserved, dissolved before the present-absence of a lost moment can prick and wound the spectator (Barthes 1981, 26). At a cultural level, there is no stable material plane upon which significance and meaning-making might flourish, no chance for the accrual of invested desires as the image bypasses the archive (Chalfen 1987; Derrida 1995; Edwards 2004). How can the event be memorialized or grafted into an extended narrative of our lives, when the lasting object that these cultural and social practices depend upon has been removed?

Snapchat is part of what might be termed the *disappearing image* of vernacular photography. In a straightforward sense, far from disappearing, we are witnessing the proliferation of more photography than ever before; a constantly swelling deluge of images in which Snapchat alone accounts for the production of some 4 billion snaps per day (Snapchat 2020b). What is therefore meant by photography's disappearing image is a destabilization of vernacular photography as the production of fixed images that faithfully represent their subject. Of course, this concept was always to an extent a useful fiction for expounding photography's virtues. As discussed in Chapter 1, the natural representation of reality that photography purported to produce was based on a disavowal of the performative labours that were invested in the image. Furthermore, the photograph has always been a polysemous object, whose meaning is contested and redefined over the passage of time. However, the value of these narratives are increasingly challenged by new narratives (such as those proposed by Snapchat), in which photography is no longer asked to be

a fixed container of meaning. Instead, it is woven into the fabric of lived experience, the representational image replaced by a perpetual flow of mediation. As Snapchat CEO Evan Spiegel (2014a) claims, 'We no longer have to capture the "real world" and recreate it online – we simply live and communicate at the same time.' Revealing a rejection of the separation between everyday life and its mediation, this statement speaks to a blurring of lines that shifts the value of photography from a documentation of life so that it may be imbued with significance, to an extension and enhancement of life itself. The ephemerality and intimacy of Snapchat can therefore be understood as a strategy of drawing photography closer towards us, of collapsing the distance between our immediate desires, fears and beliefs, and their photographic mediation.

Snapchat promotes a vision that challenges photography's historical association with mnemonic and archival desires, but also the remediation of these desires in competitor platforms such as Instagram or Facebook. By focusing on intimacy and ephemerality, they operate in opposition to the perception of photo-sharing on social media as public and performative: 'We believe in sharing authentic moments with friends. It's not all about fancy vacations, sushi dinners, or beautiful sunsets. Sometimes it's an inside joke, a silly face, or greetings from a pet fish' (Snapchat 2012). Snapchat contrasts the performative nature of 'permanent' social media against the authenticity afforded by 'temporary' social media. Rather than perform an idealized self to the world, the ephemeral and private networks of Snapchat are premised on the idea of freeing the self to act authentically and spontaneously through photography: 'We're building a photo app that doesn't conform to unrealistic notions of beauty or perfection but rather creates a space to be funny, honest or whatever else you might feel like at the moment you take and share a Snap' (Snapchat 2012). Crucially, however, the concept of performing for the camera

is not absent from Snapchat but reframed as something that is an acknowledged and embraced part of photographic mediation. The authenticity of Snapchat does not emerge from acting as if the camera were not there, but from performing without restraint for the camera.

To illustrate this distinction, we might compare the most popular Instagram filters against the most popular filters and lenses of Snapchat. Instagram's two most popular filters in 2020 were Clarendon and Gingham (Canva 2020). Clarendon adjusts the brightness, contrast and saturation in order to subtly heighten the aesthetic impact of the photograph, emphasizing its colours and shadows to make a more arresting image. By contrast, the Gingham filter washes out some of the colour, desaturating the image to mimic earlier photographic technologies, thereby providing a 'vintage' or 'retro-feel' to the photograph. Popular in a myriad of apps beyond Instagram, such filters 'emulate the processes of analog photographic cameras, techniques and prints' in order 'to signify technical skill, the mastery of the photographic craft and a uniqueness of the image that does not exist' (Gillies 2020, 318). The Gingham filter in particular demonstrates a desire to remediate the materiality and weight of the photographic object, seeking to capture some of the lustre from a photographic past when the singular image held greater value. By contrast, in 2016 Snapchat revealed their ten most popular 'lenses' to include a lens that added a 3-D crown of flowers, one that combined dogs features with the user's head and a face-swapping lens (Flynn 2016). Combining artificial intelligence with visual effects, Snapchat lenses produce an augmented reality centred on the user. Held up against our face, the screen of the smartphone becomes a comedic version of the black mirror, in which our faces are reflected in real-time, augmented with different costumes, masks and faces. Despite the complexity of the algorithms used to map these augmentations on to the subject's face, these visual effects are not meant to trick or convince the viewer

of their veracity. Instead, Snapchat engages its participants in a playful performance, with pleasure coming from the instantaneous and magical transformations that occur to the self. The authenticity that Snapchat promotes does not emerge from erasing the act of mediation or from disavowing the performative element of photography, both of which are acknowledged prima facie. Authenticity is derived instead from accepting photographic mediation as a central part of relationship and identity building.

Ephemerality has remained a key principle of Snapchat's platform, even as it has expanded and gained a broader range of functionalities. To briefly summarize some of these, text and video messaging were incorporated into the platform, as was the overlaying of text, graphics and emojis on the image, creating the mixed-media style of Snapchat that became one of its distinctive features. Alongside the communication of individual snaps between contacts, Snapchat Stories was introduced as a means of sharing images and videos for unlimited viewing over a longer period of 24 hours, viewable as a succession of moments moving from the oldest to the most recent (Snapchat 2013). Snapchat Discover (Snapchat 2015b) introduced editorialized content from external media companies into the users Stories page, in one of its tentative steps towards monetizing the platform. This was shortly followed by the augmented realities of Snapchat Lenses, as holographic and cartoon masks, text and graphics were layered both onto and into the image. Chosen and saved directly from the live stream, these images are shared and circulated both on the platform and beyond. Detached from the evidentiary and indexical discourses that have often served as its driving mythology, photography comfortably slips into the domain of parlour tricks and performance, drawing attention to itself as a transformative and active agent in how we view ourselves in relation to the world. Perhaps just as significant, for Snapchat at least, were the development of Sponsored Lenses and Sponsored Filters that

imbricated branded events and commodities into this performance. As the gap between photography and everyday life closes in a continuous flow of mediated performances, so too does the gap between subjectivity, desires and commodities. As the next section examines, this collapsing of the boundary between photography and everyday life is a vital part of networked photography's productivity.

Networked Photography

Networked photography denotes multiple facets of contemporary vernacular photography simultaneously: a network that images move and multiply within, enabling their appearance in multiple concurrent locations (Rubinstein and Sluis 2008); a network of images, with each photograph connected to and always pointing to another, yet to be seen (Lister 2013); a network of people between whom the sharing of images fosters and reinforces a sense of connectivity (Okabe and Ito 2005); and a network of mobile devices enabling new mobilities of photographic consumption and production (Pink 2011). The veritable explosion in the number of photographs that are now produced and shared is intimately connected to these networked characteristics of vernacular photography (Cohen 2005; Rubinstein and Sluis 2013), with social media and photo-sharing platforms having become the dominant spaces of photographic practice. The rapid adoption and naturalization of these practices has rendered superfluous such prefixes as 'networked' and 'digital' in popular discourse, anachronistic designations from a moment before their widespread ubiquity. It might also be noted that non-networked photographies are now called to bear this burden of exceptionality, through terms such as 'film', 'analog' or 'old-school' photography, as they are repositioned as forms of residual media (Williams 1973). As the novelty of digital and networked photography has receded, consuming and producing networked images has become a

naturalized part of daily rhythms and routines (Murray 2008; Van House et al. 2005; Kindberg et al. 2005).

In capturing the image through networked devices, the image is always already in some sense a part of the network. Its circulation and multiplication within the network is an integral and constitutive aspect of its materiality, even when this potential remains latent and the image fails to proceed onwards from its departure point, as in the case of deleted images that fail to meet our expectations (Rubinstein and Sluis 2008) or images that are too revelatory, painful, or risky to let loose in the network (Vivienne and Burgess 2013). As images are inscribed into the network itself, we cannot heuristically separate the image from the network without missing key aspects of its character. We cannot therefore say that the image simply moves through the network, as if positing two separate phenomena, for this would miss the degree to which becoming networked is now deeply imbricated with the meaning and matter of photography.

In characterizing the networked image, Daniel Rubinstein and Katrina Sluis (2013, 156) argue that the photograph accrues and sheds meaning as it moves within the network, transforming the image from a holder of relatively stable, symbolic meanings, into an 'unstable surface that produces meaning not through indexicality or representation, but through the aggregation and topologies of data.' For Rubinstein and Sluis, the meaning of the networked image is continually destabilized and multiplied as it is reproduced throughout the network; an expanding series of differentiations without original, as data and metadata is appended to the image as it circulates between different devices and platforms. The image never reaches a point of completion as a singular signifying object or stable container of meaning, but is far leakier and porous, remaining always 'incomplete and processual' (Rubinstein and Sluis

2013, 154). This concept of the networked image as 'incomplete and processual' elides the way that polysemy and instability always already inhabited the photographic image (Holland 1991). It also possibly overstates the diminishing significance of representationalism to the discourses and practices of vernacular photography (Rose 2010; Lister 2017). Rather than seeing these aspects (polysemy and instability) as fixed properties of the photographic, it might be more useful to consider these as variable qualities that are either heightened or suppressed in the different practices and processes of photography. As such, whilst Patricia Holland (1991) argues polysemy and instability were ever-present features of vernacular photography, these facets were often suppressed by both commercial narratives that valorized the mnemonic and archival functions of the image (West 2000) and by governmental narratives that emphasized the evidentiary function of photography (Tagg 1988). What we appear to be witnessing at present, however, is a greater acceptance of instability on the part of commercial actors engaged in the production of vernacular photography (van Djick 2008). Whilst previous discourses of vernacular photography had aimed to construct a sense of the image as a fixed container of meaning, networked photography seems to take such stability as a restriction to the continuing dynamism and productivity of the image as it circulates and multiplies within the network.

The 'unstable surface' (Rubinstein and Sluis 2013, 156) of the networked image is indicative of how photography's convergence with networks has made uncertainty and indeterminacy a vital feature of vernacular photography; of how the accrual of data around the image becomes a fundamental aspect of how meaning and value are generated:

> As the digital image traverses the network, it brings forth new opportunities for classification, new assemblages, new aggregations […]

> Each retweet, reblog, rating or tag generates further metadata which can amplify the intensity of the image, its reproducibility, and create topologies between images.
>
> (Rubinstein and Sluis 2013, 154)

The frozen image of photography becomes sticky, attracting aggregations of semantic data that transform how we read the image, the context of its reception, and the meanings we search for within it. As Michelle Henning (2018, 135) writes, 'It is not just that there are innumerable networked images, multiplying, reproducing and being produced and circulated, but that the image itself is a multitude, a growing and changing mass of data.' Whereas the polysemy of the image was suppressed behind the smooth plastic covers of the family album that sought to fix its meaning, networked photography seemingly relies upon the constant reconfiguration and reinvention of the image for its continued currency.

Bolter and Grusin's (1999) theory of remediation emphasizes the drive towards either *immediacy* or *hypermediacy* as the operating logics of media development, each subsequent technology of mediation offering greater access to the real than its predecessor. The networked image can be framed in this narrative, as a remediation of photography that is more immediate in terms of both its production and circulation. The captured image not only appears on the screen, but can be sent and viewed across multiple devices across the world in a matter of seconds. However, as per the overall argument of this thesis, it is more useful to frame remediation around the concept of productivity; each new medium building on the productive potential of its predecessor, whilst simultaneously disrupting and reconfiguring this to unlock different productive potentials. Bolter and Grusin's (1999) collapsing of remediation onto the plane of hypermediacy and immediacy elides the political economy of media, with

oscillations between these two poles obscuring the productive force of new media. They argue that in cases of repackaging older media, there is an ideal of identity between the old and new incarnation (e.g. digitized versions of paintings or mp3 versions of vinyl recordings). However, viewed through the lens of productivity this analysis is flawed; even the process of repackaging is an attempt to extract further value from the object through reconfiguring its meaning and materiality (e.g. the mp3 is significantly cheaper to produce and distribute than its predecessors).

This thesis therefore understands the becoming networked of photography as the accrual of new productive potentials, some of which rely on and build on the socio-materiality of its predecessors, whilst others point towards a destabilizing of the meanings embedded in photographic history (Rubinstein and Sluis 2008). Whereas some features of photography are carried over into the networked image, others are decoded to enable the release of more dynamic flows that make photography more productive. Deleuze and Guattari's concept of deterritorialization can be used as a way of framing this process. Deterritorialization involves the dissolution of structures, codes and signifiers that constitute a territory, understood as a pattern of action or organization of relations. Capitalism, for Deleuze and Guattari (1983, 240-62), works through deterritorializing structures that prevent the continuous expansion of its productive potential, liquefying all social and material relations into the abstracted relations of labour, capital and productivity. Crucially, this liberation from the coded flows of prior epochs, 'of the divine earth or terrifying despot' is recaptured, or reterritorialized within the axioms of capitalism, in which 'capital appears as the origin or ground from which all relations emanate' (Colebrook 2006, 127-8). These forms of deterritorialization that occur under the auspices of capitalism are deemed 'relative' by Deleuze and Guattari (1983), as the decoding of social structures is linked to a teleology of increased

productivity and value extraction. In other words, deterritorialization is always relative to the grounds of capitalism: 'The great mutant flow of capital is pure deterritorialization, but it performs an equivalent reterritorialization when converted into a reflux of means of payment' (Deleuze and Guattari 1983, 374).[11]

Viewing remediation through this dual process of deterritorialization and reterritorialization, the networked image can be viewed as photography being made more productive through destabilizing the image as a fixed container of meaning destined for the archive. By deterritorializing the photographic image, different forces and desires can be channelled through photography. The encoding of vernacular photography that was produced through Kodak culture is eroded, as the archival and mnemonic functions of photography are joined by the fleeting and ephemeral mediation of the present (Villi 2005). What was referred to in the previous chapter, via Kember and Zylinska (2012), as the sanctioning of cuts by Kodak (e.g. of leisure, the family and positive growth), can be understood as a territory of photography that must be decoded to facilitate deeper cuts into the flows of desire. As contemporary photographic networks, such as Snapchat, emphasize the mediation of presence and the immediacy and intimacy of relationships mediated through the image, the archival value of the image is decentred to make way for more conversational and fluid modes of photography. As one Snapchat blog post states:

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[11] As will be discussed in Chapter 4, deterritorialization can also refer to the decoding of structures for revolutionary aims, a breaking free from rigid constraints that place us at one remove from the multiplicity of desires we possess. Whilst deterritorialization is a central process of capitalism for Deleuze and Guattari, it is also through deterritorialization that the grounds of capitalism might be escaped: 'It will be a decoded flow, a deterritorialized flow that runs too far and cuts too sharply, thereby escaping from the axiomatic of capitalism' (Deleuze and Guattari 1983, 378).

> That media object, say, a photo, is the *ends* of dominant social media, but merely the *means* for services that are ephemeral, letting the media object fade away and making disposable the very thing that other services are built upon. Like the proliferating selfies, the actual photographic object is merely a byproduct of communication rather than its focus.
>
> (Jurgenson 2014, para. 8)

In disposing of the photographic object, Snapchat seeks greater flows of communication passing through its platform. The fading away of the media object, or the disappearing image of vernacular photography, signals a deterritorialization of photography by reconfiguring the dynamics of photographic mediation towards the immediate, the intimate and the transitory. Rather than simply a change in representational mode, the networked image suggests different temporalities of mediation that change how we relate to the world and the available types of cuts we can make within it (Kember and Zylinska 2012).

Networked photography does not therefore refer to an intrinsic or ontological characteristic of the image, but more broadly to the ways photographic mediation has been reconfigured through new socio-materialities and the changing modes of productivity these give rise to. We might once again consider Ignaz Cassar's (2012) description of the teleological imperative of photography as the emergence of a stable representational plane through which our latent desires are resolved. Here, Cassar's articulation of photographic mediation seems inadequate to capture the continuing dynamism of the image as it moves through the network and the desires that remain with it long after its emergence. As Kris Cohen (2005, 885) argues, rather than a single arc that moves from desire to image, 'the picture of photography looks perhaps more like a constellation'. For Cohen, photographic images do

not hold a singular position as the desired ends of photography, but are part of a more nebulous dynamic of desires: 'Photography produces photographs as effects, but isn't necessarily superseded by them and doesn't even seem to be the necessary cause of them' (Cohen 2005, 896). The continuing productivity of the image after its emergence may not be unique to networked photography (Edwards 2004), but the active reconfiguring of the image as part of an ongoing process of mediation, rather than its ends, does speak to a particular dimension of vernacular photography in networked cultures.

Smartphone Photography

The smartphone is an essential part of the assemblage that Snapchat, alongside many other photographic platforms, operates within. Understanding the productivity of Snapchat entails accounting not only for its relationship with the networked image, but with the mobilities of image making and sharing that the smartphone has enabled. Photography's convergence with the smartphone, a device that has been accepted into our lives with a degree of intimacy rarely seen before (Beer 2012; de Reuver et al. 2016), has played a central role in domesticating and naturalizing the practice of consuming and producing networked images. Domestication refers to the way in which media must be 'pressed into the enactment of already existing social relationships' (Silverstone and Hirsch 1992, vii), before they might subsequently create new ones. This process entails a degree of reciprocity between old patterns of behaviour and the introduction of new technologies, which must negotiate their way into our lives before possibly transforming them. In the case of the smartphone, there is a multivalence to this negotiation, as multiple forms of media coalesce through the device simultaneously (de Reuver et al. 2016). The smartphone plays a key role in the incorporation of networked photography into our lives. However,

the inverse is also true, with photography playing a key role in the insertion of smartphones into our patterns of media consumption.

David Beer (2012) argues that our attachment to mobile devices has moved beyond their 'instrumental power' or functionality; they have become what Sherry Turkle (2007) describes as 'evocative objects' which we have developed embodied and emotional resonances with. Echoes of the photograph as a treasured material object can be heard in Beer's account of the 'evocative smartphone', possessing a social and emotional history whose power comes not only from its functional ability to represent, but from its physical presence both in the home and near the body (Batchen 2004). The 'physical intimacy of touch' (Batchen 2004, 49) that the handling of lockets, albums and frames provoked, find their equivalent (though not identical) manifestation in the swiping, pinching and prodding of the screen that alters the way the image is displayed. In making such a connection, we might suggest that the smartphone remediates not only the functionality of photography, but also its affective and sensual dimensions as a richly significant material object. As vernacular photography plays as integral a role in domesticating the smartphone, as the smartphone has in domesticating networked photography, we are talking about a certain hybridity between media forms, rather than a subsumption of one by the other.

Daisuke Okabe and Mizuko Ito's (2005, 257) ethnographic study of mobile phone use speaks to an aspect of this hybridity through the concept of 'ambient virtual co-presence'. This concept denotes how a feeling of togetherness is produced across different geographical locations through the network, with communities of users creating a space of shared awareness of one another through sharing photographs of their immediate experiences (Okabe and Ito 2005). In this study, sharing images through the smartphone becomes part of

an ongoing performance that transforms our everyday experiences into opportunities for strengthening our sense of connectedness. The ambient nature of this communication refers to the dialogic content of interactions being less significant than the signalling of 'presence' to the other. Echoing this sentiment, Vincent Miller (2008, 395) frames these communications as part of a rise in 'phatic culture', in which, 'more important than anything said, it is the connection to the other that becomes significant, and the exchange of words becomes superfluous.' In both of these accounts it is the ritual act of sending and receiving messages that functions as the primary signifying practice, often taking priority over any particular meaning contained in the content of the message. As part of these ritualized acts, there is an expectation of reciprocity in sharing that can lead to disappointment and resentment when not reciprocated (Rose 2010, 68).

As Mikko Villi (2012) argues, text-based practices with mobile phones have been translated into forms of photographic communications. Whereas phatic communication was predominantly performed via texting (and to a large extent still is), photography has become an intimate and integral part of these communicative practices as MMS (multimedia messaging services) have become more affordable and accessible (Villi 2012, 2015). Enabling a mode of communication that is not dependent on language for its expression, photography affords the possibility of mediating our emotions and experiences using the facial gestures and visual cues that are more associated with a conversation grounded in a particular location. The photograph as a form of 'mediated presence' does not supplant the textual, but often supplements it, providing a shared point of reference for communication and dialogue (Villi 2015). Drawing on James Carey's concept of 'ritual communication', Villi (2012, 43) argues that as a result of its integration with the apparatus of mobile telecommunication, 'maintaining connections and relations with other people'

has become a central part of photographic practice. Accordingly, the 'practices of camera phone photography and communication cannot be explained only by the conventional modes of photography […] but rather by practices familiar from verbal mobile communication' (Villi 2015, 3). At points in this argument, photography risks being subsumed under the apparatus of mobile communication, an 'added visual dimension' for 'communicating in the present' (Villi 2015, 1). However, the cultural agency of photography plays a significant role in these hybrid assemblages that exceeds a notion of the 'visual'. The representational significance of the photograph, alongside other signifying practices - such as the evocative qualities of the photographic object - are reconfigured, rather than replaced, in the practices of networked and mobile photography.

Entering the networked discourses of 'ambient co-presence' and 'phatic culture', photography produces particular mediated subjectivities which draw additional significance from its present and live qualities, dimensions that are actively emphasized in communication through the Snapchat platform. As Snapchat (2012) claim, 'There is value in the ephemeral. Great conversations are magical. That's because they are shared, enjoyed, but not saved.' This recourse to a conversational mode of photography becomes a key trope of Snapchat's platform. Rather than operating as an archive for the past, produced for an anticipated future reading, the image in Snapchat is framed directly as a means of communicating a sense of presence. Losing the expectancy of being cherished as a memento for future practices of remembrance and nostalgia, the image becomes a vehicle for communicating in and about the present without the burden of posterity. Snapchat's strategy in particular has involved reframing photography as a communicative act that is increasingly divorced from the desire to create lasting media objects. The absence of the object is promoted by Snapchat as a means of making our photographic encounters

more authentic and intimate, as opposed to the public and performative nature of social media. In this way, Snapchat's outward aim appears to be the creation of a ritual of communication grounded in authenticity, intimacy and close contact.

Whilst heightened in the example of Snapchat, the move towards narratives of intimacy and authenticity is seen across practices of smartphone photography. With individual rather than collective patterns of ownership over our mobile devices being the norm, and through their close and continuous presence by our side, the smartphone has reached a significant degree of intimacy with their users that the single purpose camera usually never had (Palmer 2005). The production of the family album as a singular, coherent and authoritative archive, has given way to individualized photographic narratives that are seemingly more willing to embrace life through its more ordinary and painful moments. As Lin Prøitz (2011) examines, the family pictures taken by teenagers often go against the grain of the family narrative, which had historically been managed and constructed by their parents. Presenting a seemingly 'un-choreographed' record of family life, these images are notable by the mundanity and triviality of subjects and the absence of any 'attempt to glorify or embellish the self-presentation of the family' (Prøitz 2011, 199). As Daniel Palmer (2010) has also noted, the practice of vernacular photography through the camera-phone has reversed the trend identified by West (2000) in Kodak to erase the negative moments from our lives, increasingly embracing the mishaps, accidents and minor traumas associated with less positive memories. The significance of the photograph as part of an archival practice for constructing a version of the past is joined by the need for photography to communicate our individual emotional needs and desires at any given moment.

This conversational tone has also been articulated as part of an ephemeral turn in photography; a focus on the fleeting and transitory moments of life, rather than an emphasis on rarefied events (Murray 2008). As Susan Murray (2008, 157) argues, 'It is now possible to affordably and reasonably incorporate the taking of photos into your everyday life rather than saving film for 'special' moments.' This change registers visually as an 'everyday aesthetic […] that privileges the small, the mundane, the urban, and the industrial' (Murray 2008, 161). However, ephemerality goes beyond the representational or aesthetic qualities of the image, what is often seen as the banal and repetitive imagery of contemporary vernacular photography, to a change in the temporal and locative dimensions of mediation. According to Sarah Pink (2011), contemporary practices of vernacular photography necessitate a more engaged focus on movement than is often articulated in our theoretical understandings. Rather than examining the image as a static and visual object of inquiry, Pink (2011, 9) argues for an understanding of how 'they are created through movement, they stand for movement and they are viewed in movement.' This need for a concept of motion is also echoed by Jonas Larsen (2008, 143), who argues that 'the practices and flows of photography are rendered invisible', in a theory of photography that has tended to focus on static representational planes, over processes of 'production, movement and circulation'. This concept of movement is not exceptional to contemporary photographic practices, but is essential to understanding how photography is remediated through the smartphone and the mobilities of producing, sharing and consuming images it enables (Pink 2011).

The ephemerality of smartphone photography, more than a representational framework of the image, speaks to a transient form of mediation in which bodies, cameras and images are always in and of motion, intersecting to create new forms of signification (Pink 2011). These mobilities of production,

circulation and consumption coalesce in the smartphone, deterritorializing the concept of what constitutes a photographic event. As discussed in Chapter 1, the photographic event has historically been delineated clearly in time and space. For example, the codified theatre of consumption enshrined in the family album kept securely at home (Edwards 2004), or the ritualized performance of togetherness enacted by the family at leisure or on vacation (Bourdieu 1990). However, the knots made in time and space by the apparatus of snapshot photography have seemingly been loosened by the new mobilities afforded by the smartphone. The constitutive elements of the 'visual-place-event' (Pink 2011, 8) coalesce more tentatively, but also almost continuously in these new modalities of vernacular photography. Outside of the centralized narratives of the photographic event instilled by Kodak, transitory moments of 'in-betweenness' come to be infused with photographic potential.

These reconfigurations of photography, of destabilizing the photographic object and the photographic event are integral aspects of the Snapchat platform. As Snapchat claim, 'By diminishing the importance of the media object, by making it disposable, the emphasis is placed on communication itself' (Jurgenson 2014, para. 9). Alongside this diminishing of the photographic object, a keen emphasis is placed on time outside of pre-established 'photo-worthy' communal leisure activities: 'What is often thought to be the boring, mundane parts of everyday life are instead profoundly important. Minor social groomings make up the textures of our lives: saying hello, smiling, acknowledging each other, our faces, our stuff, and our moods from good to bad' (Jurgenson 2014, para. 13). Snapchat is framed here as being able to attend to the minutiae of hidden moments in daily life, extending the photographic eye into the detail of our interactions and gestures akin to a microscopy of the social. What might be thought of as the peripheral mattering of life, the fleeting and transitory debris of habits and routines, moves us closer to the centre of

how the self is experienced and defined. As Esther Leslie (2016, 171) examines, drawing on the works of Siegfried Kracauer, 'The self of modern life is built up out of tiny bits of rubbish, of hurtful glances, of bumps on busy streets, of signs glimpsed out of the corner of the eye. There is a continual flow of influence, an endlessly orienting and reorienting pressure forming a human life course.' The decoding of the photographic event goes beyond an aesthetics of the mundane; it brings photography that much closer to life and liveliness, entangling itself deeply with the performance and formation of the subject.

Photography becomes an almost ubiquitous and permanent condition of living, enabling productive forms of photographic mediation to extend outside of the singular rarefied event and into the deep recesses of daily life. However, this state of ubiquity might also be read as a disempowering of photographic mediation, a suppression of photography as a productive and differentiating force in the flow of mediation. By grounding its temporality and duration in an ahistorical present, photography is unable to prolong its force into future modes of becoming. Rather than the *anticipated future readings of the past produced in the present* that we might read in Kodak, and the roaming temporality and historicity this suggests, the instantaneity and interconnectedness of smartphone photography signals an overcoming of this temporality; a photographic practice made in and of the present (Villi 2015).

We are therefore left with two countervailing narratives of contemporary vernacular photography as remediated through the smartphone and the platform of Snapchat. On the one hand we have a productive sense of representationalism being overrun by an entanglement of life and photography that precludes their separation. On the other hand, we might consider the absence of a prolonged duration, that is at the centre of Snapchat's self-destructing images, as a preclusion to the transformative potentials of

mediation. How can mediation be connected to a creative horizon of becoming (Kember and Zylinska 2012), when it seemingly disavows any sense of the future? This is not to argue that temporality or duration disappear from the discourse of Snapchat, indeed these are its most defining characteristics. However, the temporality that Snapchat inheres is explicitly codified and restricted, with images emerging instantly and bearing a fixed durational quality. If it is the 'uncertain boundaries' (Drucker 2010, 25) of mediation that give photography its transformative potential, is this indeterminacy lost through the fixing of such durations?

To return to the conceptual framework of Deleuze and Guattari (1983) outlined above, these countervailing threads can be viewed as two aspects of a process of deterritorialization and reterritorialization; the decoding of vernacular photography's structure enables its closer entanglement with our desires, but only to the point that these can be recoded within the axiomatics of capitalism. Photography's deterritorialization may arc towards the possibility of radical transformation, but is abruptly stopped in its path, grounded in the production of presently felt desires and reactions. The eternal present of the networked image speaks to a reconfiguring of the subject in the mould of late capitalism; an image of fragmented and competing desires to be met through a continual reworking and reshaping of the self (Beller 2006; Deleuze 1992). As will be examined in the following section, this re-articulation of the subject as a continually modulating set of desires finds its material expression in the operations of platform capitalism, where these competing desires produce complex relations between mediation, subjectivity and data, each interwoven with the logics of commodification and productivity.

Platform Politics

Snapchat operates within a media ecology dominated by what has been termed 'platform capitalism' (Srnicek 2016): a combination of free to use and easily accessible communication services, the extraction of data from our use of these services, and the analysis of such data to target advertising back at these same users (Hands 2013). Platforms play an increasingly significant role in network culture, with companies constructing 'walled gardens', in which interactions between users take place in 'enclosed, commercialized and managed realms' (Hands 2013, 1). The decentralized and rhizomatic structure of the internet has been progressively rendered invisible behind a number of expansive, privately owned platforms, whose aim is to become the only necessary channel for its users' social and cultural needs (Hands 2013). As Ganaele Langlois and Greg Elmer (2013) argue, these platforms are constructed and controlled environments that shape how communication is performed and even what constitutes a communicative act. Our communication has become a major site of generating value, becoming increasingly commodified as vast amounts of data are harvested from interactions, extracted as key resources for subsequent advertising and marketing campaigns that are predominantly fed directly back into the platform (Lovink 2012). Platforms have formed a crucial substrate in the circulation and production of vernacular photography, with Facebook, WhatsApp, Instagram and Snapchat alone combining to account for at least 3 billion photographs uploaded daily. [12] Whilst each of these companies facilitates and promotes distinct forms of photography, they also contain overlapping features related to the structural and commercial tendencies of 'advertising platforms' (Srnicek 2016). In this framework, Snapchat's development as a broader suite of social media tools has intensified the extent

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[12] It should be noted that Facebook owned companies (including WhatsApp and Instagram) account for approximately 2 billion of these photographs (Meeker 2017).

to which it functions as a form of platform capitalism, as have recent attempts to monetize the platform through features such as Snapchat Discover, Sponsored Filters and Sponsored Lenses (Snapchat 2017a).

The concept of the platform is intimately connected to the idea of 'Web 2.0', a characterization given to the 'second phase' of the internet, driven by UGC (user-generated content) (O'Reilly 2005). [13] Web 2.0 was initially framed as enabling what Henry Jenkins (2006) describes as 'participatory media'; a growing space of mass participation in media, culture and society. However, as James Hay and Nick Couldry (2011) argue, the celebratory overtones of Jenkins' model elided important questions about the economic structure and form of this participation. Significantly absent from discussions of participatory media was the role of corporations and capitalism in the development and functioning of most platforms (Hay and Couldry 2011). Rather than a natural tendency of network culture to become something more participatory, the emergence of UGC is deeply connected to concurrent cultural and economic factors (Srnicek 2016). In short, the emergence of 'platform capitalism' takes place following the bursting of the dotcom bubble at the turn of the millennium, the ensuing realization of the limits on existing models of e-commerce, and the subsequent need for corporate interests to look for different means of capitalizing the internet (Lovink 2012).

When connoting a paradigm shift that improves the experience and agency of people online, the term Web 2.0 may indeed be just a marketing buzzword, encapsulating the centralization and monetization of a pre-existing network culture. However, Web 2.0 does appear to delineate a moment when the

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[13] Whilst the term Web 2.0. is widely contested, it is pertinent to note that for its advocates, this 'phase' is seen as having been superseded by developments in machine learning and the rise of the 'Semantic Web' (Sharmer 2012).

relationship between the internet and capitalism shifted in quite fundamental ways (Lovink 2012). It marks the point at which commerce stopped seeing the internet as a virtual extension of the storefront, facilitating novel interactions between producers and consumers, and began to focus on the interactions between users themselves as a potential site of generating profits. From the transversal movement between a multitude of smaller domains, our participation in the network was funnelled into several centralizing privately owned platforms. Formed as extended assemblages of interlinked dynamic pages, these platforms continually expand in relation to the number of their users (Hands 2013). As Joss Hands argues:

> We do not have a single Internet anymore, but rather a multiplicity of distinct platforms […] defined as online "cloud"-based software modules that act as portals to diverse kinds of information, with nested applications that aggregate content, often generated by "users" themselves.
>
> (Hands 2013, 1)

The platform is therefore not a neutral terrain for promoting social and cultural participation but is a business model in which value is generated by owning the infrastructure in which communications occur, and the opportunities this presents for extracting significant amounts of data. The value of these platforms is drawn from an ongoing process of surveillance and data collection, that is often fed back into the system through targeted advertising designed to resonate with the consumer. In this way, a key focus of corporate social media strategy is to ensure that as much user activity occurs through the infrastructure as possible, enabling the maximum collection of data. As Nick Srnicek argues:

Advantages in data collection mean that the more activities a firm has access to, the more data it can extract and the more value it can generate from those data, and therefore the more activities it can gain access to. Equally, access to a multitude of data from different areas of our life makes prediction more useful, and this stimulates the centralisation of data within one platform.

(Srnicek 2016, 95)

Unlike the horizontal or vertical monopoly tendencies of capitalism, Srnicek (2016, 102-3) argues that this 'imperative to collect more and more data', has resulted in a more 'rhizomatic' approach to acquisitions and expansions, as the platform expands to capture ever more online activity. This rhizomatic approach is also linked to the idea of 'network effects', whereby as the number of users increases, the value of the platform rises exponentially (e.g. the more people who use Facebook, the even more likely people are to use and value Facebook, and the greater proportion of time they will spend on the network) (Srnicek 2016).

Whilst this theoretical framework of platform capitalism bears directly on the economy and circulation of networked images, it elides the specific agency of photography in relation to these platforms. The above account by Srnicek (2016) renders photography homogenous with other types of data. However, photography holds a particular significance in these networks that needs to be accounted for. Two interconnected forms of photographic productivity within these platforms might be considered: photography as being productive of particular subjects and of receptive contexts. Of the latter, Srnicek emphasizes the role of data mining and surveillance in the economies of social media; a collection and analysis of data for the purpose of tailoring and targeting advertising space. Less evident is how the receptive contexts for these adverts

are constructed and the integral role of these contexts in the business model of social media platforms. Whilst Srnicek (2016, 45) identifies the role of 'network effects' in causing platforms to expand into overlapping spaces of communication, thinking of advertising in more traditional terms, and of the value of receptive contexts, elucidates some of the centrifugal tendencies towards the construction of particular communicative spaces that platforms such as Snapchat occupy.

Online advertising has been characterized by a quantitative focus on 'eyeballs' or 'impressions'. However, advertising also requires a receptive context to be effective; an environment that facilitates and encourages 'meaningful connections' between advertisements and consumers (Partridge and Begole 2011). The power of social media for advertisers is formed in part through the creation of such a context via the UGC that surrounds the advertisement and the modes of communication that are performed around it. As Kurt Partridge and James Begole (2011, 86) argue, 'Many activities are not conducive to ad presentation […] Participants are more receptive if they are relaxed and not doing anything that would incur a cost if their attention wanders.' Social media therefore works hard at obfuscating the time costs associated with its advertising, progressively blurring the boundaries between personal and commercial communications. For example, we might see sponsored content linked to by our friends, whilst on a parallel stream, paid-for advertising sits in the periphery of our vision, drawing in wandering and 'unproductive' attentions.

Snapchat uses a variety of strategies in cultivating the receptive context for advertisements. For example, Snap Ads are folded into the Stories section of the platform, sandwiched between collections of images taken by friends over the previous 24 hours. To prevent 'disruption' to the user experience,

advertisements often match the aesthetic form and style of vernacular photography. For example, marketing agencies recommend emulating the 'selfie' aesthetic, using the same smartphone cameras as everyday users to cultivate an 'organic' feel to marketing campaigns (Copeland, cited in Chen 2017). Images shared on Snapchat create a particular form of receptive context, a visual fabric of intersubjective relations into which promotional content is embedded, tapping into the affective intimacies of vernacular photography. Another format used by Snapchat is Sponsored Lenses, a tool that enables advertisers to create 'augmented reality experiences' (Snapchat 2017d) that blend the user's image with graphics and text. The receptive context is formed here in the act of producing the image: 'Sponsored Lenses offer a completely new take on brand activation, offering not just an impression, but "play time" – the time Snapchatters spend playing with the interactive ad you've created' (Snapchat 2017d). Sponsored Lenses are discussed in greater detail later in this chapter. However, they are raised here to highlight how the creation of receptive contexts is not limited to the 'theatre of consumption' (Edwards 2004, 6) but extends to the time we spend using the camera. Snapchat's concept of 'play time' is particularly striking in this regard, as time spent engaging with and creating branded imagery is not only obscured but actively promoted as part of the platform. As with other areas of networked media, play and labour are progressively blurred (Pink and Hjorth 2018), as 'playing' with the camera becomes a productive act in its own right, regardless of whether an image is ultimately produced and shared.

Alongside other social media platforms, Snapchat produces affective environments that arouse our emotions and desires, as we render visible the intimate details of our lives, continually (re)producing our identities and relationships online (Chambers 2013). Rather than being a vehicle for the exchange of information between friends, in parallel to the above discussion of

'mediated presence', these platforms function as a means of fostering emotional connections and maintaining personal relationships. As Deborah Chambers (2013) argues, through social media we cultivate 'mediated intimacies' by which we display and express our friendship through a 'highly personalized public discourse'. These 'mediated intimacies' go hand in hand with the needs of advertisers to create an affective resonance with their products (Ambler and Burne 1999). As we reveal ourselves through social media, we construct a space in which the public and private are blurred, with new degrees of visibility being given to our personal and intimate communications; a hybrid space in which advertising can be placed with a high degree of efficacy. Social media creates an environment where 'mediated relationships are articulated and negotiated through highly personalized channels of communication which, at the same time, can be highly public' (Chambers 2013, 164-5). The convergence of different social media platforms along this blurred line is indicative of a particularly productive operating space for the generation of value from our online interactions, with Facebook, Instagram and increasingly Snapchat all clustering around this hybrid space of the public and the personal.

Fostering mediated intimacies has been a central strategy of Snapchat, with privacy, ephemerality and authenticity being key features of their brand identity. However, this emphasis on intimacy and privacy has also raised considerable dissent, with fears around Snapchat's teen demographic and the ease of saving supposedly 'ephemeral' images causing significant consternation in the media and beyond. Whilst Snapchat has sought to downplay the prevalence of sexting and cyberbullying on the platform (Gallagher 2012), media reports continue to circulate that feed into broader moral panics regarding teen media use, youth subjectivities and sexuality (Charteris et al. 2018). As Charteris et al. (2018, 218) argue, the focus of these media panics is predominantly the technological apparatus, rather than

mainstream views of gender and sexuality, which play a significant role in shaping 'digital sexual subjectivities.' Recommending caution against taking a polemic position, they note that whilst 'peer exploitation is evident' in ephemeral media, so too are 'examples of youth agency' (Charteris et al. 2018, 218). What is clear, in either case, is that Snapchat and other ephemeral media are not used purely as a relay of information or visual communication, but are part of a process of constructing and experimenting with identity. Sharing images at intimate and spontaneous moments provides not only a visual fabric through which advertising can operate, but is part of a deeper process of experimentation and exploration of subjective boundaries through mediation.

In these hybrid spaces, photography is made co-extensive with the individual; a vehicle not only for representing the self, but of giving form to our emotions and desires, and of (re)producing subjectivity through an assemblage of social and photographic media. As per the discourse of Snapchat, photography in these forms does not entail a stepping outside of life for its documentation, but is an action performed within and as part of our lived experience: 'We no longer have to capture the "real world" and recreate it online – we simply live and communicate at the same time' (Spiegel 2014a). By performing for the camera, we are also producing ourselves through the camera, constructing a sense of identity that is intimately connected to the social and commercial contexts of their reception. The images which form the ever-shifting fabric of social media can therefore be thought of as momentary stabilizations of a deeper process by which photographic mediation defines the affective and social boundaries of the individual. Through social media and photo-sharing platforms, our photographs are not only productive of particular environments, but also play a significant role in being productive of particular subjects. As we create and share images, we continually reconstitute ourselves in the performance of identities and relationships. Or, as Beller (2006) might argue, we create 'zones

of intensity', through which we allow ourselves to be open to transformative desires, often actualized in the economies of platform capitalism through a process of conspicuous consumption.

At one level, we do create a patchwork of personal self-representations, 'intimate, self-expressive modes of photography […] enacted in semi-public fora' (Vivienne and Burgess 2013). Remediated through networked mobilities, the capturing and sharing of photographs online is used to produce the affective environments in which advertising might flourish (Partridge and Begole 2011; Ambler and Burne 1999). Networked vernacular photography can therefore be understood as part of constructing aspirational visions of the self through a 'continuous remodeling' of the individual's narrative (Van Djick 2008); an imperative to self-improvement that forms the fertile ground of advertising and conspicuous consumption. The remediated codes and conventions of photography are well placed to operate within the blended forms of 'personalized public communication' that Chambers (2013) describes in relation to social networks; a hybrid space that can be traced as much through the genealogy of vernacular photography, as it can through network culture (Slater 1995). At another level, however, we must also consider photographic productivity in more generative and creative terms. Through photographic mediation, we not only represent the self online, but continually redraw and reconfigure the self. We form a mode of mediated subjectivity that is performed through social networks, whose own economic imperatives become entwined with the mediated intimacies and subjectivities produced through photography. Vernacular photography is therefore more than a vehicle for self-representation, it is a means of (re)producing subjects and for the 're-organization of desire itself' (Beller 2006, 3).

Networked or otherwise, the interpenetration of representation and subjectivity forms an integral aspect of vernacular photography. However, the relative deterritorialization of photography in the networked image speaks to a different type of force being exerted on the subject than previously accounted for. The communicative modes of 'ambient co-presence' and 'ephemerality', as exemplified in Snapchat, indicate the subject being called to continually respond to transient and competing demands and desires, to remain in a permanent state of fluidity and flux. As per Beller's (2006) account of the 'cinematic mode of production', the modes of production inhered in mediation involve a deterritorialization of the unified subject into intensities; denarrativized moments of perception and affect more malleable to the demands of contemporary capitalism. Networked photography as the production of affective theatres of consumption therefore co-exists and coalesces with the generative potential of mediation to generate new subjectivities and re-organized desires, a tension between the productive value of a stable representational object and an indeterminate mediation. Whilst it is particularly the latter of these that the final sections of this chapter shall focus, it is important to keep in mind the tension between these two modes of photographic productivity.

A whole new way to see yourself(ie).

Through the disappearing image of Snapchat, we have been able to draw out more clearly the productive agency of photographic mediation as a property distinctive from the productivity of the photograph. The delineated temporality of the photographic object in the platform of Snapchat (the ten-second lifecycle of the snap, or the 24-hour lifecycle of the story), functions as a means of holding photography closely to the individual, making its intimacy with ourselves its consistent quality. Ephemerality is used as a means of

partially erasing the gap between life and photography. Erasing this gap does not mean erasing the act of mediation as a material and agential process (Bolter and Grusin 1999). The material flows of mediation are seen through the tactile interactivity of our photographic encounters, as we prod, pinch and swipe at images, or as we huddle around our devices, cradled and passed between hands (Van House 2005). The process of mediation is also called to our attention in the form of mixed media that Snapchat promotes. As combinations of text and graphics form part of the image, they demonstrate a desire not to erase mediation, but to generate and create new forms of expression that are additive and transformative of our experiences. Beyond these phenomena, there is a productivity to Snapchat that is rendered more clearly in the absence of a lasting image-object, now recontextualised as a by-product of mediation, rather than its teleological imperative. As Jurgenson (2014, para. 3) argues, 'The atomising of the ephemeral flow of lived reality into transmittable objects is the ends of the traditional photograph, but merely the means of the social snap.'

In the absence of a lasting image, we might heuristically jettison the value of the photograph as a commodity object in itself, alongside the auratic quality of the photographic image that accrues a 'social biography' (Batchen 2004; Edwards 2004). A vestige of such phenomena is remediated in the seeming permanence of data, a digital counterpart to the family album held on servers and hard drives; a history of intimacies often as difficult to part with as their printed counterparts (Rose 2010). However, the strict ephemerality of Snapchat operates by severing such links, forcing us to meet the photographic in terms of a processual and hybrid performance that continually produces the self. It is precisely this productive value of mediation that Snapchat emphasizes in its commercial endeavours. As Snapchat proclaim, 'an ephemeral network leaves the art objects to fade in favour of focusing on the moments, the experience, the communication; more social than media, more social than network' (Jurgenson

2014, para. 10). Whereas the photographic object's value was constructed through its relationship to potential pasts and possible futures (imagined or real, virtual or actual), we are called instead to account for living with and through a photographic present. To make this point from another angle, the photograph's imminent disappearance can be understood as precluding the creation of symbolic narratives that stretch above and over our lives, foreclosing the myths of unity and positive growth made in negotiation with the ideal that characterized 'Kodak Stories' (Holland 1991). Fragments that were once reassembled into an archival order are left to remain as fragments, a subjectivity that remains as disparate and disconnected moments, immanent to our perceptions, actions and emotions.

As the photographic becomes a condition anchored in the present, we are left to ask whether this leaves any space for cutting within the 'all-encompassing and indivisible' flows of mediation (Kember and Zylinska 2012, xv), or whether our photographies are now swept along in the stream? Can the remediation of vernacular photography through Snapchat be viewed as a loosening of representationalism that can offer transgressive forms of creativity that might exceed commodification? Or does such an assemblage of networks and protocols only function as an impoverished form of photography; an image without memory that requires us to continually reproduce and reinvent ourselves as consuming, fragmented and desiring subjects?

The discourse both produced by and surrounding Snapchat has been of a company functioning in opposition to the imbrication of capitalism and communications established in other social media platforms; a questioning of how the self is revealed and quantified online through the semi-public performances of identity (Spiegel 2014b). Snapchat's selling point during its initial development was as an antidote to strategies of data collection and

surveillance enacted by corporations such as Facebook.[14] For example, Viktor Mayer-Schönberger, speaking to *BusinessWeek* (Gizette 2013), speaks of a backlash against the relentless collection of data by social media companies and the role of Snapchat in reversing this trend:

> Snapchat is a perfect example of creating ephemerality. There is a real demand out there. Facebook has really failed on this front because Mark Zuckerberg, in his DNA, thinks that all data has hidden value and preserving this stuff is really, really important. He's trying to hold onto everything, forever.
>
> (Gizette 2013, para. 29)

Against the permanence of social media and the pursuit of monetizing communication, Snapchat is framed by *BusinessWeek* as almost countercultural in its ethos of ephemerality and privacy, a sentiment echoed in other media coverage (*The Guardian* 2013) and also cultivated by Snapchat themselves. In one keynote, Evan Spiegel (2014b) makes equivalent criticisms of social media to those made above by Srnicek (2016) and Lovink (2012), arguing with revolutionary zeal that 'Social media businesses represent an aggressive expansion of capitalism into our personal relationships.' However, as a heavily financed social media company, engaged in monetization and stock market speculation, what is the distinction between Snapchat and other social media platforms being made here? By examining their strategies of generating revenue, we might draw out how Snapchat has been able to adopt this position, and elucidate something further of photography's productive agency on the platform.

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[14] A claim bolstered when a \$3bn bid by Facebook for Snapchat was rejected (Rushe 2013).

Snapchat has developed a traditional apparatus of online advertising that functions broadly in line with the model of receptive contexts described above. Snap Ads offer companies space in both the Discover section of the platform (editorial content that users can opt into by choosing to follow certain media organisations) and in between Snapchat Stories, appearing as we swipe from one story to the next. Such advertising is targeted at users through data such as 'age, gender, geographical location, mobile device, operating system (Android or iOS), mobile carrier, interests, lookalikes and purchase intent' (Snapchat 2017b). The term 'lookalikes' refers here to a process of comparing user activity, such as shared content and followed brands, and inferring from these comparable footprints additional brands and commodities that fit within the user's patterns of interest (Ganguly 2015). Whilst Snapchat emphasises the anonymity of such data use, these uses of targeted advertising align clearly with other social media platforms (Cohen 2016) and can be seen as a typical example of an 'advertising platform' as described by Srnicek (2016). The distinction Snapchat makes, rendered increasingly problematic as their use of targeting and data mining becomes more intensive, is in relation to users' privacy and the particularity of their data-gathering practices.

In economic terms, the distinction in the various practices of monetizing data is relatively trivial in understanding the productive value of platforms; like their competitors, Snapchat control the platform of communication for the purpose of extracting value from interactions. However, Snapchat's focus on user activities *within* the platform itself, does speak to a possible distinction in how mediated subjectivities are framed, and the possibility of a tentative separation between the productivity of Snapchat as set against its competitors. This distinction can be seen in the absence of following users as they leave the 'walled garden' of Snapchat (e.g. via 'cookies'), a practice extensively used by Facebook and other social media platforms (Peterson 2016). Rather than

construct a representation of the user through an analysis of their data, using this as a means of uncovering the subject behind their activity, Snapchat uses data as a means of selling to advertisers precisely the mediated subjectivities of its users. There is no need to build a picture of the unmediated subject through extended data sets, for the subject is present and performed precisely in their activity *through* the network. The use of networked mobilities and ephemeral communication in Snapchat seeks directly to destabilize the separation of photography from the flow of lived experience. As Snapchat claim, 'social photography should be understood not as a remove from the moment or conversation but a deeply social immersion' (Jurgenson 2014, para 3). However, whereas the discourse of photography that Snapchat promotes is of a transparent flow between pre-existing subjects – 'a communication of experience itself' (Jurgenson 2014, para. 3) – our mediation is always a process of constituting subjects, of producing experiences, desires and beliefs. The authenticity of self-expression that Snapchat promotes is not derived from an immediacy predicated on transparency between subjects, but of an ephemerality and temporality that affords a deep imbrication with the formation of subjectivity, moving photography into a state of immanence with the performance of identities and relationships. This entangling of identity, communication and mediation is rendered clearly when examining Snapchat's other strategies of monetization: Sponsored Geofilters and Sponsored Lenses.

Sponsored Geofilters are overlays containing text, graphics and colour washes that are available when the user enters certain geographical spaces at particular times (Figure 5). These are activated, for example, at sporting events, shopping malls, tourist destinations, or graduation ceremonies. When entering these spaces, users can choose a sponsored filter that appears as part of the photograph being captured. As Snapchat (2017c) claim, 'Whether your campaign covers a specific location, a major event, or every mall in America,

Geofilters uniquely allow brands to take part in the hundreds of millions of Snaps sent between friends each day on Snapchat.' The aesthetic of Sponsored Geofilters bears an initial similarity to the overlays of particular forms of tourist photography; snaps captured at the point of descent on a rollercoaster, with decorative framing and branding signalling the name of the ride and amusement park. These earlier commercial practices functioned as both a mnemonic device for the prompting of nostalgia and as evidence of 'conquering' the rollercoaster. In both cases, the use of additional text and graphics serves to reinforce the sense of place; to anchor the image to a commercial space and to enmesh our experiences with particular branded commodities.

Commodities and experiences are woven closer together through Sponsored Geofilters, which introduces a reciprocal performativity between these elements. The graphics and branding of the filter are not added as discrete elements to the photographic object, but directly engage the user in a playful performance of mediation through these filters. Rather than the subsequent anchoring of the image to a particular brand, place or event, the process of mediation is entangled directly through the lens of the commodity as it unfolds. Combined with the dynamics of temporality outlined above, Snapchat facilitates through Sponsored Geofilters a temporary collapse between the performance of the self and the commodity, but also between consumer and producer, consumption and production. Snapchat's contention that capitalism aggressively intervenes in our online lives, and furthermore that it might counteract this tendency, only holds up in light of a fluidity and hybridity between capital and identity; that far from intervening, commodification becomes an integrative part of the flow of mediation as commercial spaces and events bleed into our photographic performances of daily life.

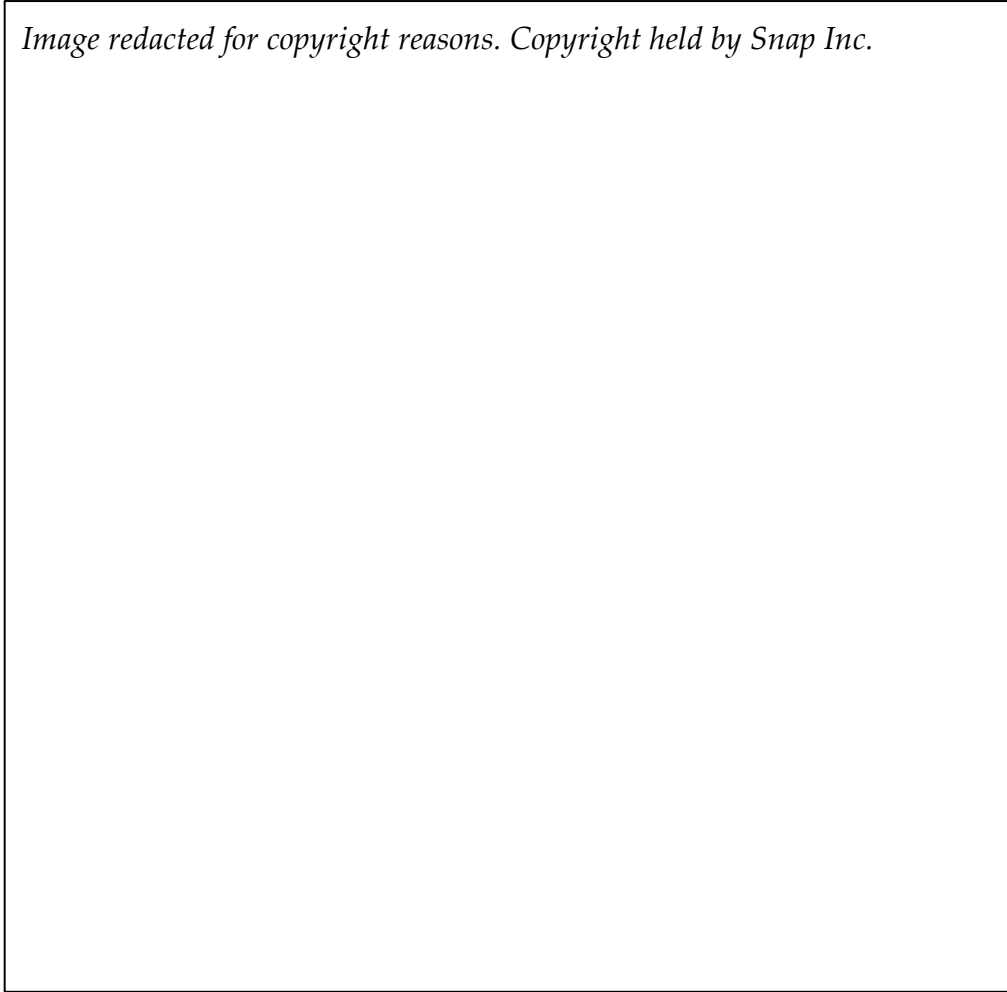Image redacted for copyright reasons. Copyright held by Snap Inc.

Figure 5. Example of Snapchat Filter, from Snapchat Business Center, 2019.

This imbrication is pushed even further in Snapchat's feature of Sponsored Lenses, in which the boundaries between vernacular photography and promotional content are blurred with an even higher degree of efficacy. Approaches from machine learning and facial recognition technology combine with 3D visual effects to construct a space in which vernacular photography converges with augmented reality. Reflected back in real-time, our faces are augmented with masks, costumes and other visual effects. The surrounding environment is also sometimes transformed, transporting us to an alternate magical realist version of our location, overlaid with bright graphics, animated sprites and bold text. Despite the algorithmic complexity of mapping

augmentations onto the subject, the intention of their design is not to be seamlessly realistic. Instead, the user is engaged in a form of hypermediated play between reality and fantasy, as user actions such as facial expressions trigger different visual effects within the frame (Snapchat 2017d). Through Peter Buse's (2010a) 'photography of attractions', originally postulated in relation to Polaroid, we can consider how the performative pleasures of photography take a central role in Snapchat's Sponsored Lenses, where photography's productive agency as a transformative phenomenon overrides our expectation of photography to remain passive and exterior to our experiences.

In the Sponsored Lenses of Snapchat, a productive agency of photography emerges from a new form of reciprocity between the subject and the camera, as our apparatus is called to participate in the construction of new identities and new worlds, creating playful and immersive interactions of the self and the commodity. As we move through different spaces, the camera's integration with capital through the 'lens' of Snapchat forms a site of photographic becoming that is shaped through commercial imperatives. Embedded deeply in the process of mediation, the hybrid photography of Snapchat Lenses is productive of subjects who are refracted through and made continuous with the commodity. As we are invited to 'paint the world around [us]' (Snapchat 2017e), we do so in negotiation with the commercial imperatives of Snapchat and their sponsors; to produce spectacular visions of ourselves transformed through consumption. These new hybridities of vernacular photography form a receptive context of advertising, not only as the production of visual artefacts that promote particular products, but as the construction of mediated identities that are interwoven with brands and commodities.

Whilst this discussion of Sponsored Lenses and Geofilters speaks to a reciprocity between photography and capital that can be identified in material terms (e.g. the cost of the advertising space and the commercial impact of such advertising), it also speaks to a broader argument about the productive value of photographic mediation in Snapchat and its relationship to a framework of platform capitalism. Snapchat's ability to position itself outside of the negative connotations regarding social media platforms like Facebook, stems not necessarily from a retreat of capital from the flow of communications, but through an even deeper destabilization of their boundaries. Rather than extracting and analyzing data from our communications, and subsequently targeting advertising back into the platform, the productive value of Snapchat emerges from the way our data is used in simultaneity with its production. As we pass through spaces associated with Sponsored Geofilters, or activate particular Sponsored Lenses, we also activate the possibility of commercial imperatives entering deeply into the flow of photographic mediation.

Unstable Flows

This chapter has sought to follow some of the threads of vernacular photography's remediation through networked and mobile media, and the assemblage of technological, cultural and economic actors through which our experiences are increasingly mediated. The remediation of vernacular photography in these networks can be understood through a logic of productivity; each iteration of our photographic apparatus seeking to be more productive by destabilizing the codes and conventions of their predecessors. This productivity does not emanate from a single point or object, but emerges at multiple moments and durations during the process of photography (Cohen 2005). It is therefore not simply a matter of photography becoming productive of more photographs, but of a changing agential significance of photography

as it becomes ubiquitous and pervasive to our ways of living. In the ephemeral and unstable flows of photography we inhabit, productivity is increasingly found in the temporal and durational dynamics of mediation; a continual making and remaking of the subject as we are enmeshed with the photographic.

By drawing on the platform of Snapchat and the mode of vernacular photography it cultivates, we can tentatively consider the productivities of networked photography and the forms of value it generates. With Snapchat, vernacular photography continues to be intimately connected with the flows of capitalism, not only as a site of consumption, but more fundamentally as a mode of production. Whilst Snapchat's relationship to commodification is more nebulous than in the example of Kodak, it appears no less imbricated with the desire to generate value through our photographic practices. In the ephemeral photography of Snapchat, the affordances of networked mobility give rise to momentary collapses between photography and life; a production of subjectivity through mediation *in the flow* of our experiences, rather than as a state of exceptionality or as an event separable from these mediated flows (Jurgenson 2014). In these collapses, commercial imperatives are entangled with the processes of photographic mediation, as the commodity spills out of the frame, colouring our experiences, relationships and desires.

Through networked photography, companies produce the affective environments and desiring subjects conducive to their own ideological imperatives. Productive of the fragmented 'zones of intensity', by which Beller (2006) describes the state of the subject under late capitalism, vernacular photography creates the conditions for a continual remodelling and refashioning of the self through mediation and consumption (or mediated consumption) (van Djick 2008). The transformative potential of photographic

mediation is instrumentalized by capitalism as a mode of production; the reified and stable image-object of photography is deterritorialized only to the extent that it might be recaptured as a vital force in capitalism's own reproduction (Deleuze and Guattari 1983). However, are these deterritorializations suggestive of openings for other potentials of vernacular photography? If the process of photographic mediation is not fixed, but might be reconfigured, attenuated and modulated, can we consider the possibility of remediating vernacular photography in ways that work against the imperatives of its commercial institutions? Might we find amongst the multiple photographies, potential lines of flight from these modes of production? Before tackling these questions, in the following chapter a final mode of productivity that emerges through contemporary vernacular photography will be considered, made possible through the increasing significance of artificial intelligence and machine learning. Through an analysis of Ditto Labs, a 'visual analytics company', this chapter will consider the intervention of non-human, semi-autonomous agents in the flows of mediation and investigate their impact on the productive value of vernacular photography.

Chapter 3: Visual Analytics: Putting Images to Work

Vernacular photography is increasingly interwoven with technologies from the field of artificial intelligence (AI). Cameras are equipped with software for automatically adjusting the contrast, lighting and focus based on the type of scene we are trying to capture (Fujifilm 2017). Face detection algorithms are embedded in cameras, principally designed for auto-focusing on faces within the frame, but also extending to features such as the 'smile-shutter algorithm' that automatically releases the shutter when a smile is detected (Sony 2008). AI is also used in a wide range of smartphone applications, with Snapchat and MSQRD both featuring powerful face recognition algorithms that facilitate computer generated augmentations that can respond in real-time to facial expressions and gestures. Furthermore, AI is now routinely embedded in the infrastructures of photo-sharing sites, playing a significant role in structuring networks and shaping online communication (Langlois and Elmer 2013; Gomez Cruz 2016). As one CEO of an analytics company describes, 'CV [computer vision] makes unstructured data structured, and actionable' (Rose 2015). As such, AI has become a central tool in transforming the morass of online photography into readable and manageable data, with pattern recognition technologies (PRT) enabling the parsing of images into discrete semantic components. Networks that were once blind to the contents of our photographs make use of this data to structure our interactions with photography: making connections between co-present individuals in the image; alerting us to nearby locations based on landmarks and signage (Weyand et al. 2016); and embedding relevant links to other websites in our images (e.g. linking travel websites to holiday photos) (Rose 2015).

This chapter asks how the convergence of intelligent algorithms with photographic networks is changing the meaning and function of vernacular photography. As the technologies of computer vision, machine learning and big data coalesce into semi-autonomous algorithms, detecting objects, places and faces with a high degree of efficacy, how is our understanding of photography challenged? Does the role of these non-human agents change the value and productivity of vernacular photography? These questions will be engaged through an analysis of *visual analytics*, an assemblage of technologies that analyze the contents of our images in order to make inferences about our behaviours, relationships and desires (Kohavi et al. 2002). This process relies on a variety of PRT's; computational techniques for describing and detecting objects within an image. At present, PRT uses massive quantities of data in teaching the algorithm to detect objects accurately and efficiently in a process called *supervised learning* (Taigman and Wolf 2011). Supervised learning is a variety of machine learning in which the algorithm is fed a large quantity of data (referred to as the 'training set') for which the desired output is already known. For example, if the algorithm is being trained to detect faces in an image, images are presented to the algorithm for which it is already known whether or not there is a face appearing in the image. This process enables the accuracy and reliability of the algorithm to be measured and refined to improve its performance in subsequent iterations.

Systems of machine learning are couched in the terms of automation: without the need for human intervention, they are described as 'classifying' or 'detecting' between categories that 'are assumed to be stable and in principle distinct from each other' (Mackenzie 2015, 433). But as Adrian Mackenzie argues, the technologies of machine learning do not distinguish between pre-existing categories based on data concerning a stable object of analysis. Instead, they subsume an array of data concerning the object of analysis *(inputs)* into a

different epistemic order (*vectorization*), creating new categories of data (*features*) that in turn give rise to new categories of classification *(outputs)*. Whereas the language of detection and classification suggests an apparatus of automation, a detailed analysis of these algorithms demonstrates that machine learning is as much engaged in the production of new categories and epistemologies as it is in the sorting of pre-existing ones. Categories do not emerge from the data as naturally occurring features, but are produced as a function of the work the data is being asked to perform. For example, liking and commenting on a Facebook post has no inherent or causative connection to a person's ability to pay back a loan, but this does not prevent it from being used as a measure of a person's credit score under the algorithmic logic of machine learning (Wei et al. 2014).

Photography plays an increasingly central role in these operations. At one level, it provides a rich source of readily available data for analysis. Not only is this data produced at a vast scale (in the order of billions of images per day), these images penetrate deeply into the fabric of our everyday lives, capturing moments of both public display and intimate correspondence. At another level, photography is able to lend its own discourse of indexicality to assist in securing the supposed objectivity and passivity of such systems, building on the historical and institutional authority that has already been invested in the image (Kember 2014). As this chapter examines, systems of visual analytics therefore represent a new form of productivity for vernacular photography, enlisting it as part of operations that generate value through the creation of new epistemologies. Recalling Farocki's (2000) concept of the operational image, as discussed in the introduction to this thesis, photography is merged with technical operations through the tools of pattern recognition and data mining. By cutting the image into an array of variables (e.g. the location, time and date the image was taken, the names, relationships and emotional state of its

subjects, and the behaviours and activities they are engaged in), the tools of machine learning enable vernacular photography to become commensurate with the algorithmic, shaping the content and structure of the networks we traverse in response to the images we have provided. Instrumentalized as a part of these processes, photography is called not only to form representations of the world, but to be an active participant in shaping it.

This discussion will be anchored in the case study of Ditto Labs, a brand analytics company that scans images uploaded to social media in order to gain marketing insights for third party clients. Ditto's software is able to analyze vast quantities of photographs circulating through social networking sites (primarily Instagram, Twitter and Flickr) in its search for images that contain relevant branded items. Using PRT (also referred to as computer vision), Ditto can detect logos in a variety of unconstrained appearances, alongside a variety of other pertinent image features, such as clothing items, locations and facial expressions (Ditto 2016a). In Ditto's search for brand references, it combines PRT with associated metadata, such as location data, time stamps, textual annotations and profile data, aggregating this to gain insight into consumer behaviours, relationships and desires (Wachman and Rose 2013). Ditto (2014) state, 'Analytics become a self-funding way for companies to improve customer understanding, identify which trends to act on, and gauge their position relative to competitors.' However, more than simply a means of measuring brand presence, Ditto offers a clear example of how AI is being used to reimagine photographic networks, with photographs transformed into what Ditto describe as 'actionable images' (Rose 2015); interfaces between people, brands and corporations.

By examining the underlying algorithms of Ditto, this chapter aims to elucidate how these objects are constructed and their agency in relation to the

productivity of photographic mediation. In detailing how these algorithms restructure photographic networks, this chapter argues for an expanded understanding of vernacular photography that includes the productivity of these nonhuman agents (Van Djick 2013; Gomez Cruz 2016; Zylinska 2017). Hidden behind the smooth interfaces of photo-sharing sites, the activity of these semi-autonomous algorithms generates new epistemologies that iteratively shape the meaning and function of photography (Bucher 2012; Langlois and Elmer 2013). By facilitating the creation of data from our images and interactions, visual analytics increases the potential for actions and operations to be made on the basis of photographic activity. These nonhuman spectators of photography possess an agency that must therefore be accounted for if we aim to critique and challenge the broader institutional, political and commercial imperatives embedded in photographic networks.

Following the methodology of the previous case studies, this chapter will involve a close material analysis of the technological apparatus that Ditto has produced. Operating mostly beneath the surface of our everyday photographic practices, this will require examining how the constituent algorithms of visual analytics are produced and how they function as part of the broader socio-technical assemblage of vernacular photography. The materialism of Marx and the biopolitics of Deleuze will operate once again as central pillars in carrying out this analysis, providing a theoretical framework for understanding how the processes of photographic mediation have been deterritorialized and instrumentalized as a mode of production. Deleuze's (1992) concept of dividuation will be particularly significant to this discussion, with the process of visual analytics reconfiguring the photographic subject into a collection of independent variables that can be monitored, stored and compared (Wachman and Rose 2013). This chapter's significance to the argument of the thesis will be to illustrate how vernacular photography has remained a productive force by

entering into hybrid assemblages that entangle photographic mediation ever deeper into our lives. The processes of visual analytics may deterritorialize the onto-epistemological structures of the photographic image and the spectator, but as this discussion will demonstrate, they do not signal photography's dissolution. At one level, even as photography is made commensurate with epistemologies that emerge from outside of its own history, the discourses of indexicality and authenticity return as a means of securing the truth claims of these new assemblages. But perhaps more significantly, the deterritorialization of vernacular photography has enabled different cuts to be made in the flows of mediation that are productive of new materialities, temporalities and subjectivities. Far from signalling its demise, the imbrication of vernacular photography with AI and visual analytics has placed photographic mediation at the centre of new circuits of labour, value and productivity. The central question is therefore not whether photography can survive its encounter with these technologies, but what vision of everyday life do these modes of photographic mediation produce?

Discover trends. Identify affinities. Measure sentiment and smiles.

Visual analytics cannot be grasped in isolation and can only be examined in situ, as it is put to work in the service of particular political and commercial imperatives. Including visual analytics as part of an expanded photographic apparatus, we might return to John Tagg's (1988, 3) earlier insights on photography, in which he argues, 'The photograph is not a magical "emanation" but a material product of a material apparatus set to work in specific contexts, by specific forces, for more or less defined purposes.' Reworked for the current context, we might say that visual analytics is not simply the magic of algorithms revealing objective details contained in the image, but is rather part of an apparatus developed and used for the purposes

of marketing and surveillance. Whilst visual analytics may appear to be a relatively recent phenomenon, as Sarah Kember (2014) has demonstrated, these technologies are closely connected to a longer history of photography's use as a mechanism of discipline and control. As per the broader narrative of this thesis, these processes are also interwoven with the history of vernacular photography as a medium instrumentalized by capitalism as a mode of production.

As demonstrated through the previous case studies of Kodak and Snapchat, the productivity of vernacular photography goes beyond the accumulation of capital through the sale of photographic equipment or advertising space: photographic assemblages are productive of affects and desires; of modes of relating to others; and of ways of being and acting in the world. These photographic modes of productivity are more nebulous than the accumulation of devices and images that pervade our daily lives, and yet as demonstrated in these case studies, they are no less significant to the socio-material networks of capitalism. Jonathan Beller's (2006) account of the 'cinematic mode of production' is instructive in this regard. As he argues, 'Not only do denizens of capital labor to maintain ourselves as image, we labor in the image. The image, which pervades all appearing, is the mise-en-scène of the new work' (Beller 2006, 1). In practicing photography, we are not only producing images or representations of desire, but are producing the very grounds upon which we reconfigure our desires and subjectivity. However, Beller's account also collapses the process of mediation into the image, thereby precluding other productive modes of photography. For example, Gomez Cruz (2016, 235) has demonstrated how certain 'photogenic practices' may bypass the creation of an image, but still have productive effects by creating connections in the increasingly 'automatized fabric of everyday life'. As this account of visual analytics will demonstrate, our desires are not reconfigured through the image

alone, but through our entanglement with multiple flows of mediation that mutually constitute our lived experience.

The case studies discussed so far remain connected to a concept of productivity realized through the emergence of the image. Even though the image has been reconceptualized as but one component within an expanded apparatus of photography, it is hard to deny that it has remained a focal point of photography's productivity in each chapter. In Chapter 1, the photographic apparatus of Kodak transformed intimate familial moments into spectacular events that teemed with significance (Slater 1991), but only through the anticipation of an image that might offer the fulfilment of our latent desires (Cassar 2012). In Chapter 2, the ephemeral and unstable logic of Snapchat was framed as redefining the image within the processual dynamics of the networks it circulated and multiplied within. The image was destabilized as photography sought to extend its productivity, remaining always 'incomplete and processual' (Rubinstein and Sluis 2013). Yet even in the leaky and polymorphous state of photography afforded by Snapchat, the image (however incomplete) remained the locus mediating relationships, desires, subjects and capital.

By contrast, the practice of visual analytics offers a way of considering the productive potentials of photography outside of the representational image. In the framework of PRT, photographic matter is recast as a series of edges, scales and vectors that resist the two-dimensional plane of the image (Goodfellow et al. 2016). The act of photographic mediation extends into the production of new digital objects that are interwoven into the opaque fabric of networked media. Martin Lister (2017) has recently argued of the non-representational turn in photographic theory, that to abandon representational approaches is to deny the value of reading photographs and the continued centrality of

representation to many diverse photographic practices. Indeed, in the previous two chapters the representational dimensions of photography have remained a constituent part of the analysis. However, whilst representation continues to play a significant role in everyday photography, it is not an axiomatic condition of its productivity, as per the interventions of Edgar Gomez Cruz (2016), Sarah Kember (2017) and Joanna Zylinska (2017).

As I have examined above, Kember and Zylinska (2012) argue for conceptualizing photography in terms of cutting and differentiation. Cutting is read as a productive and transformative process that is crucial to our '*becoming-with-the-world*, as well as *becoming-different-from-the-world*' (Kember and Zylinska 2012, 75). As they argue:

> The process of cutting is one of the most fundamental and originary processes through which we emerge as "selves" as we engage with matter and attempt to give it (and ourselves) form. Cutting reality into small pieces - with our eyes, our bodily and cognitive apparatus, our language, our memory, and our technologies – we enact separation and relationality as the two dominant aspects of material locatedness in time.
>
> (Kember and Zylinska 2012, 75)

Through this concept of cutting, they argue for an ontology of photography as a fundamentally productive phenomenon that makes differences within the world through the creation of temporary stabilizations in the flows of mediation. In this way, photography – like all life – is framed as a process of 'giving form to matter' (Kember and Zylinska 2012, 84); a vital process that goes beyond the paradigm of representationalism as it engages in transformations of cultural, biological and political matter. Under these terms, photography participates in the processes of cutting and differentiation that are fundamental

manoeuvres in the production of life. We are called as such to reconceptualize photography beyond what Ignaz Cassar (2012, 36) describes as the 'teleological techno-logics of photographic practice' – the representational image that emerges from the camera – and to recognize its vitality and productivity in the world.

Joanna Zylinska's (2017) more recent work engages this opening of photography through a critical inquiry into the concept of 'nonhuman photography', whereby the nonhuman is read as a potential site of arresting photography's 'world-making' side. Challenging the humanist paradigm that remains central to our conception of photography, Zylinska argues that reckoning with the biological, machinic and ecological entanglements of photography offers not only a more lively and vital reading of the photographic condition, but also provides the possibility for reimagining ethics and politics beyond humanism. Whereas Zylinska's work explores the vital potentiality of nonhuman photography as a mode of ethico-political action, the aims of this chapter are more firmly grounded in the institutional confines of commercial practices. It is crucial that we recognize the interconnected nature of the algorithmic with the photographic; that vernacular photography escapes the confines of sociological or aesthetic categories, continuously interweaving with the biological, technological and mechanical. However, it is also imperative that this expanded conception of photography is read in terms of the commercial and political apparatus in which it is embedded and put to use. As Kember proposes:

> What to look out for, I suggest, is a strictly non-organic, top-down entangling of technologies and users that exploits their agential intra-action in order to derive value from it. The strategy of the technology industries is indeed to revive e-commerce as Lovink suggests, but, more

specifically by staking direct claims to relationality, sociality and an environment constituted by users and intelligent artefacts alike.

(Kember 2012a, 336)

It is therefore precisely the lively and vital nature of photography that makes it such a powerful tool within the framework of biopolitical control. Photography is enlisted by the technoscience industries as a way of staking a claim to ubiquity, a strategy of becoming woven into the fabric of everyday life at both the inter- and intra-subjective level. Under the auspices of a neo-liberal economic rationality, and embedded in an assemblage of marketing and surveillance technologies that are spread throughout the environment, photography is instrumentalized as part of a reordering of the subject outside of a humanist conception of the individual (Kember 2012a, 340).

The practice of visual analytics is therefore understood as a mode of production whose nonhuman dimensions challenge photography's representational ontology, as the image is remade into an interface between subjects, networks and capital. The conjoined apparatus of photo-sharing platforms and visual analytics bifurcates vernacular photography into two divergent, yet interconnected networks, in what Langlois and Elmer (2013) refer to as the double articulation of media objects. According to Langlois and Elmer (2013, 5), analytics creates a double articulation in the communicative act, whereby the acts 'that take place at one level simultaneously create new articulations at another level'. In the case of visual analytics, the uploaded image generates visible effects throughout the network, but at the same time, in a hidden layer of the network, data concerning this object and the effects it generates are produced and gathered for economic interests. This data is then often rearticulated back at the level of the interface through targeted interventions such as suggested content and advertisements (Langlois and Elmer 2013).

Visual analytics therefore becomes part of an apparatus that distributes visibility and attention based on brand affinity and user influence, directing visual content to particular users, and hiding it from others (Bucher 2012).

The first of these networks is captured partly in the previous chapter regarding Snapchat, whereby photography was framed as partaking in an affective economy that produces subjective desires and desiring subjects through the circulation of images. The significance of representational content is joined here by the role of the image in generating connections and mediating presence between users in the network (Okabe and Ito 2005; Villi 2015; Murray 2008). As argued in the previous chapter, the destabilization of the representational object has enabled new forms of productivity in which flows of mediation become more intensely entangled with commercial imperatives. The second of these networks, intimately connected to the first, operates largely outside of the visual flows of mediation, as our images become connected to algorithms beneath the surface of photo-sharing and social media sites (Gomez Cruz 2016; Meikle 2016). In this network, photographic data circulates between artificially intelligent actors that analyze the contents of our images, producing 'information-rich' data that can be used to create aggregative knowledge about our activity, and which can then be deployed to reshape how the network operates.

The aim in studying these networks of nonhuman agents is to consider how the creative and vital potential of photography, outlined by Zylinska, is instrumentalized by the commercial imperatives of the technoscience industries. Zylinska's (2017) work remains cognizant of photography's productive force in the generation of capital and control, whilst offering the possibility of a photography that escapes and moves beyond these frameworks. Here, however, the aim is to closely map the co-option of this vitality in the

generation of capital and to understand how the destabilization of the image through visual analytics functions as a strategy for making photography more productive. If, as Kember (2012a) suggests, vernacular photography is being realigned within the frame of technoscience industries and surveillance-based markets, it is imperative that we analyze the material and discursive operations of these commercial actors. Critically interrogating the intersection of photography and capitalism requires making visible the opaque structures that lie behind the visible interfaces of photographic networks. These less visible networks are not separate from or auxiliary to vernacular photography, but constitute an integral dimension of photography's agency and productivity in the information age (Kember 2012a; Lister 2007). As such, it is vitally important that we follow photography into the networks it moves within, even as these become seemingly detached from the visual flows of everyday photography.

In examining the productivities of networked photography beyond the image, a number of scholars have provided some foundational insights (Gomez Cruz 2016; Kember 2014; Tagg 2009). Edgar Gomez Cruz's (2016) work on 'imageless interfaces' is particularly pertinent to this discussion, as it bears directly on the concept of the 'actionable image' promoted by Ditto. Gomez Cruz (2016, 229) argues that 'Photography is increasingly being used as an interface, without even involving an image.' Using QR codes as an example, Gomez Cruz argues that the assemblage of photographic technologies is increasingly used to produce connections between people, data and institutions, without ever requiring the production of visual representations:

> The bottom-line for these new visual interfaces is that the output resulting from a 'click' is, increasingly, not just an image but a connection as well – a connection that can be traced, measured and become part of databases. These connections are sometimes visual and between people (as the social

studies of camera phones demonstrated), but also through codes, sensors and connections.

(Gomez Cruz 2016, 239)

Along with Kember and Zylinska's (2012) work, this account suggests that we theorize photography beyond the image and consider alternative agencies of the photographic through a concept of mediation. We might say that there is less vitality in Gomez Cruz's account, with photography framed as a Latourian socio-technical assemblage; a heterogeneous and reciprocal mix of human and nonhuman actors that (re)produce photography. By contrast, and in drawing on the philosophies of Bergson, Deleuze and Barad, Kember and Zylinska (2012) are able to articulate a vision of photography that is dynamically entangled in the very production of the boundaries between human and nonhuman. Yet Gomez Cruz's account still offers a framework for thinking about photography as a connective force in the fabric of digital media. As in the example of the QR code, we can begin to reckon with a photographic apparatus that works through generating connections between codes, databases, institutions, places and bodies.

In the case of visual analytics, photography does not become an 'imageless interface', for it requires data from the image in order to produce information about users of the network. It does, however, reimagine the image as an input within a larger apparatus for the production of data and knowledge on a different epistemological order to that of the photograph. The photographic image ceases to be the teleological imperative of photography as it is subjected to further acts of cutting and differentiation by nonhuman agents. PRT algorithms, such as artificial neural networks, decompose the image into multiple vectors that undergo a variety of transformations designed to resolve the ambiguity of the image into a list of definable semantic attributes

(Goodfellow et al. 2016). As Daniel Rubinstein (2010) describes, this process of semantic coding seeks to channel the imagistic uncertainty of photography into definitive categorizations, making the photographic commensurate with the dataflows of networked economies. Visual analytics forces us to think about the productive agency of photography as it enters algorithmic networks outside of visual representation, producing new epistemologies that restructure the meaning and function of photography. We might say that the photograph ceases to be a 'temporary stabilization' within the flow of mediation, as the expanded apparatus of photography destabilizes the image to make further incisions. As shall be demonstrated via the case study of Ditto, these further incisions enable the production of new connections, desires and subjects that are becoming central to the 'ontology of everyday control' (Kember 2014, 185).

Data, Platforms and Subjects

Contemporary methods of computer vision both rely on and contribute towards a vast accumulation of data being gathered through social media (Taigman et al. 2013). Forms of facial recognition, produced for example by Facebook in the DeepFace algorithm, were developed over many years, utilizing the steady stream of 'face images' and contextual metadata uploaded to the site. In 2011, developers of the precursor to DeepFace were already at work 'leveraging billions of faces to overcome performance barriers in unconstrained face recognition' (Taigman and Wolf 2011).[15] Similarly, work in generating captions for a variety of unconstrained images has made use of the vast quantities of images uploaded to Flickr, alongside descriptions provided

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[15] Unconstrained refers in this context to images produced outside of a laboratory setting, featuring a variety of poses and illumination levels. Taigman et al. (2013) refer in a later article to unconstrained images as those produced 'in the wild'.

by users (Ordonez et al. 2011). In the production of relevant captions, access to big data has played a fundamental role in the development of these algorithms. Visual analytics is therefore predicated on the political economy of social media platforms, in which data produced through our interactions has already become a central commodity. Analytics emerges from, and is dependent on, the vast scale of social networks and the 'sharing' culture these have cultivated.

Analytics transforms the raw material of data generated via social media into useable commodities through a systematic and automated analysis conducted by non-human agents in the network. This process includes: the storage of data in vast server farms; the archiving and formatting of data into relational databases; the training of algorithms through a process of machine learning on small samples; the detection of underlying patterns and trends in the data; and finally the repackaging of these patterns as usable knowledge in the iterative shaping of the network (Kohavi et al. 2002; Langlois and Elmer 2013; Srnicek 2016). This abbreviated description of the analytic method is far from exhaustive, however, it supports Langlois and Elmer's assertion that the image of data collection presented by scholars needs complicating through a deeper understanding of analytics. Mirroring the argument regarding vernacular photography, analytics does not transparently represent aspects of our lives or identities, but is engaged in the production of new epistemologies that transform acts of communication and self-presentation (Langlois and Elmer 2013).

Research regarding the broader socio-political dimensions of social media platforms provides vital context to the development of visual analytics and the commercial imperatives behind the extraction of data from photography. Thinking about social media in the terms of political economy and digital labour has enabled a push beyond the utopianism of participatory cultures,

enabling an interrogation of the 'increasingly control-oriented and value-capturing aspects of platformication' (Hands 2013, 4). As detailed in the previous chapter, the collection and monetization of data about users has long been a central axiom of social media platforms (Cohen 2008; Lovink 2012; Van Djick 2013)**.** As media theorist Jose Van Djick argues:

> Platform owners have become acutely aware of the valuable resource that streams through their pipelines everyday. Sophisticated mathematical models for analyzing aggregated data and predicting social trends are turning the incessant flow of data into a potentially lucrative connective resource.
>
> (Van Djick 2013, 40)

Van Djick (2013, 47) frames this resource by way of a distinction between 'connectedness' and 'connectivity'. Connectedness stands in for the value users gain through the affordances of sharing information between members in the network, whilst connectivity creates value from these connections by sharing this information with third parties, generating revenue through 'aggregating and processing data into targeted personalization strategies' (Van Djick 2013, 48). The blurring of connectivity with connectedness is enacted through strategies of obscuration performed both discursively and through the socio-materiality of user interfaces. As both Van Djick (2013) and Graham Meikle (2016) have identified, social media platforms engage in strategies of discursive ambiguity. The term 'social' as deployed by platforms such as Facebook, encompasses 'both (human) connectedness and (automated) connectivity – a conflation that is cultivated by many CEO's' (Van Djick 2013, 12). Similarly, the imperative verb of social media, *to share*, performs a polysemic function, in which 'sharing means users distributing personal information to each other *and* also that information being sold on to third parties' (Meikle 2016, 30). For

Meikle, the discourse of sharing deliberately omits and elides the work being done in the act of sharing, emphasizing those connections being made between users rather than those connections being made with third parties.

The architecture of social networking sites supports these strategies of obscuration through the prevalent technique of *blackboxing*. Blackboxing, a term associated with actor-network theory, refers to the production of singular impenetrable objects which hide their inner-workings, both literally and metaphorically. As Susan Leigh Star (1991, 32) describes, 'technology freezes inscriptions, knowledge, information, alliances and actions inside black boxes, where they become invisible, transportable, and powerful in hitherto unknown ways as part of socio-technical networks.' These processes can be seen in the user-friendly interfaces of social networking platforms; possessing an immutable simplicity of pre-programmed possibilities for interaction, they deflect our attention away from the socio-technical assemblage of algorithms, protocols, data and capital that operate behind the scenes. As such, the visible economy of sharing between users is only the tip of an iceberg that entails numerous technological, political and biological entanglements (Hayles 2006). These dynamics of visibility in social media constitute asymmetric power relations, in which users' lives are rendered increasingly visible through the drive to share, whilst the technological and commercial actions of platforms remain opaque (Lyon 2014).

Rendering this relationship in stark terms, Geert Lovink (2012, 13) argues that 'The Machine constantly desires to know what's going on, which choices we make, where we go, who we talk to. All the while we are data-mined without any concern that our semi-private and mostly public selves are making the owners of social media joyfully wealthy.' For Lovink, social networking sites generate capital by extracting value from our every interaction, generating data

and revenue by building complex data profiles of their users. The commercial imperative of maximizing profits drives social media platforms to colonize more of our time and extract data more efficiently through increasing granularity (Lovink 2012). Social media platforms may indeed 'extract value from our every interaction' (Lovink 2012, 130), but more than this, these communicative acts are shaped by the politics of platforms. In Langlois and Elmer's (2013, 14) critical analysis of social media research, they argue that social media platforms 'do not simply use communication as a springboard to promote special interests – they use communication to tap into everyday life in order to try and refashion it from the inside.' For Langlois and Elmer (2013), there is no unproblematic subject whose data can be recorded and represented in the machine, for the logic of the platform produces new modes of communication and new forms of subjectivity.

In this way, we cannot understand the data generated through social media (including photographic data) as a straightforward commodity that is bought and sold, for this data is engaged in multivalent and dynamic interactions, producing new forms of knowledge that are subsequently utilized in shaping the network and the meaning of communication. As Langlois and Elmer (2013, 5) argue, 'an act of communication […] is not simply about human content and context: it encapsulates a series of double articulations where disparate economic, technological, cultural and social logics are shaped by each other, and therefore have to be studied in relation with each other.' Lovink (2012) is correct in his assertion that our lives are data-mined as we navigate our way through social media, however, his account fails to recognize the deeper entanglements of our lives with these apparatuses. The technological environment is not an externality which pre-defined human subjects can navigate, but part of a dynamic process of mediation that produces differences and cuts that mutually constitute the subject (Kember and Zylinska 2012). The

productive potential of analytics goes beyond the extraction of value from our actions, it is also a matter of re-articulating and reconfiguring desire and subjectivity through the production of new onto-epistemologies (Beller 2006; Kember and Zylinska 2012).

The failure to recognize these entanglements is also why many quantitative approaches in social media research, such as those subscribed to in the field of cultural analytics, do not generate the incisive analyses of contemporary culture that its proponents claim. In presenting data generated via social media as neutral representations of communication upon which empirical claims can be made, they fail to recognize the agency of these networks in reconfiguring the relationship between technology and subjectivity (Frabetti 2011). As Gary Hall (2016) argues, research conducted under the banner of cultural analytics by prominent practitioners such as Lev Manovich, takes an instrumental approach to culture and data that elides the biopolitical repercussions of both social media networks and its own research methodology. For instance, in his book-length study of Instagram, Manovich states:

> Karl Marx's concept of means of production is useful here because Instagrammers can be said to own the means of cultural production. This means, however, not only simply owning mobile phones and apps but more importantly having skills in using these apps, understanding Instagram's rules and strategies for creating popular feeds, and being able to apply well these strategies in practice.
>
> (Manovich 2017, 115)

Manovich's refusal to engage in a critical interrogation of networked photography produces an account that fails to reckon with the politics of platforms outlined above, taking users' everyday encounters with Instagram

as metonymic for the platform, without interrogating the algorithmic and machinic interactions that operate beneath its surface. Manovich ascribes agency and control to 'Instagrammers', without recognizing the contradictory asymmetries of power apparent in Instagram, whose algorithms control the distribution of visibility across the network and shape the aesthetics and value of photography. Does 'understanding Instagram's rules' equate to users owning the means of cultural production? Or does it speak instead to a reconfiguration of cultural production driven by the economic, technical and social logics of the platform?

In this regard, cultural analytics misses the agency and dynamism of its empirical base, instrumentalizing data as a representation of human activity, without considering the context in which it is put to work and the role of this data in redefining the meaning of communication and subjectivity. As Gary Hall argues, this failure to understand the entanglements of data, knowledge and subjectivity is mirrored in its own methodology:

> Just as critical theory tells us that the reader of a text is constituted as a subject in and by the very process of reading, so the (large sets of) objects of cultural analytics research do not exist outside and prior to the analysis in any simple or straightforward sense, but are performatively constructed by it.
>
> (Hall 2016, 50)

For Hall, we must recognize that data is not a transparent representation of some phenomenon, but is always performatively constructed by the method of analysis. The production and analysis of data cannot be positioned outside of culture, politics and biology, for this elides the role it plays in generating cultural logics and modes of subjectivity.

This performative construction of data is as relevant to the academic field of cultural analytics as it is to the commercial endeavours of Ditto and other analytics-driven corporations. In the case of Ditto, analytics does not only extract data from photographs but plays a significant role in reconfiguring the meaning and matter of photography. By placing the image within a variety of different corpora (e.g. those taken by an individual, featuring a branded good, or taken on a particular day), the epistemology of the image is transformed, becoming a dataset that can be situated in relation to others. Despite the language of passivity that visual analytics adopts (e.g. the term 'visual listening' is used widely in the literature), there is an active and productive reconfiguration of photographic agency that occurs in this process. These machinic entanglements extend the productivity of photography by both combining images into different corpora and by cutting them into a series of discrete variables. This process not only changes the meaning and function of photography but plays a vital role in reconfiguring the photographic subject.

Photography and Visual Analytics

According to Cruz and Meyer (2012), the ubiquity of the smartphone has enabled the seamless integration of photographic practices with social media platforms. As they argue:

> The iPhone acts more as a platform and a node for different networks than as a single device […] It serves as a platform between companies developing applications and users of them, and, even more, it is a social tool based on image sharing and showing, making computer-mediated social interactions more visual every day.

> (Cruz and Meyer 2012, 217)

Since this article was written, developments have continued in line with these observations, solidifying the notion that we are 'witnessing a generalized fifth moment of photography, that of complete mobility, ubiquity, and connection' (Cruz and Meyer 2012, 217). The model of the iPhone they use as emblematic of this 'fifth moment' has been generalized across the smartphone market, each model offering platforms for the easy access and development of photographic applications. Mobile service agreements often come with an allocated amount of 'data', enabling mobile access to the network and the sharing of images whilst on the move. And applications for photo-sharing and social networking are increasingly developed specifically for the smartphone. Rather than integrating smartphones into pre-existing social networks, the dominant logic of photo-sharing is increasingly to circumvent the home computer in favour of native smartphone applications (e.g. Snapchat, Instagram and WhatsApp).

However, the photographic has also been largely incommensurate with the logic of platforms, analytics and data mining. The extraction of information from social media platforms is dependent on the translation of communicative acts into quantifiable variables that can be normalized and measured across the network; the ability to 'encode and fold acts of communication into techno-corporate kernels, or objects' (Hands 2013, 12). Whilst the hybrid object of the smartphone creates intimate connections between vernacular photography and networked communication, the machine's inability to read and translate the image into codified variables precluded its seamless integration into the network. Even as Cruz and Meyer's (2012) account dexterously combines the social and technical aspects of the photographic assemblage, its emphasis on a human understanding of photography limits its ability to recognize deeper machinic entanglements. To understand the productive potential of networked photography, we must examine processes occurring outside of human

perception and beyond a human scale. The smartphone is only the visual edge of photographic networks; a smooth surface beneath which the photographic process continues, cutting, structuring and (re)producing our mediated environment.

Within a conceptual framework that includes the non-human dynamics of the network, the productive potential of PRT plays a substantial role. It is only with the technologies of computer vision and machine learning that photography can fully enter the data economies of social media platforms outlined in the previous section. Of course, PRT is not the only process by which photography has been 'converted into a meaningful substance' (Rubinstein 2010, 199) accessible to the networks semantic foundations. As Daniel Rubinstein (2010) argues, the relative blindness of the network to visual data had previously been compensated for by the semantic overcoding of the image, enacted via both automatically generated metadata (geospatial and time-stamp data produced at the point of creation) and additional contextual information provided by users themselves (e.g. the manual 'tagging' of images with keywords denoting places, people, products and emotions). For Rubinstein (2010), the process of tagging cannot be reduced to earlier material practices of appending linguistic signifiers to images, such as newspaper captions or Kodak's attempts at encouraging the adding of text with the Autographic. As Rubinstein argues:

> The performative element lodged in the act of tagging is not limited to the construction of identities, as the application of a tag to an image sets in motion a causal chain of physical changes to binary data that exerts influence on the structure, processing and display of information. Tags […] have a concrete, transformative and non-discursive dimension by which they partake in the material structure of power relations in society.
>
> (Rubinstein 2010, 199)

Rubinstein's account of tagging raises significant insights that reverberate into recent developments in computer vision and the associated technologies of face recognition and visual analytics. Whereas the subtitle or caption sat beside the image as an admittance of its indeterminate meaning, and as an overcoding of the image's signifiers, the 'tag' inscribes a sense of fixity into the very fabric of the image, making redundant subsequent acts of interpretation. To *know* the image in the process of tagging becomes a matter of removing imagistic uncertainty through exhaustive categorization; to crystallize and solidify its meaning into definable parameters (Rubinstein 2010). The commensuration of the photographic with the data flows of networks demands a determination of meaning and a drawing of boundaries that precludes the leakiness and instability of human encounters with the image. However, as the act of tagging suggests, the identification of phenomena within the image is always performed via acts of interpretation, even as this function comes to be fulfilled algorithmically by AI software. Unlike the caption however, these acts of interpretation are erased as they are performed. They do not sit alongside the image revealing their uncertainty, but silently structure the network and confer onto our images uneven distributions of visibility based on semantic identifiers of particular image features.

PRT and the practice of visual analytics are predicated on the same resolution of ambiguity through fixing the meaning of the photograph. In learning to read the image, the computer is taught how to make boundaries between phenomena, to resolve or eliminate uncertainty in the photographic. As Sarah Kember (2014) examines in relation to face recognition technologies (FRT), the algorithm functions as a productive force that creates and reinforces the categories it sorts between. Kember argues that FRT work through the reproduction of identities fixed by categories of gender, race and age. These

boundaries are not immanent to the data itself, but emerge from the conjunction of the image with an apparatus whose functioning is informed by cultural, social and institutional factors. FRT does not therefore merely 'recognize' immanent features of faces, but works by producing normalized, fixed and delineated spaces of identity. An essential operation in the process of categorization is the erasure of boundary figures (what is referred to in computer science as *fuzziness*), those faces situated at the boundaries between categories that are 'pruned' from the data during training (Kember 2014, 193). The resistance of these faces to classification points toward a connectivity between identities that is removed under a logic of increasing classificatory efficacy, highlighting the productive and generative nature of the system. As Kember (2014, 193) argues, 'the existence of a pruning algorithm that renders faces less ambiguous testifies to their elusiveness, or their inherent resistance to classification as one mode of representationalism.'

The generative nature of this apparatus is obscured through a discourse of objectivity that is grounded in both photography's cultural, technological and institutional histories, and the epistemological scientism of data mining and machine learning. Indeed, the concept of indexicality finds itself reflected in the language of machine learning, with the classificatory function of machine learning described as being 'generated by the patterns or resonances existing in the data itself' (Goffrey 2008, 138), a statement that evokes Barthes' (1981, 34) description of the image as an 'emanation of the referent'. It is important to note therefore, that it is not the algorithmic per se that is responsible for the form of cuts and boundaries made by the system, but its adoption within a particular cultural and institutional formation of biopolitics.

For Foucault (2003), biopolitics is the regulatory apparatus of bodies positioned in relation to a population, functioning through demographic and statistical

techniques. The regime of biopolitics does not replace the disciplinary society, but complements and extends it, 'covering the whole surface that lies between the organic and the biological, between body and population' (Foucault 2003). In this sense, Foucault's concept of the biopolitical is resonant with Deleuze's (1992) concept of the control society, with its operations acting through aggregations of lively data that captures the behavioural, biological and affective attributes of 'dividuals', thereby making productive both the infra-individual and supra-individual capacities of life (Lazzarato 2014). Deleuze argues that Foucault's concept of the disciplines, which work on the subject's body as it passes through various enclosures (schools, factories, prisons), are increasingly joined and replaced by technologies of control, functioning instead by means of a continuous, modulating structure that works on '"dividuals", and masses, samples, data, markets, or "banks"' (Deleuze 1992, 5). The technologies of the control society are said to pass through the individual subject, functioning at scales that are simultaneously more microscopic (operating at smaller levels than the embodied subject) and more macroscopic (operating across markets or samples). This duality is expressed by Lazzarato (2014, 124) in terms of mobilizing 'both more and less than the person and the individuated subject insofar as it intervenes at infra-personal and supra-personal levels.'

It is this dual movement of scale, both of the supra- and the infra-individual level (Lazzarato 2014) that necessitates a conception of analytics operating at a different regime of productivity to that previously enacted by the meeting of capitalism and photography. Analytics constitutes its object not as the unified subject but as a collection of affinities and attributes that can be aggregated across populations; a number of discrete measurable variables that can be acted upon independently of one another. It is these dynamics that the following discussion of Ditto will aim to elucidate. Operating out of view, within the

figurative black box of networked communication, Ditto combines photography with machinic processes that continue the process of cutting beyond the representational image, making new stabilizations in the flow of mediation that cut both within and across the users of social media platforms.

Putting Images to Work

Ditto Labs is a 'brand analytics' company that uses streams of images 'made public' from Instagram, Twitter and Tumblr to identify branded goods contained in the image (Ditto 2016a). Using what they refer to as 'military-grade vision technology', Ditto scan the contents of photos that are uploaded to social media and algorithmically identify their contents. As they state:

> Our technology can access the information provided by the millions of photos people upload every day. It tags photos with product brands, reads sentiment and shares data through an open API. This logo detection engine along with our team of analysts turns selfies into a goldmine of Photo Insights.
>
> (Ditto 2014)

Part of a growing industry within the technology sector, Ditto focuses on generating value from the contents of the photographs we share online in ever greater numbers. Techniques of AI and machine learning are central in this apparatus that scans images from social media to identify pertinent features contained within (Wachman and Rose 2013). Whilst Ditto's software is designed primarily to identify branded products, it can also analyze a range of other information contained within the image, including the emotions of the subjects ('sentiment analysis'), the geographical location and contextual setting ('the scene'), and correlations between products (e.g. 'which beverages people

drink while eating Macaroni and Cheese') (Ditto 2016a). This information is further augmented by data regarding the network itself and the relative 'influence' of people who share these images (Ditto 2016a). By gathering this information, Ditto offers to their clients a deeper knowledge of consumer relationships with their brand, providing what they term 'Photo Insights' (Ditto 2014). In generating these 'insights', machine learning and pattern recognition can be deployed again in identifying trends and patterns in photographic activity occurring across populations of users on social media (Ditto 2016b).

Ditto is by no means alone in developing and marketing these technologies, with Google's Cloud Vision API, Facebook's DeepFace, and Amazon's Rekognition, each developing AI methods to analyze photographic data, alongside a multitude of smaller start-up companies. Ditto may disappear in the tumultuous world of the information technology industry, however, they have been chosen here as they serve as a clear example of how the potential productivity of vernacular photography is being reimagined in a networked and data-driven ecosystem. The framework of Ditto emphasizes this concept of productivity and articulates a vision of how photography is instrumentalized in the service of commercial imperatives. As the company's advertising promotes:

> Discover trends. Identify affinities. Measure sentiment and smiles. Or monitor a new product launch. Ensure your brand maintains its image in social channels and target ad campaigns informed by visual insights of your brand and the competition. Continually grow your base of influential fans. At Ditto we quickly turn insight into action. Your fans are already sharing their photos about your brand. It's time to put them to work.

> (Ditto 2016a)

This list of imperatives gives a sense of how photography is framed not in representational terms, but as a valuable and productive resource that should be exploited. The image is decentred as the focal point of photography and is repositioned as part of an expanded apparatus whose focus becomes 'visual insights' and the actions emerging from these. Ditto articulate the commensuration of photography with the economic logic of social media platforms as outlined by Gomez Cruz (2016), in which the photographic functions as an interface between people, data, objects and commerce. And yet perhaps more than this, Ditto's apparatus signals a deeper reconfiguration of the boundaries between the human and the machine.

In explaining the functioning of their technology, Ditto's patent application states 'Each person is an ecosystem of preferences that may be expressed with images across media platforms' (Wachman and Rose 2013, 2). In this discourse we can see a reframing and renegotiation of the subject as a less bounded entity than the unified subject who sought the affirmation of identity under the logic of Kodak culture (Chalfen 1987). Here, the subject becomes an ecosystem that (re)produces a diversity of changing preferences and desires. Untethered from the singular humanist conception of the individual, we are deterritorialized in the process of becoming commensurate with the flows of data we generate. The term 'ecosystem' in particular points to a collection of attributes held loosely and without a clear fixity of boundaries. As such, Ditto's system does not work directly on the body of the individual, but through the creation of multiple proxy values that describe our affinities and influence in multiple overlapping networks. Our images are transformed into indicators of 'brand affinity', measures that describe our relationship to commodities through image features, such as brand references, facial expressions and social feedback (Wachman and Rose 2013). These affinities in turn are aggregated to create

profiles of user interactions with brands across the network. The production of these profiles is always made in relation to the wider population of users; attributes such as 'social feedback' are not an immanent measure of the interactions generated by an image, but as described by Ditto, are normalized relative to interactions occurring across the population. Likewise, attributes such as 'influence' are partially established by a user's significance to the network, determined through relative measures such as eigenvector centrality (a measure of interconnectedness used in network analysis) (Wachman and Rose 2013, 7).

The concepts of brand affinity and influence in this commercial apparatus operate differently to the fixed categories of identity described by Kember (2014). As described above, the boundaries of identity in Ditto are defined through a series of modulating variables operating in relationship to the network's demography. These variables are not fixed, but undergo perpetual revisions as we continue to engage with the network; our affinities and influence rising and falling as our photographic practices shift. This does not mean that the techniques of analytics meaningfully challenge the discriminatory logic of the disciplines, however, it does mean that the logics of classification and segregation have become more nebulous and opaque. As per Deleuze's (1992) concept of 'dividuation', the subject is not addressed as a singular productive body, but as a series of interlinked attributes, affinities and desires that are called to react and respond continuously to competing corporate logics. In this way, the technologies of analytics become a productive interface between capitalism and its subjects; a codified assemblage for orchestrating the production of subjects who are responsive to the protocols of late capitalism (Beller 2006).

As has been stressed throughout this thesis, the material and discursive aspects of photography operate in reciprocity. Examining how visual analytics is performed can therefore provide significant insights into the operations of Ditto and a better understanding of the way photography is instrumentalized as part of these assemblages. Rather than sketch out the entire apparatus of Ditto, the following sections will focus on two key elements; feature detection through SIFT and deep learning through convolutional neural networks. As Ditto's algorithms are proprietary, we cannot access the underlying code to directly ascertain precisely which techniques they use. However, we can use a number of various sources to illustrate some of the foundations on which Ditto's software runs. Partly, these sketches are derived from close readings of patent documents submitted or acquired by Ditto regarding the underlying technologies that comprise its suite of analytic tools, including USP No. 13/888,268 (Wachman and Rose 2013), USP No. 14/745,353 (Romanik and Mayle 2015a) and USP No. 14/745,393 (Romanik and Mayle 2015b). These documents also signpost a number of key research papers in computer vision that are directly relevant to Ditto's software (Lowe 2004; Bay et al. 2008; Fischer et al. 2014), helping to reveal some of the underlying approaches that are deployed in the process of feature detection. Whilst all of these features may not be deployed by Ditto exactly as described, there is a strong indication that they are at least considered viable and reasonable options for the forms of machine learning and pattern recognition that undergird their apparatus. In addition to information gleaned through these documents, lectures and presentations given by staff members provide a supplementary overview of the systems functioning and its underlying principles.

Feature Detection: SIFT

Ditto's central feature is the ability to detect logos and branding within the image, enabling its clients to monitor the visibility of their brands on social media and view the types of images being shared that contain their products. Using a template image (i.e. a high-resolution image of the logo), a set of feature points are extracted that may indicate the presence of the logo (Romanik and Mayle 2015a). In the discourse of computer vision, feature detection refers to low-level image processing in which various techniques are used to discern 'interesting' patterns within pixel data, such as variance, gradience, edges, geometric features or colour features (Khan et al. 2018). These features are combined into a feature vector that functions as a signature of the object that has been detected, also known as a 'feature descriptor' (Romanik and Mayle 2015a, 2). Key to the efficacy of a feature descriptor in this context is that it is invariant to transformations in scale, rotation and illumination; images of brands in social media rarely show the branded product forward-facing in a well-lit scenario. To detect brands in the unconstrained parameters of social media images, the feature descriptor must be robust against these brands appearing at diverse sizes and angles within the image (Figure 6).

Examining how these features are constructed demonstrates the multiple remediations of the image that are made in the processes of computer vision. In making semantic interpretations of the image, it is subjected to multiple mathematical translations and multiplications, remaking the photograph into an n-dimensional object (the feature vector) from which the positioning and distance of the observer is ultimately extracted. For object recognition to be robust, it must operate independently of the scale and rotation of the object it is attempting to detect; in essence, it must negate the positioning of the photographer, thereby overcoming the subject/object dualism of

photography's foundational epistemologies (Batchen 1997). We might illustrate this further by briefly considering the transformations performed by the SIFT (Scale-Invariant Feature Transform) algorithm, which has become one of the foundational tenets of computer vision (Lowe 2004).

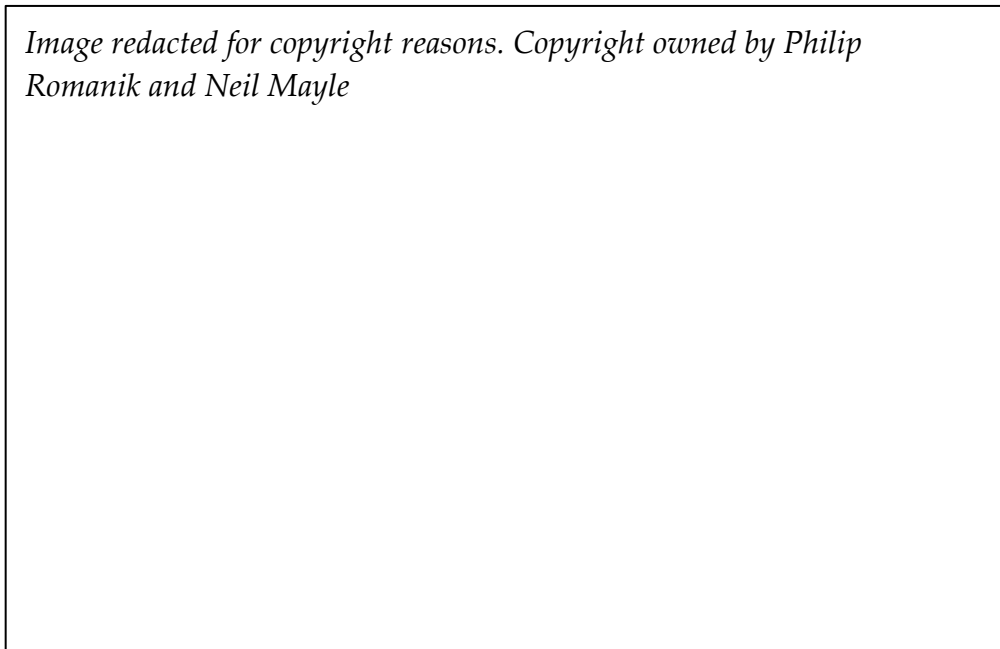*Image redacted for copyright reasons. Copyright owned by Philip Romanik and Neil Mayle*

Figure 6. Example of matching one or more portions of an image template to a test image. From 'Systems, Methods, and Devices for Image Matching and Object Recognition in Images', Philip Romanik and Neil Mayle, 2015.

The first step of SIFT is to create a 'scale-space representation' that enables the computer to 'consider representations at all scales simultaneously' (Lindeberg 2008, 2495). SIFT works by progressively blurring the image (using a Gaussian filter) and stacking each progressively blurred image atop of the other to create a mathematical model of different scales. By successively varying the granularity and resolution of the image, SIFT attempts to approximate the disappearance of detail that occurs in human vision as we move away from an object, thus enabling the recognition of structures that can only be perceived at particular scales (Lindeberg 1993). As Lindeberg (2008, 2495) explains, 'The idea is to handle the multiscale nature of real-world objects, which implies that

objects may be perceived in different ways depending on the scale of observation.' By analyzing structures over multiple scales, SIFT produces feature descriptors that are 'scale invariant', being able to detect an object regardless of its size within the image. The objects detected by SIFT are not therefore representations of the object in a visual sense, but are complex numerical vectors that describe 'image gradients within a local region of the image' (Lowe 2004, 108).

The use of gradients in SIFT is crucial in making the algorithm 'rotation invariant'; a feature that can be detected regardless of the angle at which the photograph is taken. The SIFT feature descriptor contains 128 values which are derived from an orientation histogram, constructed by sampling gradient magnitudes covering a 360-degree range of orientations from a central point (Lowe 2004, 99-100). Peaks in the sampled gradient magnitudes (the level of change in intensity or colour from one point to another) are used in assigning an orientation to the descriptor that enables its detection in a variety of transformations. Whilst the technical details of SIFT are far more complex than can be outlined here and involve further mathematical equations for optimization, this brief description of the technical procedures involved in SIFT demonstrates some of the principles in object detection as performed by Ditto. Features must be detected and described as a numerical vector (in this case of 128 values) that can then be searched for in all other images. For the algorithm to be robust, it must be able to detect objects appearing at diverse sizes and angles, and hence this vector must be independent of these variables. It is worth noting that the use of multiple key points can enable SIFT to perform relatively well even with partially occluded objects (Lowe 2004; Lindeberg 2008).

The SIFT framework demonstrates how computer vision cannot be reduced to a process of visual representation, but is a productive and transformative

process that destabilizes the image. If the photograph is a temporary stabilization in the flow of mediation, the role of the feature detection algorithm in the network is to set the image back into motion and into new flows of mediation from which it can be re-cut as a different type of object. In producing feature signatures that are both scale and rotation invariant, photographic data must not only be recorded, but also created, as the construction of scale-space representations indicates. From this productive process emerge representations of photographic data designed for non-human actors that challenge our conceptions about the object of photography. Performing object recognition involves far more than scanning the image, it involves deeper cuts in the logic of photography, abstracting the observer from the image to create objects within a different onto-epistemology. In the assemblage of Ditto Labs and in the context of social media, we might say that scale and rotation invariance are stand-ins for a deeper logic of human invariance.

Deep Learning

Traditional computer vision techniques, such as SIFT, are now predominantly supplemented by 'deep learning' algorithms. In the domain of object recognition, these algorithms may borrow many of the principles from traditional computer vision, such as scale and rotation invariance, but significantly improve the performance and functionality of traditional 'hand-coded' algorithms, whilst reducing the cost and domain-specific knowledge required (Khan et al. 2018). Deep learning refers to a domain of AI which takes a specific approach to the architecture of artificial neural networks (ANNs). Inspired by the way neurons function in the brain, ANNs are algorithms that 'learn' how to detect objects in images using training sets to refine the accuracy and efficacy of the algorithm. Like all algorithms, neural networks take some form of input (such as an image) and generate some form of output (such as a

classification). However, unlike hand-coded algorithms, which have a coded knowledge base, the intelligence of neural networks is distributed throughout the network of 'neurons'. Each neuron handles a relatively simple task, but when combined, a form of intelligent behaviour emerges from the network. As Mehrotra et al. (1996, 2) describe, 'In a neural network, each node performs some simple computations, and each connection conveys a signal from one node to another, labelled by a number called the "connection strength" or "weight" indicating the extent to which a signal is amplified or diminished by a connection.' A crucial feature that distinguishes ANNs from other algorithms is the ability to incrementally learn how to detect and describe features of objects through tuning the weightings of each neuron based on previous outcomes. In this way, ANNs can be taught how to effectively detect objects without requiring an explicitly programmed knowledge base. Instead, knowledge is embodied in the network through exposure to enough data. Known as 'training sets', this data usually comprises of inputs for which the desired classification is already known (Han and Kamber 2006).

Deep learning is an approach to ANNs that has become central to the technologies of computer vision. Increases in computing power have afforded complex neural networks that are multi-layered and densely interconnected (hence the term 'deep') (Khan et al. 2018). In the domain of object detection, the first layers of the network learn to detect simple features, which are then fed forward in the network, whose deeper layers handle progressively more complex and abstract features. Goodfellow et al. (2016) provide an overview of one such system:

> Deep learning [breaks] complicated mapping into a series of nested simple mappings, each described by a different layer of the model. The input is presented at the visible layer, so named because it contains the

variables that we are able to observe. Then a series of hidden layers extracts increasingly abstract features from the image. These layers are called "hidden" because their values are not given in the data; instead the model must determine which concepts are useful for explaining the relationships in the observed data.

(Goodfellow et al. 2016, 6)

In this system, data is passed between the 'hidden' layers of the algorithm, as each neuron processes various aspects of the image, before combining these to describe and detect increasingly complex features. Ditto provides the following lay description of how deep learning contributes to their apparatus:

Basically, a convolution net is a way of organizing the neurons in artificial neural network in such a way that it can be applied to images. A network is a tool of machine learning – which is a set of techniques that allow machines to do tasks that, as yet, only humans can perform. Just like synapses in the brain, the way these artificial nets work is by adjusting the strength of the connections between neurons. Each neuron learns something small, so by using thousands of neurons with a series of complex connections we can learn more insightful things about images.

(Ditto Labs 2016b)

The concept of deep learning (and ANNs more generally) inheres a sense of algorithmic autonomy; the machine itself learns, iteratively embodying deeper and more complex forms of knowledge that cannot be defined in advance. Exposed to enough data, the neural network configures itself in symbiosis with 'patterns or resonances existing in the data itself' (Goffrey 2008, 138). Each neuron works on the image, producing new data useful for the process of classification, that subsequently is fed forward to other neurons for further

processing. The image is multiplied as it passes through the network, remediated as it undergoes mathematical translations that change the meaning and matter of photography, producing various abstract features from the image. The photograph is re-cut multiple times (sometimes thousands of times) before being reconstituted in ways that generate meaningful objects.

In the discourse of neural networks, the role of data in configuring the network not only improves the efficiency and accuracy of object detection, but also helps to secure its objectivity. The algorithm is said to emerge from 'repeated contact with an environment' (Goffrey 2008, 138), in this way redoubling the indexicality of the photographic image that serves as its object. However, such a reading of the neural network elides the institutional and commercial contexts in which they are put to work and the imperatives of classification they serve (Kember 2014). The inner workings of neural networks may be hidden (even from their programmers), however they still have pre-defined goals to which they are engineered; specified tasks in which they are trained (or 'supervised') in achieving. In this regard, the outputs produced by neural networks are not an emergent feature of the data, but are codified in advance to be commensurate with the political and commercial imperatives of the institutions in which they are embedded. Through processes of abstraction and reductionism, entanglements of politics, biology and culture are instrumentalized via the process of deep learning, in which fixed categories are produced out of photographic ambiguity, generating epistemologies that can be usefully deployed in iteratively restructuring the network.

As Sarah Kember (2014) argues in relation to face recognition technologies (FRT), whether the knowledge base of the system is hand-coded or emergent through machine learning, they remain embedded within politically

problematic ways of seeing. Arguing that FRT continues the longer political histories of surveillance, discrimination and control, Kember states:

> Contemporary face recognition makes the same moves whether the context is institutional or commercial, classifying and segregating individuals into groups and types depending on their appearance as an indicator of behaviour, and evincing a form of biopolitical control that is perhaps more effective, or at least more insidious, for being at a distance.
>
> (Kember 2014, 190)

For Kember (2014), the technologies of FRT partake in the production of the very categories they proclaim to sort between, creating fixed categories of identity in a process of agential cutting that erases the connections between them. In the case of Ditto's deep learning algorithms, the assignation of categorical identities plays a reduced role in the biopolitics of surveillance. As above, identity becomes an emergent feature of the 'ecosystem of preferences' we exhibit; of the brands we consume, the events we attend, the places we visit, all in combination with the number of photographs we post and the amount of attention we generate. Under the auspice of generating marketing insight, visual analytics creates profiles of user behaviour and activity through the interaction of networked photography and ANNs. The identity of the subject is therefore obscured behind an assortment of proxy values that are more nebulous than the production of gender and race in the modes of FRT discussed by Kember, yet remain imbricated with problematic ways of seeing.

The concepts of autonomy, learning and intelligence that are used to describe the processes of deep learning, conceal the ideological imperatives under which these algorithms are put to work. Despite their complex and opaque nature, neural networks are not autonomous systems, but closed functions operating

within specific domains for specific purposes. The algorithms of Ditto are trained to classify and sort our photographic practices in terms of brand affinity and user influence. These technologies do not simply sort between immanent categories contained within the image, but play a productive role in the very construction of these categories. Classification is not a neutral process, but is 'an instrument of power-knowledge that is productive of the things it sorts (Kember 2014, 193). Brand affinity is not as such a measure existing independently of the apparatus of visual analytics, but is produced by a system operating at the intersection of capitalism, photography and artificial intelligence, as a tool for shaping and moulding our actions in the world.

The ideological nature of this process can be partly gleaned through the algorithm's training process. Training sets of images are fed through the network, which iteratively reconfigures the algorithm through tuning the weighting of each neuron. Yet it is not only exposure to data that shapes the output of the algorithm, but feedback given to the network based on the desired results. The algorithm does not learn independently, but is engaged in a 'semi-supervised' training process where it is shaped to produce the required outputs. Through this supervision, the products that the network will create are defined. The classification and sorting of ANNs are not emergent features of the data, but are always reciprocally produced by the commercial and ideological imperatives invested in the network. In the case of Ditto, the ANN works by re-cutting the photographic as a strategy of marketing and surveillance, generating new power-knowledges that can be applied to reshape the logics of communication and visibility.

In the apparatus of Ditto, the photographic image shared on social media is passed through the ANN, which iteratively manipulates this data to assign a range of values to the image, resolving photographic ambiguity into an array

of data concerning branded goods, relationships, locations and sentiments. The value of this data is derived partly from the lingering discourse of indexicality that photography maintains. Ditto may not make a direct claim regarding the ontology of photography, but in counterposing textual data as only a 'subjective representation' against photography's ability to capture 'authentic affinities' (Ditto 2016a), they illustrate how the photograph is still viewed as having a privileged access to reality. This indexicality, as argued above, is also refracted in the language of deep learning, whereby data is not created, but 'detected' or 'extracted' by an algorithm produced through repeated contact with the environment. What to the human spectator was a visual representation laden with personal and affective meaning, is transformed into semantic data that can be operationalized to create new connections between images, subjects and commodities. Sold to third party clients, this data is used to subtly shape the grounds of communication, distributing the visibility of images depending on the affinities they express and the commodities they feature. The productivity of vernacular photography is extended through this stratum operating beneath the visible surface of the image, as deterritorialized photographic data, generated by our photographic activity, is used as a means of monitoring and shaping behaviours, desires and beliefs.

Scale

Having sketched some of the code that underpins Ditto's brand analytics software, we now have a better vantage point to situate these technologies within the broader cultural and political context. Researchers have often struggled to come to terms with the sheer volume of images being produced in contemporary photographic networks, with the billions of images shared daily seen as presenting something of a challenge to the orthodoxies of photographic theory (Meeker 2017). Characterized by a sense of superabundance and

unrestrained excess, we are told in popular culture that we simply take 'too many photos' (Burns 2014); of 'holidays we never had' because we were too busy taking photos (Cooper 2013); of memories impoverished by a 'photo-taking impairment effect' (Vincent 2013) and of our children's egos overinflated through being the centre of an ever-present camera's attention (Holohan 2013). These warnings signal how vernacular photography has come to be framed as a social epidemic, replaying debates that have plagued popular photography throughout its history (Marien 2010). However, the non-human processes of photography outlined above, require us to rethink the current scale of image-making not as a scene of unruly excess (Burns 2014), but as a valuable resource for the training of algorithms and the aggregative strategies of marketing and surveillance. The productive potential of analytics is dependent upon a vast apparatus of photographic production that continues to reach ever higher magnitudes, challenging the human measure against which we have often framed photographic activity.

In reflecting on the scale of contemporary photographic production, we might momentarily consider artist Erik Kessels' installation, *24 Hrs in Photos* (2011). As the title suggests, in this artwork all of the photographs uploaded to Flickr from a single day were printed off and placed in a single exhibition space in Amsterdam. The estimated 350,000 prints were piled in mounds, evoking on the one hand a sea of images in which we might drown, and on the other a landfill of discarded moments now out of circulation - a by-product of our living photographically. The impossibility of repeating such a feat under current conditions emphasizes the transience of this artwork's moment, in which the scale of our photographic activity bore the remote possibility of its physical representation, even if only as a temporal slither of photographic activity rendered in monumental scale. *24 Hrs* confronts a photography whose

magnitude exceeds the human, attempting to momentarily arrest it as an object that we might interrogate back on our own terrain.

The naturalistic forms of mounds and waves that fill the gallery space in *24 Hrs* evoke the fluidity and transience of photographic activity; the stream of images that flow through the internet, with each pointing towards the next in a continuous interlocking sequence of moments, defying their separation as isolated objects (Lister 2013). However, by cutting this flow into so many tangible objects, Kessels offers us the possibility of pulling the image from the stream, to momentarily engender it with the value of a singular object. This manoeuvre does not reconnect the vernacular to the discourse of art history; neither through a modernist narrative of 'originality, innovation and individuality' (Batchen 2008, 130), nor through an appropriation or fetishization of the everyday. Whilst the image may be plucked from the pile, it remains dialectically contingent on the whole and cannot stand alone. It can only be foregrounded against the magnitude of photographic production; a process momentarily stabilized, causing a change of consistency in both part and whole that renders the data stream frozen. Whilst *24 Hrs* affords the possibility of examining the fragments of our photographic lives, each image is never made whole - a self-contained object independent of the total process of photographic production - it is always 'incomplete', a partial object operating in relation to a vast photographic apparatus (Rubinstein and Sluis 2013).

Kessels' artwork renders visible the multiscalar nature of photographic production; fragments of visuality that coalesce into monumental forms that refute the possibility of being apprehended at a human scale. *24 Hrs* symbolically reproduces the incommensurable duality of photographic networks. The images that flow before our eyes on the screen are in one sense the same images that are analyzed and aggregated by non-human agents,

packaged as 'marketing insights' to flow across global networks of commercial and governmental entities (Meikle 2016). And yet, as the analysis of Ditto makes clear, these non-human entanglements also change the matter of photography; they re-cut the photographic into different epistemological arrangements, expanding and contracting the meaning of photography into a collection of 'attributes' expressed throughout the corpus (Ditto 2016a). In this mode of photographic production, the scale of our photographic activity is never excessive or over-abundant, but is a necessary resource for the functioning of deep learning algorithms and the technologies of visual analytics. Indeed, in the context of Ditto there is sometimes an apparent scarcity of images, with users of social media failing to photograph products in sufficient numbers for useful data to be generated (Ditto 2016a).

Whilst the camera and the image remain fundamental blocks of vernacular photography, their conjunction with algorithmic and global networks has fundamentally changed the economy of photographic production, circulation and consumption. The flow of images produced by the camera have become connected to, and arguably subordinated by, a vast apparatus that is interwoven with the forces of marketing and surveillance; a biotechnological assemblage that co-opts image making practices into the service of regulating bodies, behaviours and markets (Kember 2014). As Jonathan Crary argues:

> To be preoccupied with the aesthetic properties of digital imagery, as are many theorists and critics, is to evade the subordination of the image to a broad field of non-visual operations and requirements. Most images are now produced and circulated in the service of maximizing the amount of time spent in habitual forms of individual self-management and self-regulation.

> (Crary 2013, 47)

Crary argues that our everyday practices of media consumption and production are interwoven with technologies of control, in which our interactions are subject to constant surveillance and the production of ever more granular data, which serves as a vehicle for producing surplus value from our 'free time'. In theorizing the relationship between technology, culture and photography, Crary calls us to recognize the impact at different scales that these assemblages produce and to examine the larger social and economic forms they co-constitute. It is imperative that we do not collapse photography onto the level of the individual image or subject, but recognize its agency in the production of larger technological, political and social structures. As discussed above, Langlois and Elmer frame these different scales in terms of a 'double articulation', the digital object generating effects as it is imbricated in multiple overlapping networks:

> [If] as researchers we focus on the phenomenon of communication and take an act of communication as an object of study, we have to be aware that this object of study, which we call here a digital object, is not simply about human content and context: it encapsulates a series of double articulations where disparate economic, technological, cultural and social logics are shaped by each other, and therefore have to be studied in relation with each other.
>
> (Langlois and Elmer 2013, 5)

The scale of photography cannot be reckoned with solely from a human perspective, but must also therefore be read in terms of its nonhuman entanglements (Zylinska 2017). In the case of Ditto, the imbrication of vernacular photography with nonhuman agents is productive of new epistemologies that recast the 'life-shaping' force of the photographic. The scale

of photographic activity on social media, combined with the techno-logics of computer vision, has enabled the creation of different cuts in the flow of mediation that generate new modes of photographic productivity. As the analysis of SIFT and deep learning illustrates, in these processes the photographic continues to be reconfigured beyond the emergence of the image, as photographic matter is remade as a series of measurable and separable attributes. The aggregation and analysis of this data across the network produces forms of knowledge that transform the meaning and function of vernacular photography.

Actionable Images

In becoming networked, vernacular photography has been entangled with algorithms, databases and AI. Part of the argument of this chapter is that the photographic should be reconceptualized as encompassing these phenomena. Rather than being external to our understanding of photography, or a context into which photography is inserted, these phenomena are mutually constitutive in shaping the meaning and function of photographic mediation. (From the inverse perspective, it could also be argued that theories of digital labour, communicative capitalism or platform politics might benefit from incorporating the photographic as a significant aspect of their analysis). In this way, the discussion has followed the work of recent scholarship that calls for an expanded and reconfigured understanding of photography that is not wedded to the representational image for its ontological underpinning (Kember and Zylinska 2012; Zylinska 2017; Gomez Cruz 2016). In different ways, these texts suggest that we think of photography through a processual lens; as an act of mediation rather than any one particular outcome of this process.

For Gomez Cruz (2016), drawing on the work of Patrick Maynard, this entails a rethinking of photography through the concept of 'photogenic practices', a range of divergent socio-technical processes that use light to produce 'surface-markings'. In moving away from a concept of photography as the production of visual representations, this shift enables a deeper understanding of photography's role in producing the increasingly 'informational / automatized fabric of everyday life' (Gomez Cruz 2016, 235). The value of this argument is demonstrated through the concept of 'photo-interfaces', referring to the use of photography as a connective force between people, objects and algorithms. In the opaque networks of the information economy, these 'surface markings' are not always accessible as visual media; their agency is nebulous, dissolved into the fabric of daily life. It is precisely in this diffuse manner that photography plays a vital role in the production of interconnective tissues that shape the mediated environment and our navigation within it.

As our images are scanned by non-human agents, they are transformed into a valuable data resource that is used to shape the network in ways productive to the commercial imperatives of corporate social media platforms. By feeding this data back into the photographic network, as per Gomez Cruz's (2017) example of 'photo-interfaces', the photograph is transformed into a structuring device that performs actions for the network. The process of visual analytics therefore goes beyond a measurement of attributes, becoming actively engaged in restructuring networked communication. This active restructuring can be seen in the concept of the 'actionable image' promoted by Ditto Labs. As Ditto's CEO explains, 'computer vision makes unstructured data structured', thereby enabling the potential for 'every photo-stream to become actionable' (Rose 2015). They speak of being able to 'call anything in a photo', 'browse and buy anything in a photo' and of 'interrogating the world through this new layer of information made possible by all of these photos shared on social media' (Rose

2015). Computer vision in this scenario is not only the means of generating data commodities, but also of producing photographic interfaces that form a connective tissue between users, companies, products and experiences.

By examining the underlying algorithms that produce these technologies, this chapter has demonstrated the productive and generative nature of visual analytics. Whilst the term 'computer vision' is suggestive of a passive non-human spectator, the functioning of these algorithms indicates a process that actively transforms the meaning and matter of photography. The image undergoes a variety of mathematical translations and manipulations in extracting relevant features, generating new objects situated outside of visual representation (Lowe 2004). Understood through a processual approach, the image is remediated as a multitude of cuts remake the photographic into new forms that function independently of the photographer. Visual analytics does not only extract value from the photograph but extends and reconfigures the productive potential of photography, as illustrated by the concept of the 'actionable image' (Rose 2015). Imbricated with the commercial imperatives of platform capitalism, photographic mediation becomes instrumentalized as an active force within the apparatus of surveillance, marketing and analytics. The cuts performed in the process of photographic mediation are not only those made with the camera, but also those made by the semi-autonomous algorithms of visual analytics, generating new temporary stabilizations that operate on a different epistemological order to the photographic image. Decoding the image into a collection of related variables, these technologies enable new forms of value to be generated through vernacular photography, the ethical imperative to 'cut well' (Kember and Zylinska 2012, 71), remaining subordinate to the commercial imperative to cut productively.

Cutting across political, cultural and biological matter, the convergence of vernacular photography with the technologies of everyday surveillance and control also speaks to a reconfiguration of the photographic subject. As the example of Ditto illustrates, the technologies of visual analytics do not only deterritorialize the photographic image, but remake the subject as a loose collection of attributes that express relationships, experiences and desires. The reordering of the subject as an 'ecosystem of preferences' (Wachman and Rose 2013, 2) enables forms of biopolitics that operate beneath the level of the individual. We become a series of affinities, aggregations and intensities that are reflected back to us in networks that have been reconfigured in reciprocity. As photographic activity is entangled in the economic, technological and cultural logic of platform politics, big data and analytics, our mediated subjectivities are also imbricated in these assemblages. Through visual analytics, vernacular photography becomes productive not only of marketing data or brand insights, but of modes of being and acting in the world, shaping our understanding and experience of subjectivity.

How can we challenge the ways that vernacular photography is being reimagined through these assemblages? As photographic mediation is deterritorialized and instrumentalized to extend its productive potential, where do opportunities arise for resisting and critiquing this process? Might there be modes of deterritorializing vernacular photography that are not commensurate with the commercial imperatives of contemporary capitalism? Or put another way, are there cuts we can make that are productive of different subjectivities? As this and the previous chapters have demonstrated, the vitality and productivity of vernacular photography exceeds the representational image, as do the strategies of commodification and valorization that operate through it. It is therefore imperative that in looking for the answer to these questions, we do not retreat to the security of the image,

but meaningfully engage with the productive and processual dynamics of photographic mediation. As the following chapter will argue, we must look to interventions that extend beyond representational politics and into the temporal, material and libidinal relations that are activated by the photographic apparatus.

Chapter 4: Playing Against the Camera

The introduction to this thesis argued that understanding how vernacular photography is co-opted and instrumentalized by commercial institutions is a crucial step in realizing its potential value as a means of challenging current political and economic hegemonies. As such, the previous chapters have sought to elucidate some of the circuits of labour and value that photographic activity is embedded in, paying particular attention to the productive effects of photographic mediation that go beyond the image. A prominent feature of the case studies discussed has been a successive decoding of the photographic apparatus, with the image, event and subject of photography becoming more diffuse and porous, and therefore less clearly delineated from everyday life. Examples of this state of affairs have included cameras that are embedded in a myriad of smart devices and kept close by our bodies at all times; photographs that surface only briefly before disappearing to leave a gap that is always ready to be filled again; and algorithmic spectators that reconstitute the image into an array of variables that feed into surveillance and marketing assemblages. Through these phenomena, photography is brought closer to the performance and production of subjectivity, operationalized as a means of reshaping desires and beliefs from within the fabric of daily life (Kember 2012b; Gomez Cruz 2016). Equipped with an understanding of these material relations, the question remains: what would it mean to challenge this assemblage of discourses, technologies and institutions? Or, in Mirzoeff's (2011) terms, what would a strategy of countervisuality against this alignment of vernacular photography with the imperatives of capitalism look like?

This chapter examines three interventions into vernacular photography that might provide an answer to these questions: Jo Spence's *Beyond the Family*

Album (1978-9) and *The Picture of Health* (1982-6); Bonamy Devas' *Photographic Tai Chi* (2014-ongoing) and John Stezaker's *Masks* (2005-ongoing). Drawing on the analysis conducted so far, these projects have been chosen as they also decode the processes of vernacular photography, bringing it closer to the performance and production of subjectivity by destabilizing its boundaries. However, whereas in the case of Kodak, Snapchat or Ditto, vernacular photography was always recodified within the axioms of capitalism, these projects attempt to elude being recaptured by the logics of commodification and instrumentalization. Recalling Bleyen's (2012) concept of 'minor photography', these projects bring photography towards its borders, deterritorializing not only the dominant codes of representation but the epistemologies of photographic mediation. They seek a cut that goes too deep or a flow that runs too fast, leading vernacular photography in directions that cannot easily be reappropriated by commercial imperatives (Deleuze and Guattari 1983). There is a risk in choosing three interventions that are ostensibly produced or framed within the world of arts institutions. One may ask whether vernacular photography's co-option by commercial institutions is not simply being exchanged here for a different set of institutions. To make matters worse, are these substituted institutions of the art world not just as embroiled in the global circulation and exchange of capital as the vernacular, as Hito Steyerl (2017) has so compellingly argued? Furthermore, and perhaps more worryingly, by looking to the rarefied practices of the art world for liberation, are we not inadvertently foreclosing the possible vitality of vernacular photography?

There are a number of arguments that can be made against these accusations. Firstly, the worlds of fine art and vernacular photography do not form a clear cleavage. There has historically been significant overlaps and exchanges between artistic practices and the photography of everyday life. As has been

well documented, photography's relationship to the arts was fraught from the beginning, with Pictorialism and Modernism each seeking acknowledgement of the medium's value from the academy, albeit through two divergent paths and with varying degrees of success (James 2020).[16] By the time such legitimacy had been secured, new generations of photographers had already begun to return to popular culture, consumer photography and everyday spectacles as material for their photographic practices. Eschewing the divisions between high and low culture, vernacular photography in particular became a keen source of interest to photographers, as seen in the works of Ed Ruscha, John Baldessari and Martin Parr. However, in the case of these artists, the vernacular remained part of an aesthetic strategy, a reservoir of source material to be incorporated into practices that continued to look towards the academy for approval. For Ruscha, the vernacular enabled him to cultivate a 'mannered indifference' (Campbell and Durden 2020, 486) to his subject. For Parr, the vernacular is a space for satire, irony and wry observation of the rites and rituals of cultural life. The vernacular is therefore appropriated as an aesthetic strategy within the academy, rather than a site being looked towards for potential disruptive or challenging photographic practices.

By contrast, the projects being examined in this chapter do not simply borrow from the aesthetics of the vernacular, but experiment and intervene in the apparatus of vernacular photography (the apparatus being understood here as the socio-technical assemblage of objects, processes and rules of photography). Rather than critique the limitations of the everyday photographer, they look for ways of reimagining the photographic apparatus that might enable the production of different desires and subjectivities. For Jo Spence, this meant

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[16] For many modernist photographers, including Eugène Atget, Aleksander Rodchenko and Alfred Stieglitz, the ability of the camera to leave the artist's studio and roam the streets of everyday life was valued as a key part of photography's value as an artistic medium.

acknowledging and highlighting the field of competing gazes that cluster around vernacular photography and contesting the dichotomy of subject and object. In the case of Devas, this has meant reconfiguring the relationship between body and camera in the age of algorithmic images. Finally, for Stezaker, this has entailed breathing new life into old images, cutting open their field of meaning so they may continue to connect to the current temporal horizon. Through these different strategies, each of these interventions look to tap into a vitality underneath the surface of vernacular photography, rather than critique it from a distance. These projects can therefore be thought of as a critical enquiry into the possibilities of vernacular photography made through an intervention into the cultural and material apparatus of photography. The aim of this chapter is to use these projects as a set of conceptual tools in order to imagine different tactics for countering photography's co-option by commercial institutions.

Photographic Machines

This thesis has argued that we need to look beyond the image as a commodity and consider more broadly the ways that photographic mediation is embedded in systems of production and 'circuits of labour' (Qiu et al. 2014). The concept of deterritorialization, as proposed by Deleuze and Guattari (1983), has been used to make sense of how commercial interests increase the productivity of photographic mediation by unravelling historical structures that now restrict the flow of images, desires and capital. Kodak, Snapchat and Ditto, have each in their own way deterritorialized the apparatus of photography, enabling our desires and beliefs to be channelled with greater force and velocity. Equally significant has been a reciprocal reterritorialization of photography; the creation of novel structures by combining newly freed flows into different productive arrangements, from the mass-produced commodities of Kodak to

the machine learning of desire in Ditto. Whereas deterritorialization is the drive to exceed boundaries and make new connections, reterritorialization is the process of consolidating these forms into functioning assemblages, defining the new territories of photographic mediation. Through this dual movement, photography is remade into hybrid forms, coalescing with phenomena such as mass production, networked media and artificial intelligence to form apparatuses that significantly alter the meaning and matter of vernacular photography.

To briefly recap, for Kodak this process was closely aligned to the rise of mass production and consumer capitalism, as vernacular photography left the studios of dilettantes and serious amateurs and entered the mass-consumer market. Through a combination of industrial capitalism and aggressive marketing, Kodak rapidly expanded the territory of photography into everyday life, forming the foundations of vernacular photography as we understand it today. Kodak's strategy involved not only equipping the masses with cameras, but of creating a 'complete marketing concept' that would negate the need for consumers to ever engage with the technical or chemical details of photography (Slater 1995). Contained in the division of labour between the factory workers of Kodak and a newly established consumer class of 'snappers' was a transformation to the meaning of photography. Our desires would seamlessly flow into the camera with only the press of a button, our sensory apparatus becoming co-extensive with the photographic assemblage. But simultaneously, the product of this operation was mystified, both as an outcome of a technical process we no longer fully understand, and as a mass-produced object that has acquired the properties of a fetishized commodity. The transmission of our desires through the apparatus became part of a new productive circuit of labour, creating individualized spectacular commodities which were both connected to, yet separated from, our lived experience.

More recently in photography's history, Snapchat entered the frame with a vision of photography that was conversational, ambient and ephemeral, epitomized by the 'self-destructing' image which could only be viewed for up to ten seconds. With the affordances of networked and mobile media, Snapchat sought to deconstruct the idea of the photographic event as something exceptional to our everyday experiences (as had been central to the ideological narrative of photography promoted by Kodak). Collapsing the boundary between photography and everyday life, Snapchat enabled the mediation of our subjectivity *in the flow* of our experiences (Jurgenson 2014). In these collapses, there is an entanglement of commercial imperatives with the processes of photographic mediation; the commodity spilling out of the frame as it comes to intersect more closely with our lives than ever before.

Finally, in the case study of Ditto, photography's co-option into systems of big data and artificial intelligence decoded both the image as a visual object and the viewer as an embodied human observer. Through the development of pattern recognition and machine learning systems, our images have been transformed into a valuable data resource that is mined for emotions, faces and places by non-human agents. This data is used to create a mathematical representation of the subject as an aggregation of variables; a loose collection of behaviours and desires which both shape and are shaped by the network they are produced within. These techniques are not only used as a means of generating data commodities, but are also employed in the production of photographic interfaces that form a connective tissue between users, companies, products and experiences. In deconstructing the image into semantic components, companies such as Ditto produce actionable and operative images, embedded with links that form a bond between the image

and various acts of consumption, becoming the native advertising par excellence of social media (Rose 2015).

In each of these examples, the deterritorialization of vernacular photography has been largely driven by the desires of capitalism, pushing it further into the terrain of objectification, commodification and dividuation. In this way, they follow Deleuze's line of argument that within the political and cultural confines of capitalism, deterritorializations to the codes and structures that underpin our lives are almost always reterritorialized within the axioms of capital, which continue to form the 'ground from which all relations emanate' (Colebrook 2006, 127-8). Radical transformations to the meaning and matter of vernacular photography are used to cultivate new circuits of labour and value. Photography may not be an epiphenomenon of capital, but it certainly appears to be frequently subordinated to its demands. These examples also demonstrate how an integral aspect of transforming the apparatus of photographic mediation is the reframing and repositioning of the photographic subject. The visual economy produces modes of subjectivity that feed into the wider political economy, reciprocally shaping the contours of our desires and beliefs. As the processes of deterritorialization ensures that photographic mediation cuts ever deeper into our lives, the potential for reorganizing our subjectivity in ways amenable to the demands of contemporary capitalism becomes that much greater.

However, this theoretical framework should also give us some pause for optimism regarding the possibility of reshaping vernacular photography. If photographic mediation is a mode of production, generating value by realigning and reconfiguring subjective desires to the demands of contemporary capitalism, the role of the subject becomes much more than that of a passive consumer. The subject forms a vital part of the circuits of labour of

photography, and as such holds the possibility of subverting, detourning and redirecting the meaning of mediation. It is the diffusion and mediation of users' passions through the photographic apparatus that produce value (Arvidsson and Bonini 2015); the constitution of new publics clustered around consumer goods that drive fragile company valuations; the 'mediated intimacies' of the user that produce the affective environments of advertising (Ambler and Burne 1999); and it is their images which are excavated for data concerning behaviours and desires (Pantenburg 2017). Only by recognizing these material relationships that we have with vernacular photography can we begin to find the right tools and strategies for challenging such an apparatus. As the photographic apparatus is twisted and distended into new productive formations, we must trace the relations that emerge and experiment with new ways of playing against the machine (Flusser 2000).

As discussed in Chapter 1, Flusser argues in *Towards a Philosophy of Photography* that the human subject is not separable from the apparatus of photography:

> Unlike manual workers surrounded by their tools and industrial workers standing at their machines, photographers are inside their apparatus and bound up with it. This is a new kind of function in which human beings are neither the constant nor the variable but in which human beings and apparatus merge into a unity. It is therefore appropriate to call photographers functionaries.
>
> (Flusser 2000, 27)

Being a functionary entails being a part of the photographic apparatus, but does not provide any control or significant agency over its working. For the most part, the photographer can only play within the program of the apparatus, realizing one of its pre-defined possibilities (Flusser 2000, 26). The human's

coalescence with the apparatus is not made on an equal footing, for the inner workings of the camera remain a mystery to the functionary, its impenetrability precluding mastery over its operation. [17] Not unlike Lukács' concept of reification, the entanglement of the human subject with the apparatus has the effect of giving agency and life to the object (the camera), whilst removing it from the subject. Indeed, the apparatus of photography is viewed by Flusser (2000, 79-81) as an extension of post-industrial capitalism, an automated process in which the subject's agency is restricted to the forms of symbolic play that the camera affords. For Flusser, to wrest control of the camera we need to devise strategies for working against the program of the apparatus. Avoiding the range of symbolic combinations afforded by the camera, the photographer is required instead to turn their energies toward critically reflecting on the apparatus itself. 'Playing against the camera' (Flusser 2005, 80) therefore entails creating a degree of critical separation between the photographer and their apparatus so that its programs can come into view. Interrupting the flows of desire that seamlessly pass between ourselves and the camera, can we make unexpected uses of the apparatus, channelling unpredicted desires that make photographic mediation produce unforeseen outcomes? Rather than play the game with exceptional skill, can we 'outwit the camera's rigidity', and force 'the unpredictable, the improbable' through the apparatus (Flusser 2000, 80)?

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[17] According to Flusser (2005, 26), the situation for the snapshooter is even more dire, as they are viewed as only able to produce 'redundant' images. The snapshooter is not interested in playing the game of realizing one of the camera's possibilities, but is satisfied with repeating the same set of steps in order to re-realize an already-existing image. Flusser's outright dismissal of the snapshot is not a view shared in this thesis, for it collapses the multiplicity of vernacular photographies into a singular figure that obscures its complexity. Furthermore, if these were only 'redundant' rather than 'informative' images, Flusser would be at a loss to account for the economics of data mining that pervades contemporary vernacular photography.

As a vital and foundational process of everyday life, mediation is not optional; the fantasy of escaping to an unmediated oasis is neither possible nor desirable (Kember and Zylinska 2012). What we must look for instead are opportunities for channelling the productive potential of mediation into something other than capitalist forms of value; to produce radical subjectivities that challenge dominant social formations. The continual transformation of vernacular photography at least suggests the possibility of realizing a mode of photographic mediation that challenges the current ideological and economic imperatives invested in our photographic apparatus. Whilst each of the examples detailed so far have entailed the deterritorialization of photography under the auspices of commercial enterprise, they remain indicative of photography's multiple productive potentialities. As mediation is not auxiliary to capitalist modes of production nor the dominant forms of social relations, but is indeed partially constitutive of these phenomena, there remains the conceptual space to imagine forms of mediation that are both critical of these systems and productive of alternative formations.

As one particular form of mediation, vernacular photography has been thoroughly imbricated with commercial imperatives. However, this has by no means precluded creative and critical interventions into the field. In this final chapter, three such interventions in the territory of vernacular photography are discussed that suggest ways of working both with and against our apparatus (Flusser 2000). Redirecting the productivity of photographic mediation towards the creation of a countervisuality, these projects challenge the dominant ontological and epistemological order of vernacular photography. They look to remake the photographic machine, reconfiguring the assemblage of technical, cultural and psychological forces to produce alternative modes of mediation. Whilst each of these projects do disrupt the symbolic operations of the image, they do so by critically engaging with the material, temporal and

libidinal relations that are activated in the production and distribution of photography. Significantly, these practitioners do not critique photographic mediation for being transformative and performative, but challenge the limitations imposed on the types of transformation that are afforded by our apparatus. What other forms of subjectivity can be performed? What other fantasies can be materialized? What else can photography produce? Asking these questions means abandoning the mirage of objectivity that lies suspended beyond the historically and culturally contingent photograph, and instead grasping the fears and desires that always already flow into and give charge to the image (Steyerl 2012, 46-60).

The impact of Jo Spence's work, in what she termed photo-therapy and photo-theatre, will be considered first. Spence's work is vital to this chapter, as her work has explored in great depth the flows (and blockages) of desire that are so integral to the act of photographic mediation. Spence's work not only subverted the representational expectations of vernacular photography, but examined how the performative and transformative elements of photographic practice might be used to creatively critique the subject positions produced by institutional hierarchies and commodity cultures. Her work comes perhaps the closest of those discussed towards constructing a realized countervisuality; a demand to see and be seen, to claim the 'autonomy to arrange the relations of the visible and the sayable' (Mirzoeff 2011, 1). The second work examined will be Bonamy Devas' *Photographic Tai Chi* (2014). Using the body's movement as a strategy 'to reveal the algorithm in the digital image', this project disrupts the program of the iPhone in order to deconstruct its reality effects (Devas 2014). In so doing, Devas does not only reveal the algorithm, but deterritorializes the relationships between photographer-subject and image-viewer, making the role of the detached observer untenable. The final artist discussed will be John Stezaker, a conceptual artist who has been working in photographic collage

over numerous decades. Stezaker's collages have an intriguing simplicity, frequently consisting of a single splice between two images. Yet in this simple act, Stezaker recomposes the visual detritus of popular culture (headshots and film-stills) into a new field of meaning, as subjects are cut together into forms that trouble the act of identification. The solidity of the image melts away into a myriad of transformational possibilities, as the cut made in the act of taking a photograph, becomes but only one of many to be made in the photographic process.

It may seem odd to group together the works of Spence, Stezaker and Devas into one discussion, as both the aesthetic strategies they employ and the manner of their engagement with photographic materials diverge in quite significant ways. However, they are brought together here as they provide different strategies of deterritorializing our photographic apparatus; moving vernacular photography towards the border where its dominant codes and conventions begin to break down (Bleyen 2012). Rather than reterritorialize photography within the historic boundaries of indexicality and representationalism, these artists, much like the commercial institutions discussed in the previous chapters, have looked for different productive potentials from the apparatus of photography. Yet whereas photography's deterritorialization by commercial institutions is always relative to the axioms of capital, these works seek to find lines of flight that evade recapture and recuperation by the dominant social and economic system. Via different strategies, they each experiment with how photographic mediation might be productive of forms, desires and subjectivities that challenge the instrumentalization of photography by commercial and governmental institutions.

In this final chapter, it may have been preferrable to directly examine photographic mediation being used to create different ways of becoming as a part of everyday strategies of countervisuality. However, providing a full treatment of such photographies would require a socio-material analysis of the aims, strategies and groups involved, and would therefore be outside the scope of this thesis.[18] This chapter therefore undertakes the more modest task of exploring aesthetic strategies that have been employed as a means of challenging the dominant orthodoxies and epistemologies of vernacular photography. Whilst the work of Spence, Stezaker and Devas remains partially within the context of the academy, they provide an opening to think more broadly about how we might cultivate radical vernacular photographies, bridging the gap between the philosophical argument of this thesis and the realization of a set of material practices that operate against photography's instrumentalization by commercial institutions. Significantly, the role of aesthetics in these projects is not detached from the politics of everyday life but is used as a way of contesting what Mirzoeff (2011, 2) terms the 'authority of visuality'. By playing against the photographic apparatus, these practitioners challenge normalized modes of visualization that delimit our ways of looking at, speaking about and acting in the world, and therefore open out onto a broader horizon of radical politics beyond the boundaries of the academy.

These projects share a propositional form of engagement with photography, meaning that their critique of photography takes the guise of creating alternative modes of photographic mediation, channelling the energetic apparatus of photography down alternate pathways. Put another way, they deterritorialize photographic mediation, dismantling the temporal, material

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[18] Examples of such research can be found in Vivienne and Burgess' (2013) work on digital storytelling in marginalised communities, and Sarah Tuck's (2018) work on distributed modes of seeing in protest movements.

and ideological structures that stand in the way of a radical vernacular photography. In so doing, they create openings for reshaping vernacular photography into a mode of producing subjects and objects not commensurate with the dominant logics of objectification and reification. To return to Flusser (2000), they do not fully reject the photographic apparatus, but find ways of playing with it that go against the designer's intentions. In detailing these projects, the aim is to provide some form of counterbalance to the modes of deterritorialization outlined in the preceding chapters; to create a vibrant and subversive counter-genealogy of experimentation that challenges photography not only at the level of representation, but as a transformative and productive machine.

To clarify, it is not the intention of this chapter to counterpose the figure of the artist against the everyday photographer, framing the former as the exceptional modernist who rises above a lumpen photographic proletariat. Instead, these interventions are viewed as a type of philosophical and critical enquiry into vernacular photography; a form of praxis that creates an invitation to engage and experiment with different modes of mediation. Rather than critique the snapshot as an expression of the photographer's limitations as a 'creative', each of these works seeks in one way or another to reimagine our photographic apparatus. Particularly in the cases of Spence and Devas, the invitation to participate in the creation of a new vernacular is made directly. For Devas' project, the artistic 'product' is not any particular image as such, but a set of instructions that can be followed 'with a tool that is always in your pocket' (Devas 2016). For Spence, who often expressed ambivalence towards her identity as an artist, photography was made to travel outside of the art institution and into activist groups and therapeutic spaces. The invitation to participate is not a triviality in these cases but speaks to a commitment to

intervene and reshape the vernacular; to begin from a position in the crowd rather than above it.

Jo Spence: Putting Yourself in the Picture

> My continual rethinking of the past, as my consciousness changes, is impossible to stabilise. This reworking is initially painful, confusing, extreme. As I become aware of how I have been constructed ideologically, as the <u>method</u> becomes clearer, there is no peeling away of layers to reveal a 'real' self, just a constant reworking process. I realise that I am a process.
>
> (Spence 1978-9, text from *Beyond the Family Album*)

Jo Spence's career marks one of the most sustained and critical interventions into the field of vernacular photography. Moving through multiple distinct phases over a period spanning four decades, Spence's work continuously explored the role of photography in daily life, challenging hegemonic representational schemas with photographic works that operated as both caustic critique and playful proposition. Through a series of autobiographical and intimate projects, such as *Beyond the Family Album* (1978-9), *The Picture of Health* (1982-86) and *Libido Uprising I & II* (1989), Spence's artwork subverted representational expectations of the family, the body and the self, exposing the labours, illnesses and traumas that are so frequently erased from our photographic lives. Yet more than simply a critique of everyday photographic cultures, Spence sought to create new modes of conducting vernacular photography that would exceed dominant cultural and aesthetic expectations of the medium. Using an approach that drew together threads from Marxism, feminism and psychoanalysis, Spence's artistic practice explored how material conditions, social relations and photographic practices produce subjective positions that afford certain desires, whilst foreclosing others. There is a

commitment in Spence's work to the vernacular not only as an aesthetic terrain ripe for artistic appropriation, but as a cultural mode of production that might be remade into a radical and counter-hegemonic apparatus; a set of tools to be reshaped into a weapon against the reifying and objectifying effects of mass-visual culture.

Spence's early writings critique the relationship between cultural and commercial institutions and photography as one that predominantly diminishes and restricts the latter's potential as a mode of personal exploration and empowerment. In her work as a founding member of the independent research and education collective, *Photography Workshop*, and later in the feminist offshoot group, *The Hackney Flashers Collective*, Spence articulates the necessity of producing photographic technologies and processes outside of corporate control as a vital part of 'demystifying' the photographic process (Spence 1995). The cheap *Welliflex* homemade camera, made as part of a series of children's photo workshops conducted by Terry Dennett and Jo Spence, is indicative of this desire to create a different relationship between people and photographic technologies than the commodity fetishes of Kodak (Spence 1995, 34-35). However, there is also a recognition that the widespread proliferation of consumer photographic equipment afforded an opportunity to challenge the dominant ideology in ways that other media could not achieve at the time: 'Photographic technology is so highly evolved and relatively cheap that we now have a potentially revolutionary means of production in our hands' (Spence 1995, 165). The task of redefining and reinventing photographic practices was therefore shifted onto the broader cultural, institutional and ideological underpinnings of vernacular photography. Working simultaneously with and against the apparatus, Spence's focus moved to decoding photography by channelling previously unseen emotions and unspoken desires through the camera.

If vernacular photography at the time was concerned with producing the *right kind of family*, Spence's work can be understood at one level as deconstructing the visual symbols that are mobilized in the production of this narrative. By filling in the blanks of the 'patterned worldview' created by Kodak culture (Chalfen 1987), Spence denaturalized the vision of the everyday created by mass photography. *Beyond the Family Album* (1978-9) exemplifies Spence's engagement with these questions, shining a light on the 'troublesome' aspects of our everyday lives that are so often excluded from photographic narratives. A collage of personal photographs, written reflections, catalogue clippings, advertisements and quotations, *Beyond the Family Album* destabilized the solid and coherent linear narrative of the family album, colliding these fragments into a more complex, provisional and unsettling narrative. For example, one panel in *Beyond the Family Album* contains a series of nine contrasting self-portraits through which Spence's struggles with self-image are examined. Each photograph is anchored to a text describing the relational meaning behind the image, such as 'How I'd like to look' or 'What happens when you completely change one part of your face'. By playing out these personal struggles in front of the camera, rather than obscuring them behind the visual tropes of snapshot photography, Spence challenges the authority of the family album with a more contingent and processual photographic practice. Through the effects of collage and intertextuality, Spence's subjectivity is reframed; no longer captured and reified within the image, it spills out of the frame into a field of competing intersubjective gazes, both real and imagined.

The force of Spence's work comes from an acknowledgement and redirection of the performative and generative nature of vernacular photography. Rather than counter the ideologically infused performance of vernacular photography with a documentarian drive for neutrality and objectivity, Spence constructs a

countervisuality that challenges the normative values embedded within photography: 'But if my work is about deconstructing visual signs and symbols, it is also concerned with the continual reconstruction of such signs in ways which are more in the interests of those they signify than those who traditionally control signs production and circulation' (Spence 1995, 135). In decoding the symbolic work of photography, Spence does not erase the generative nature of mediation, but instead makes photography productive of new ways of understanding and exploring our relationships and desires. Rather than replicate techniques from documentary photography, Spence constructs 'spectacles' that present the social and psychological struggles that pervade our public and private lives, externalizing the matrices of gazes that constitute the subject.

Using a technique described as 'phototheatre of the self', the subject is collaboratively explored through stage-managed shots concerned with 'the making visible of psychic reality' (Spence and Martin 1995, 165). This approach can be seen in the work *Infantilization* (1984), part of *The Picture of Health* (1982-6) series that chronicled Spence's treatment for breast cancer through the state healthcare apparatus and her pursuit of alternative healing treatments. During this period, Spence became acutely aware of the force of the medical gaze, and the disempowerment and loss of control that occurs as the body becomes an object of treatment or study. Viewing the body as a site of struggle, Spence uses photography as a means of denaturalizing the power relations of the medical gaze, reclaiming the right to her own subjecthood; of 'becoming the subject of our own histories rather than the object of someone else's' (Spence 1995, 140). Spence faces the camera directly, wearing a bonnet and smock, with a bow tied around her neck and a pacifier in mouth; her expression angry and defiant, but her mouth gagged (Figure 7). Externalizing the struggles of disempowerment over the body, this performative act of self-portraiture visualizes the

relationship between the omniscient gaze of the medical institution and the patient. In depicting these relationships, Spence asserts the right to challenge the hierarchies and power structures that often work through their normalized invisibility. Visualizing these relationships is not only a political act by virtue of the image's symbolism, but through the very act of the subject claiming the right to be seen. Against the permanent renewal of the institutions authority to define the body on its own terms – to produce a 'normalized' representation of the medicalized body – Spence's work operates as a strategy of countervisuality, producing a new vernacular that can challenge the underlying relational dynamics embedded in the reifying discourses of healthcare.

Figure 7. Jo Spence, 'Photo Therapy: Infantilization', 1984. Collaboration with Rosy Martin, Colour photograph, 123 x 82 cm.

Spence addresses photography as a field of production that has material effects on our engagement with and relation to the world. Photography is critiqued not only at the symbolic level of the image, but as an assemblage of processes that unfold temporally, spatially, psychologically and (significantly for Spence) intersubjectively. Spence's challenges to the representational ideals of photography are less an end in and of themselves, and more the visible edge of combining photography with everyday life in experimental and playful strategies. As Annette Kuhn writes, reflecting on the impact of this work:

> What matters here is that images and their meanings (and indeed theories about the meanings of images) are, precisely, subsumed to their *uses* – to praxis, to what we do now and what we might do in the future with our photographs, as we explore our past and present lives in the quest to find ways of changing things.
>
> (Kuhn 1995, 22)

Integral to Spence's reinvention of photography was not only the creation of new representational concepts, but a challenge to the teleology of photographic practice, troubling the concept of the photographic object by demanding the right to look again; to return to, repurpose and redefine the image, setting it to work in new juxtapositions, montages and narratives. This type of work became a significant component of the forms of phototherapy that Spence developed in collaboration with Rosy Martin. Drawing on Freudian psychoanalysis, but also on the contemporaneous work of David Cooper and R.D. Laing in the anti-psychiatry movement, Spence came to view photography as part of a therapeutic process for working through the traumas, stresses and illnesses that are inflicted on the subject (Vasey 2019).

Taking a lead from the anti-institutionalism and peer-led ethos of these fields, Spence developed forms of phototherapy that depended upon reciprocity and mutual recognition. Reckoning with the power relations that are embedded in the photographic gaze, Spence and Martin sought to complicate the classical hierarchical dynamics of photography. As George Vasey (2019) describes, their approach was one in which 'Rather than a gaze that is acted upon someone, the photographer and subject meet halfway. Representation is shaped via an interdependent and mutual relationship'. Eschewing the traditional division of labour between photographer and subject, Spence and Martin's development of phototherapy relied on a collaborative approach that could problematize questions of authorship and control. Carrying the concept of 'co-counselling' through to phototherapy, the objectifying gaze of the photographer is fragmented between participants, deconstructing the Foucauldian panoptic gaze by dispersing its power. Alongside these dynamics, the act of role-playing was used to further complicate the functioning of power relations. By taking up the role of the other, the power of their gaze is made visible (whether it be familial, institutional, imagined or real) and therefore open to scrutiny and critique.

Drawing photography into the therapeutic process also entailed a destabilizing of the material and ideological solidity of the photograph; a refusal to let the accumulated desires that lie scattered over its surface become stratified into an immutable reflection of the self. As we saw in Chapter 1, it is partly the disavowal of photography's productive and transformative nature that enables the photograph to become reified, our desires mystified as a natural property of a technical image. It is this act of disavowal that is disrupted in Spence's work through foregrounding the performative and contingent aspects of photographic mediation, making crossed gazes, unrepresentable feelings and unruly desires the 'reality' of photography. In this process, the photographic

image holds its affective charge, but is re-presented as a refracted fragment of identity that 'frees up the individual from the constant search for the fixity of an "ideal self" and allows an enjoyment of self as process and becoming' (Spence and Martin 1995, 176). Spence stresses that the process of phototheatre does not circumvent the objectifying power of the image, but instead connects it to a different productive circuit of open-ended exploration and experimentation. Drawing on Winnicott's theory of 'transitional objects', Spence reimagines the photographic image as a 'stepping stone' between different versions of the self (Spence 1995, 176). By altering the desires and affects that we bring to photographic mediation, the underpinning onto-epistemology of the image is seemingly transformed from a reified essence captured within the representational plane, to something much more contingent, unruly and transformative.

Whilst this discussion has by necessity been brief, it indicates how Spence's work demonstrates the potential for eschewing the commercial and ideological imperatives that are invested in our photographic apparatus. Rather than seeking reprieve from or abandoning the productivity of photographic mediation, Spence twists and redirects the affective charges that are always already coursing through the act of photography. Deterritorializing photography in this way offers a pathway for critiquing and challenging the power relations that are (re)produced through the camera, but also for producing new relations, both inter- and intra-subjective. There is control in these manoeuvres, an experimentation that selectively and carefully seeks out new subjective conjunctions; a tentative yet forceful exploration that probes at the boundaries of photographic subjectivity without giving way to chaos and decay. Against total immersion, Spence heeds Deleuze and Guattari's (1986, 161) warning to 'have a small plot of new land at all times', but to 'keep small rations of subjectivity in sufficient quantity to enable you to respond to the

dominant reality'. The processes of deterritorialization that Spence activates are so powerful because they do not plunge us into a black hole, but keep us stubbornly in the field of power relations to which we must return. We remain the subjects of late capitalism, of patriarchy, class politics and commodity fetishes. There is no transcendent ascent. But segment by segment, subjectivity is reshaped through mediation into forms better able to resist the reifying and commodifying effects of capital. Spence had a proclivity for the term 'cultural sniper' to describe her practice. As we participate and engage with these strategies of reshaping vernacular photography, perhaps there is the potential for us to become a critical mass of 'cultural snipers'.

Bonamy Devas: Moving Against the Apparatus

There is an elegant simplicity to Bonamy Devas' *Photographic Tai Chi* (2014-ongoing). Devas invites us to purposefully confuse the algorithm of the iPhone by moving our bodies in unexpected ways. Selecting the panorama function on the smartphone, and pulling the device in directions that go against the camera's expectations, the algorithm that underpins the digital image is revealed (Figure 8). By moving against the program of the camera, the constructed nature of the digital image is made apparent, as the reality effects of photographic representation break down before our eyes. As Devas (2014, n.p.) explains, 'No post-production, Photoshop effects or apps are used to make these images. They are simply the product of a confused Apple iPhone trying to construct a reality that does not in fact exist.' But there is also more to Devas' work than revealing the algorithm of the iPhone. Incorporating the movement of the body in a focused yet playful way, our separation from the representational plane is disturbed as we leave an indelible marker of our presence upon the image's surface. Playing against the apparatus does not only make visible the techno-cultural foundations of the digital image, but generates

a mode of photographic mediation that has the potential to challenge the dichotomies that have historically defined the epistemology of photography (subject-object, observer-observed, culture-nature).
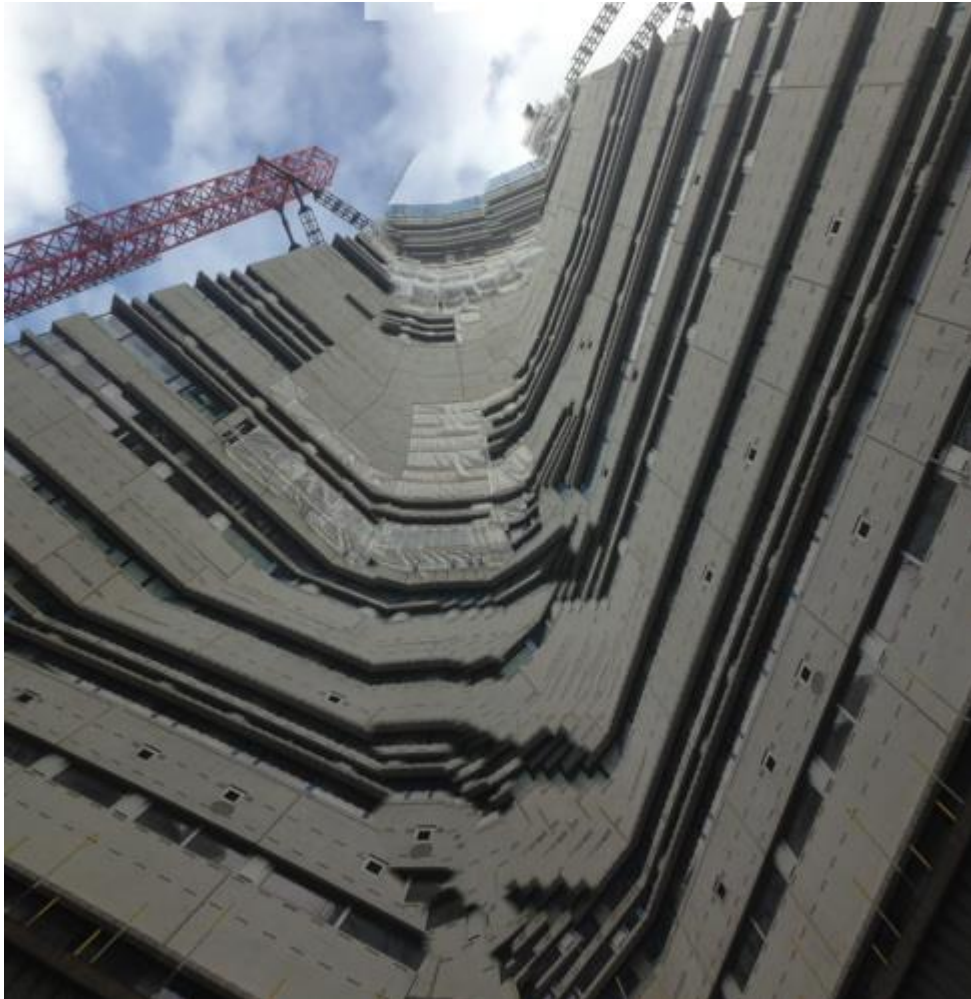

Figure 8. Bonamy Devas, example of 'Photographic Tai Chi' taken as part of workshop at Tate Modern, 2015.

Devas places *Photographic Tai Chi* in an artistic context of disrupting visual representation, citing Picasso and Polke as earlier examples in this long tradition. However, the significance of this intervention is also in part due to the open and accessible nature of the project; Devas is not simply disrupting the image, but is offering us all an alternative route through the apparatus of the iPhone. The simplicity of *Photographic Tai Chi* enables its return to the

vernacular, a photographic game that can be played by anyone with a smart camera, at any time or place of their choosing. As we have seen however, games and play can be serious business. On the one hand, forms of play have become increasingly co-extensive with forms of digital labour, as our mobile devices are connected to corporate surveillance infrastructures that operate through affective textures and engaging environments (Pink et al. 2018). On the other hand, as theorized in Flusser's work (2000), play can be understood as a critical strategy for operating against the apparatus and of exercising creative freedom against the automation of everyday life. As Zylinska (2017, 37) writes, Devas 'can perhaps be said to be taking a step toward what Flusser called "a society of artists"- players who engage in moves and countermoves in order to reprogram the apparatus.' However, in what ways can the disruption that Devas causes be framed as a reprogramming of the apparatus? Is the work it performs against the camera any more meaningful than the litany of other user errors and glitches we make everyday?

There are two dimensions to Devas' work which suggest that this disruption to the algorithm is significant. These correspond respectively to how the subject positions of the photographer and the viewer are constructed via their mediation. Firstly, as touched upon above, the movement of the photographer troubles their formation as a detached observer. With our drags and twists we are actively implicated in the scene, traces of our body reflected in the fractures and smears that are spread across the image. We are made to confront the productive nature of our photographic interventions, the particularity of our embodied subjectivity refusing to be cloaked behind the lens of objectivity. Without necessarily intellectualizing the process, we cross the threshold from identifying to participating in the image, actively engaging in the accumulation and circulation of objects, bodies and affects that comprise the matter of photography (Steyerl 2012). The act of photographic mediation ceases to strive

towards the goal of making a mirror of the camera and the photographer, calling on each instead to generate novel configurations and conjunctions. Inserting this technique into everyday situations and locations, we find ourselves resculpting the matter of daily life with a twist or lunge of the body. The rational perspectivism of photography is seemingly jettisoned, as in its place springs impossible Escherian architectures, distended bodies worthy of Bacon and hybrid monsters reminiscent of Cronenberg. From a structuralist perspective, Devas' *Photographic Tai Chi* appears to expose the edifice of photographic realism as expressed through the digital image. Yet from a materialist and vitalist perspective, this technique appears as a means of generating innumerable possible realities through the productive potential of mediation, each seemingly as viable as any other.

On the reverse side of this photographic equation, the spectator's position is also troubled by such manoeuvres. The 'one-eyed and immobile spectator' which photography had inherited from the techniques of linear perspective is thrust into a moving body (Steyerl 2012, 18). The site from which to produce a stable subject position is lost in the disjointed and swirling scene unfolding before us. The positioning of the photographer and the spectator has traditionally been one that is shared; the photographer guides the viewer to the position where they stood at the moment of creation. We are expected to view the scene as the photographer would have, to stand detached and outside of the scene, thereby capturing a degree of their mastery over the subject. However, as the photographer's body refuses to remain static, we find ourselves unable to trace the outline of this figure. There is no place from which to stand and gain control over the image, no position from which to constitute ourselves as detached observers. Our only option is to engage in a reciprocal dance as participants in the image, swivelling and lunging in resonant sympathy with the photographer.

According to Hito Steyerl (2012), the fixed horizon of linear perspective provided the stable ground upon which the enlightenment subject was constructed. However, the scientific laws that abstractly constructed this position also universalized the subject, diminishing their ability to freely participate in the image: 'While empowering the subject by placing it at the center of vision, linear perspective also undermines the viewer's individuality by subjecting it to supposedly objective laws of representation' (Steyerl 2012, 19). Accompanying the transition to late capitalism and postmodernity has been a dismantling of this mode of visuality; the horizon, along with the ground beneath our feet, fragmenting and dispersing, plunging us into free fall. As Steyerl (2012) argues, this free-falling condition of postmodernity is double edged. With subjectivity fragmenting into a collection of intensities, systems of control and surveillance stacking vertically via satellites and drones, and calculations of risk based on the sureties of the past replaced by the endless probabilistic speculation of never realized futures, we are clearly falling deeper into the torrents of capitalism's deterritorialization. And yet there is no clinging to the edge, no desire to haul ourselves back to the firm ground of imperial capitalism, with the trappings of colonialism, slavery and other modes of forced labour and subjection that were its praxis. On the contrary, we should look to the degrees of freedom enabled by this freefall as our means of escape from the new mechanisms of control. Just as the modes of visuality constructed by early modernity contained the seeds of their own downfall, so too does the new regime, as 'what seemed like a helpless tumble into an abyss actually turns out to be a new representational freedom' (Steyerl 2012, 27).

Devas' *Photographic Tai Chi* may not provide a coherent countervisuality through which to seriously challenge the visual order of contemporary capitalism. However, what this project suggests is the possibility of exploring

the degrees of freedom that have been activated in the dismantling of previous visual orders. Revealing the algorithm of the smartphone does not only demonstrate the ideological constraints that haunt most of vernacular photography, but perhaps more significantly provides a space in which to orient ourselves to the ordering and aestheticizing strategies of networked late capitalism. The experience of free fall that Steyerl describes does not necessarily mean complete surrender, and through *Photographic Tai Chi* we are given the opportunity to find our bearings in these new territories, to experiment with moving and arranging ourselves in forms better equipped to face contemporary assemblages of control. This is not to say that all who engage Devas in this game intellectualize the conditions of photographic production and the visuality of contemporary capitalism as they move their bodies. But perhaps through this playful movement, we can begin to construct a vernacular knowledge that emerges through our interacting with photography differently.

John Stezaker: Cutting and Pasting

In the open-ended series, *Masks* (2005-ongoing), John Stezaker overlays the headshots of B-List Hollywood actors from the mid-twentieth century with postcards of caverns, tunnels and waterfalls (Figure 9). A partial formal similarity is turned into a conjunction between the two images; a hairline is matched to a tree line, a forehead to a cliff side, or a dark passage to an eye socket. Images that are disparate in both content and form are brought together in a tentative and compelling relationship through this simple yet transformative gesture. Characteristic of Stezaker's approach to collage, a medium he has been working in since the 1970s, the *Masks* series is economical in its appropriation and intervention, following a logic of 'minimum mutilation' towards its source material (Stezaker 2017, 20). There is always a degree of violence in the cut, a rupture being introduced that interrupts the

symbolic work being performed by the image (Batchen 2017). Yet unlike the explosive and jolting force of earlier Dadaist and Surrealist collage, Stezaker's cuts are suggestive and sensuous. A single opening is made in the representational plane between two worlds; a passageway built on a scaffold of aesthetic and geometric congruence. Whilst the actors face is literally obscured behind the 'mask', a more haunting revelation is made as we participate in the excavation of features, memories and personalities.

Figure 9: John Stezaker, 'Mask XIV', 2006.

At a literal level, the eponymous mask of these images is the postcard that conceals the face of the subject. Yet it is also clear that the inverse scenario is also at play, as we become 'aware of how the postcard, instead of being in front

of the face was a space behind it' (West 2007). For these faces are already obscured behind a series of veils that preclude identification: a gulf of time and lack of recognition that places the figures outside of our cultural frame of reference; the strained pose of the headshot that conceals a well of emotions and desires; and the smooth and resistant features that offer no reflection, even under the bright studio lights. From this perspective, the laying of the postcard becomes a counterintuitive moment of peeling away, creating a connection to worlds both real and imagined. The distancing effects we experience in encountering the image are not overcome through the addition of yet another layer. However, what they indicate is a possible pathway for uncovering a rich seam of affective resonances that expands beyond the particularities of any one of the individual subjects. The cliff sides and cave walls that feature in many of the postcards are suggestive of a stratification that has taken place over a much longer time scale to that of our faded actors. Yet puncturing these geological features are warrens, rivers and waterfalls; phenomena that shift these stratified layers through continuous pressure and force. They indicate the possibility of a reconnection to duration, a reanimation back into the circulation of matter and meaning from which they had escaped.

John Stezaker's work follows a tradition of collage that was a mainstay of the avant-garde in the early to mid-twentieth century, used with particular force by artists such as Hannah Hoch, Kurt Schwitters, Marianne Brandt and Joseph Cornell. At its most fundamental, the act of collage entails moving objects from one environment to another, bringing them into a new field of meaning and relationality, 'the transposition of elements from one context to another in order to recalibrate the meanings of those same elements' (Batchen 2017, 25). Unanchored from its contextual mooring, the image is deterritorialized, free to enter into new symbolic assemblages. In the hands of the avant-garde, collage became a way of subverting the flow of images that were circulating in the

mass-media of the day, disrupting their symbolic operations by cutting and pasting them into new signifying relationships. The role of advertising and newspaper imagery, in works such as Hannah Hoch's *Cut with the Kitchen Knife…* (1919-20), was indicative of a drive to return art to the sphere of daily life, to be embroiled in political struggle, personal strife and cultural production. By incorporating the visual detritus of a disposable mass-culture into the artwork, the aesthetic separation of the arts from the everyday was rendered untenable. In direct response to the catastrophes of the First World War, but also to the perceived ills of bourgeois capitalism, nationalism and colonialism, these works sought to enter and disrupt the production and circulation of commercial and state propaganda that had rapidly expanded during the interwar period. Wearing the sheep's clothing of slogans, logos and newspaper clippings, they entered the territory of hegemonic cultural reproduction and began subverting and detourning the organs of ideological dissemination.

There are, of course, significant differences between the collages produced by the interwar avant-garde and those made by Stezaker. The explosive, dizzying and fragmentary juxtapositions that reflected the chaos and disintegration of the cultural and political climate during the early twentieth century are far removed from the singular surgical incisions made in the *Masks* or *Marriage* series.[19] The intertextuality of graphics, text and images is also jettisoned in favour of a focus and fascination with exclusively photographic materials. Lastly, there is an archivist's care in Stezaker's use of materials that features little of the violence wrought on disposable and mass-produced imagery by

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[19] We might also consider Stezaker's work in relation to the Dadaist readymade. Stezaker (2017) himself speaks of the influence of Duchamp's work on his practice, particularly in reference to the *Marriage* series. The reimagining of everyday objects through their recontextualization and combination, that characterized at least some of Duchamp's work, can be seen in the 'reparative reintegration' (Campany 2007, 21) of found images that Stezaker performs in this series.

Hoch or Schwitters. Yet these dissimilarities should not eclipse their shared attention to the vital and productive potential of the cut. A desire to 'keep the cut active, palpable, thinkable' (Campany 2017, 21) is apparent across these works; the photographic object is opened up, but is never closed again within a fixed circuit of meaning. As Stezaker writes:

> From the beginning, I thought of my collages as cutting into, opening up. That's why so many of my early titles related to surgery, "Incisions" and "Excisions". I wanted to open up a space that I thought of as closed; in other words, to introduce a seam into what was seamless about the media image.
>
> (Stezaker 2017, 24)

The introduction of a seam is therefore not only about disrupting one field of meaning, but about the possibility of activating new productive fields. The cut in these works is not a *cutting off* (i.e. a Freudian cut) or a *cutting out* (i.e. a postmodern cut); it is a *cutting open* that suggests there is more to be explored beneath the ossified surface of representation.

The act of cutting is a significant feature of all artistic endeavour, and as Kember and Zylinska (2012) argue, of life in general. As discussed in the preceding chapters, the cut assumes an ontological significance as an act of differentiation between phenomena, a fundamental aspect of 'shaping the universe, and of shaping ourselves in it' (Kember and Zylinska 2012, 75). It is only by cutting that we are able to make sense of our location in and relation to the world; to give shape and form to the matter we are surrounded and inhabited by. Kember and Zylinska argue that the vitality and agency of photography has frequently been overlooked, in part due to a theoretical sleight of hand by which the product of photography (the photograph)

frequently stands in for the act of photography. Drawing on Bergson and Barad, however, they argue for a photographic ontology in which the cut operates as an active intervention in temporal flows of mediation; photography not as the passive recording of matter, but as the intra-active production and differentiation of forms. It is through this conceptual apparatus that the ontology of photography is framed as one of becoming: '[Photography] takes on and reveals, instead of concealing, the agential cut which is involved in transforming matter into objects. In this, it *produces* life forms, rather than merely recording them' (Kember and Zylinska 2012, 83).

It may seem odd to place Stezaker's work in the context of Kember and Zylinska's argument concerning the ontology of the photographic cut. If we are at risk of eliding photography behind the photograph, does the collagist working on archival materials not compound this problem? In other words, are we not starting in the territory of objects which have already been cut off from their temporal horizon? However, as this thesis has argued, the photograph is not only the product of photography, it is very much an integral part of the photographic apparatus. From the construction of narratives in the family album, to the production of relational databases through pattern recognition technologies, the cuts made with the camera are rarely the last. By experimenting with different types of cuts, Stezaker enables new connections to be made. Photographs that had been stratified and separated from the flow of mediation are seemingly reanimated. These cuts reveal to us that the teleology of photography – the swift arc through the apparatus towards the representational image (Cohen 2005) – is contingent on the photograph becoming detached and separated from the world. If cutting well entails cutting 'in a way that does not lose sight of the horizon of duration or foreclose on the creative possibility of life enabled by this horizon' (Kember and Zylinska 2012, 82), perhaps to cut well also entails being always open to the next cut; to

refuse the finality of the image and to be ready to cut again. In this way, we remain open to the possibility of the photograph being productive of new relations, desires and meanings, and keep the image alive to temporality and duration.

It is evident from our examination of the networked image and machine learning that the productivity of contemporary vernacular photography continues after the image is created. For example, in the case study of Ditto, it was shown how the image is destabilized as a fixed container of meaning, being cut into discrete variables that operate independently as reified bits of photographic data. Stezaker's work, despite his decidedly non-digital modus operandi, refracts back on these practices by suggesting alternative modes of productive cutting that can be performed after the image has been made. Rather than a process of fragmentation, we might ask whether the surgical hand of Stezaker offers us a vision of being cut back together, of a moment of 'reparative reintegration' (Campany 2007, 21). Yet as the *Masks* series suggests, this is not a return to the modernist or romantic subject, but the creative possibility of hybrid and intra-active subjects that always keep their seams open and active.

Looking for New Weapons

The projects discussed in this chapter offer alternative pathways through the apparatus of vernacular photography. They are each suggestive of how photographic mediation can be deterritorialized to become productive of subjectivities, relationships and desires that are not entirely commensurate with the dominant structures of capitalist production and reproduction. By taking seriously Flusser's (2000) injunction to play against the apparatus, they find programs that twist the ontological and epistemological agency of

photography. In the cases of Spence and Devas, this is part of a direct challenge to the modes of production that photographic mediation participates in. For Spence, this meant channelling desires, fears and anxieties through the apparatus which resist being incorporated into the symbolic narratives of positive personal growth and supportive familial bonds. Refusing to be entirely crystallized within the image and thereby sublimated into a purely representational object, these desires spill out of the frame, revealing the matrices of gazes that are co-constitutive of the photographic subject. Devas' work likewise troubles the production of clearly defined subjects and objects, as the movement of the photographer's body prevents us from finding stable ground in the image. Whereas the stated intention of Devas' project is to reveal the 'hidden algorithm' of the smartphone camera (Devas 2014), what he also reveals is a territory of experimentation that challenges the epistemological dualisms of photography, whilst remaining accessible and engaging to a broader community. Finally, whereas the target of Stezaker's knife is sometimes less clear, the ruptures he produces in the fabric of photographic mediation are no less significant. Cutting both into and across the image, seams are left open in the photographic object that reactivate its potential to enter into new fields of meaning (Stezaker 2017). The act of cutting is always an act of violence, but here it is also an act of restoration, restoring vitality to the image that has been sealed off from the horizon of duration.

There is a shared recognition in these works of the productive and vital nature of photographic mediation that is always already exceeding the boundaries of the photographic image. Entangled with circuits of labour, desire and capital, we cannot transform photography in isolation from these phenomena, but must instead make visible these connections. To deterritorialize photography means first to make maps of this territory; to visualize the obscured relationships that underpin much of our photographic activity. As Spence's

work demonstrates, making these relationships visible is itself a moment of deterritorialization, as what was stable and immutable becomes contingent and contestable. To return briefly to Mirzoeff's (2011) concept of countervisuality, these points of revelation are not simply a matter of exposing the true order of things, but of recognizing the strategies of ordering, separating and aestheticizing that are always at work in the (re)production of the everyday. There is not an unmediated reality beneath the surface to be unmasked, but there are differently mediated realities which throw the power relations, political structures and commercial investments of vernacular photography into sharp relief:

> The 'realism' of countervisuality is the means by which one tries to make sense of the unreality created by visuality's authority […] It is by no means a simple or mimetic depiction of lived experience, but one that depicts existing realities and counters them with a different realism.
>
> (Mirzoeff 2011, 5)

In countering one realism with another, there is no retreat from the productive potential of mediation, but a commitment instead to make the apparatus at our disposal productive of something else. The apparatus of photography is not delimited by the camera and the image, but extends in one direction to the perceptual and desiring organs of the subject, all the way in the other to the commercial and governmental structures that organize and calibrate the grounds on which our subjectivities are formed. It is precisely an acknowledgement of and intervention into this expanded territory of photography that makes possible the moment of deterritorialization; to reveal the field of production that photographic mediation participates in and thereby afford the possibility of its reconfiguration.

This thesis has detailed how vernacular photography has been deterritorialized and reterritorialized into assemblages that transform the productive potential of photographic mediation. Structures that limit the flows of images, desires and capital are slowly dissolved, as photographic mediation is made commensurate with new modes of productivity, whether that be industrial production and mass marketing, or machine learning and platform economics. However, as this decoding happens, openings appear in the fabric of photography and new opportunities arise for counter-operations and radical deterritorializations. Rather than balk at the decoding of photography taking place under the banner of capitalist reproduction, we must therefore find ways of critically participating – both with and against our apparatus – in order to find the fissures that are created by such a movement. As Devas' intervention demonstrates, photography's remediation through the networked image has created the opportunity for interrogating and experimenting with the production of new photographic realities. Rather than remaining fixated on retrieving the essence of photography, of which the networked image has always been haunted by claims of ontological impurity, Devas challenges the meaning and matter of algorithmic photography on its own terms. This work demonstrates the potential of interventions into vernacular photography that do not take the form of a search for transcendence, of being elevated above or beyond the field of capitalist relations. For it is the immanence of photographic mediation to the production of everyday life that affords the possibility of generating new desires, relations and subjectivities.

The projects discussed in this chapter remain at the periphery of contemporary vernacular photography. Significant questions remain as to whether they pose a serious challenge to the productivity of photography under capitalism, or if instead they represent fertile new grounds for its expansion. Antagonism and insurgency are not always anathema to capitalist modes of operation, but can

provide the necessary friction and vitality for its continuing evolution (Boltanski and Chiapello 2005). Playing against the apparatus may create the opportunity for reimagining the productive nature of photographic mediation, but may also be recuperated into assemblages on the horizon that are just as pernicious as our current systems of control. But perhaps this is setting up a false binary; might these interventions pose both a risk and an opportunity? Deleuze and Guattari (1983, 378) suggest that capitalism's drive to deterritorialize contains the seeds of its own destruction: 'It will be a decoded flow, a deterritorialized flow that runs too far and cuts too sharply, thereby escaping from the axiomatic of capitalism.' By leading vernacular photography down paths that run too far or cut too deep, can we encourage and cultivate deterritorializations that are more difficult to maintain and control: images that fail to solidify; subjects that refuse their representation; and spectators who resist their separation? These remain open questions, and perhaps, following Stezaker's injunction to leave the seams open, ones that must remain so in order for us to remain responsive to a continually evolving situation.

Concluding Remarks

When I began this research project, particular aspects of contemporary vernacular photography appeared as extraordinary or noteworthy, stretching and twisting photographic mediation in directions that challenged my theoretical assumptions. By its close, many of these same phenomena are now at least partially submerged into the everyday, having become normalized parts of photographic practices and routines. The arrival of the networked image had already been largely accommodated for within photographic theory, yet the imbrication of vernacular photography with machine learning, neural networks and augmented reality possessed the lustre of something novel and unaccountable. Having learnt the lessons of the debates taking place during the 1990s concerning the apparent demise of photography triggered by the arrival of the digital image, the starting point for this thesis was not to interrogate whether photography would survive its encounter with these technologies, but to ask how the practices of vernacular photography were being put to work as part of new socio-technical formations (Lister 2007). Believing the investments of commercial institutions to be as vital to the economy of photographic desires as those held by the vernacular subjects and objects of photography, my analysis led me, in reciprocity with the case studies I have examined, to recognize new demands being placed on vernacular photography. I have not posited a previously existing ontologically secure form of photography, nor claimed that any of these technologies in abstraction disrupt the fabric of photography. However, I have argued that the material and discursive frameworks produced by the competing needs of commercial institutions have changed the meaning and function of vernacular photography in everyday life.

I have spoken earlier about the limitations of Bolter & Grusin's (1999) theory of remediation. Despite the value in emphasizing the commonalities between various modes of mediation, collapsing the process of remediation onto the poles of immediacy and hypermediacy elides significant distinctions in the political economy of media. Flattening their differences onto this axis may insulate media theory against over-reactive proclamations of ontological earthquakes at the arrival of new technologies, but it leaves unanswered significant questions regarding how best to challenge or contest the power relations that flow through these media.[20] The content of one medium may always be partially that of another, but we must also be attuned to how each remediation seeks new ways of generating value, creating novel circuits of desire, labour and capital that exceed the productive potential of their predecessors. To put it another way, the digital and networked image may adopt the visual 'reality effects' of chemical photography in making its claim to representational realism, but the reorganization of 'reality' that the networked image facilitates cannot so easily be accounted for under the terms of its predecessors. As Katrina Sluis (2020, 122) argues, 'the digital image cannot be apprehended as a remediated image: it is a *database*-driven image, a *networked* image in which the computer interface is a site where a network of humans and non-humans become linked, and is animated through interaction.' The near-instantaneous materialization of the image in multiple places at once can be read as a recalibrated claim to immediacy, but the protocols and processes that produce this affordance suggest a reconfiguring of social relations that challenges the status of the subject as a stable and separate recipient of the image. Subsuming the rise of operational images, photographic interfaces and

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[20] Bolter and Grusin (1999, 15) acknowledge this, stating, 'Our genealogical traits will be immediacy, hypermediacy, and remediation; however, where Foucault was concerned with relations of power, our proposed genealogy is defined by the formal relations within and among media as well as by relations of cultural power and prestige.'

pattern recognition technologies under the rubrics of immediacy and hypermediacy misses the role of these technologies in reorganizing the material and affective environments in which photography circulates, including the subject's own affective, libidinal and perceptual apparatus. To account for these phenomena, we must think instead of photographic mediation as a productive force that plays a significant role in shaping how we relate to ourselves, each other, and the world (Kember and Zylinska 2012).

The concept of photographic mediation as a productive and transformative force has been central to my understanding of vernacular photography in this thesis, enabling me to consider how photography acts in the world, without being restricted a priori by a representationalist ontology. The production of representational objects is a significant part of vernacular photography's agency. However, the visual and symbolic work that is performed by the image captures only one aspect (albeit significant) of photographic activity. Emphasizing the temporal and processual dimensions of photography, the concept of photographic mediation temporarily puts aside the teleological imperative of the image, providing us with the latitude to ask what else photography might generate.[21] For example, in the case study of Snapchat, the production of mediated subjectivities was grounded in an ambient, ephemeral and intertextual mode of communication that eschewed the enduring image as the telos of vernacular photography (Jurgenson 2014). Focusing on the act of photographic mediation, rather than the photographic image, proved vital in recognizing how ephemerality functions as a strategy for collapsing the boundary between photography and everyday life. By decoding the photographic event as marking a poignant or exceptional moment, Snapchat

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[21] Carefully balancing Bergson's *creative evolution* with Derrida's *differance*, Kember & Zylinska's (2012) foregrounding of *processuality* in mediation should not be misread as a rejection of stable states, but as a recognition of mediation's role in producing differences.

enabled photography to occur in the flow of daily experiences. We might say the productive potential of photographic mediation for Snapchat is not measured in the number of images produced, but in how tightly interwoven photography becomes with our beliefs, desires and behaviours.

The framing of photography as a productive endeavour has also played a significant analytical and political function in my argument. The concept of productivity places photography in the sphere of material relations, foregrounding the generative and transformative agency of mediation. In addition, the concept of productivity indicates an imbrication with capitalism that must be accounted for in mapping the meaning and matter of vernacular photography. As I have been careful to emphasize, capitalist modes of production, and the reciprocal forms of social relations that they foster, do not determine the meaning of vernacular photography. However, in so far as commercial desires are invested throughout the extended apparatus of photography, the instrumentalization of its potential towards the extractive axioms of capitalism must form part of the grounds on which any system of countervisuality is constructed. As we saw in Chapter 4, there is no direction we can point the camera that escapes or transcends these institutional investments. Instead, we must find pathways through the apparatus that challenge, subvert and cut open photography to new connections, productivities and politics. As per Flusser's (2000) injunction to play against the program of the camera, we must critically engage with the apparatus in order to break new ground outside of its preformed possibilities. Doing so requires that we engage with the protean materialities of photography, analyzing the structural and discursive frameworks that it operates within, the modes of subjectivity it activates, and the strategies of generating value that are employed.

As this thesis concludes, transformations to vernacular photography continue apace. Machine learning and computer vision technologies in particular have become even more thoroughly imbricated into the hardware and software of our photographic apparatus, with neural networks of the sort described in Chapter 3 embedded throughout the photographic process. For example, a recent smartphone offering from Apple, the iPhone 11 Pro, uses a process termed 'deep fusion' in the creation of an image, capturing eight individual shots that are fused into a single photograph by extracting and combining the 'best pixels' of each, all without disruption or notification to the photographer (Cao 2019). These always already composited and manipulated images may not trouble photographic theory in the ways that the first digital images did, the essentialist ontology of photography already largely abandoned. However, as these technologies come to be embedded into all aspects of our photographic practice, they reconfigure the agency and productivity of photographic mediation in ways that require careful analysis. Face-swapping, face-aging and other image-transforming apps emerged as sensational and newsworthy affairs, garnering significant media attention as uncanny augmented selfies populated Instagram and Facebook feeds with people participating in viral campaigns (e.g. the *#FaceAppChallenge*) (Bisset 2019). Yet the underpinning technologies of such phenomena have social and economic applications that reach far beyond the 'photography of attractions' that marks their arrival in the popular imagination (Buse 2010a). Through these advances in machine learning and image processing, photography has been embedded deeper into routines and protocols that reshape the everyday, becoming an ever more integral part of not only representing, but (re)producing the vernacular (Kember 2012a). The role of the camera as an interface between consumers, employees and corporations has expanded and evolved through these technologies, being deployed by a range of industries as a means of connecting

with customers, generating demand, gathering data and encouraging self-surveillance (Elias and Gill 2018; Gomez Cruz 2016; Sluis 2020).

The fashion and lifestyle industries have utilized these technologies to continue blurring the boundaries between vernacular photography and advertising, with apps that offer 'virtual outfits' and 'virtual décor'; modes of augmented reality (AR) where designer products are blended seamlessly onto our bodies and into our lives. The volume of research being undertaken in implementing and improving the efficacy of 'virtual try-on' technologies suggests that these are viewed as having significant potential in an industry where photography has always played a vital role (Han et al. 2019; Hashmi et al. 2020; Neuberger et al. 2020). Through these forms of AR, we are shown a version of ourselves already in possession of the commodity, heightening our affinity and identification with the object. As one 'virtual try-on' provider writes, 'A customer feels a closer relationship with a product and a higher sense of ownership when they can try it on using AR technology' (Ritchie 2020). In these applications, the dynamics between desire, subjectivity, mediation and commodity culture continue to blur. Read through the lens of Debord's (1983) spectacle or Beller's (2006) cinematic mode of production, we might understand this as a strategy for bypassing the need to symbolically internalize a desire or affinity with the commodity, as such an affinity has already been externally realized through its mediation.

The health and fitness industries have also extended the role of the smartphone camera through the integration of AI and machine learning. For example, companies have begun using the camera as a tool to produce physiological and biomechanical data via motion tracking technologies, generating 'digital biomarkers' that can be used to 'continuously track and quantify an individual's state of health' (Kaia Health Software 2020). Using computer

vision, these companies monitor an individual's range of movement as various activities are performed, quantifying and evaluating their ability to execute particular tasks (Jennings and Jain 2019). The creation and tracking of biomedical data constitutes part of an expanding frontier in the assemblage of marketing and surveillance technologies in which our photographies have been co-opted, with ever more granular detail included in the production of our mediated subjectivities. These technologies highlight the central role of photographic mediation in imbricating our everyday lives with the logic of entrepreneurial subjectivity and the discourse of self-improvement through self-surveillance (Elias and Gill 2018). Yet as we train our eye on the body with a penetrating and self-disciplining gaze, the biopolitics of control also comes into play, as this data is aggregated into the risk profiles of a population, sold as data commodities that enable insurance companies and healthcare providers to identify (and avoid) 'high-risk and high-cost patients' (Kaia Health Software 2020). Photographic mediation becomes a vital bridge not only between consumers and corporations, but between the techniques of discipline and control that slide alongside each other, affording the orchestration and production of subjects, desires and behaviours that draws on both mechanisms.

Perhaps most pertinently at the time of writing, there have been a number of proposals in the context of the global coronavirus pandemic for the testing and monitoring of the disease that rely on the smartphone camera as a vital component of the diagnostic procedure (Maghdid et al. 2020; Nguyen 2020). The smartphone has the potential to act as a relatively low-cost and accessible tool in contrast to pre-existing medical testing kits, with its battery of sensors, processing power, memory storage and connectivity offering significant advantages in tackling global health crises (Maghdid et al. 2020). Combining, as with the above examples, the smartphone camera with the technologies of machine learning, these proposals describe the value of analyzing images to

determine levels of fatigue, nausea and the severity of headaches as part of a broader set of diagnostic criteria. The viability and efficacy of this approach is yet to be determined, although it is clear in a broader sense that the smartphone will play a vital role in the global response to current and future health crises. Whether there is the potential in these moments for the decoding of photography to be a process driven by the needs of public and global health rather than commercial pressures is an open question. Such a discussion is far outside the scope of this thesis, where I can only briefly remark that such an analysis must be contextualized within the long and often problematic history of medicine and photography, where each has played a significant role in producing the discourse of the other (Zittlau 2013). I would also add that the predominance of biotechnology, pharmaceutical and health insurance industries in the field of global health should make us extremely cautious of counterposing these endeavours to the commercial interests of vernacular photography's dominant corporations (Waitzkin 2018).

Each of these examples warrants significantly more analysis and contextualization than I can offer here, but they hopefully indicate potential avenues for future investigations. Understanding how and why photographic mediation is deployed in these examples will require us to engage with the specific material, temporal and libidinal relationships that are activated by these apparatuses, alongside the commercial and political imperatives of those companies responsible for their development. As I have argued throughout this thesis, our theories of photography must be formed in reciprocity with their material instantiations, concurring with Di Bello (2008, 151) that our understanding of photography is always 'provisional, historically specific, and requires attending to photographic practices and objects in their multi-sensorial materiality.' I would also extend this sense of contingency to those dimensions of photography that elude our senses; to the protocols, algorithms

and labours whose occlusion is far from incidental to the operations of vernacular photography. As this thesis has demonstrated, vernacular photography is encapsulated by a series of complex negotiations between the desires of individuals and the commercial needs of institutions. Accounting for the relationship between these drives requires that we extend our view beyond the perceptible phenomena that we encounter in everyday life and trace how these connect to circuits of labour, commodities and capital that are so frequently rendered opaque.

In emphasizing the agency of commercial institutions, a significant omission in this thesis has been a detailed discussion of the practices and experiences of vernacular photography that emerge in relation to the characteristics and circumstances of different communities. As discussed in the introduction, by definition the vernacular is not singular or universal, but speaks to a multiplicity of experiences that are formed in reciprocity with individual, local, cultural and geographical features (McLaughlin 1996). Examining the commercial imperatives that are invested in our photographic apparatus, I have focused on the institutional desires to collapse this multiplicity of unofficial and emergent practices into the axioms of capitalism. However, the impact of this process is inevitably unevenly distributed between racialized, gendered and classed bodies and communities. As an apparatus of visuality, vernacular photography inscribes differences in the terrain of the everyday, legitimizing authority and reproducing power imbalances through aestheticization, separation and normalization (Mirzoeff 2011). In seeking to produce particular kinds of subjects amenable to the demands of late capitalism, vernacular photography therefore legitimizes the experience of certain subjects, whilst actively side-lining and excluding others. The uneven distribution of effects that vernacular photography produces warrants considerable further investigation, as do the strategies of resistance and re-

appropriation that emerge in various local contexts as a result. Here, I can only signpost the interventions of Deborah Poole (1997) Ariella Azoulay (2008), Abigail Solomon-Godeau (2017), Krista Thompson (2015), Shawn Michelle Smith (2013) and Christopher Pinney (2020) as entry points into these conversations.

A second significant omission of this thesis has been an examination of how the strategies of commercial actors in the major western economies compare, contrast and connect to those in other parts of the globe. For example, how does Kodak's story compare with the history of photography in the early years of the Soviet Union, where ersatz Leica's (FED's or Fedka's) were produced with varying degrees of success in workers communes (Fricke 1979). To what extent do differences in the social and cultural context, the political imperatives of the organisation, and the modes of production, transform the practices and politics of vernacular photography? More contemporaneously, countries such as China and India have produced photo-sharing and image messaging platforms with user bases comparable in size to those of Instagram or Snapchat. China in particular is home to significant social media and image sharing platforms that exert considerable power and influence, with Sina Weibo, Renren and Huaban being three notable examples. These commercial actors share significant features with their American counterparts, with capitalist imperatives dovetailing with political power via a marketing and surveillance complex that extracts, analyzes and commodifies user data (Fuchs 2016). Despite broad similarities in the political economy of these platforms, a detailed analysis of how these socio-material apparatuses interact with broader cultural, political and aesthetic values is needed in order to establish how photographic mediation is mobilized as a productive force in these contexts. The work of de-westernizing our theoretical framework is vital not only in terms of the value in understanding other significant media ecologies, but also in forming a more

critical and nuanced perspective on the overlapping circuits of labour that comprise the global networked image economy (Fuchs 2016, Pinney 2020).

Bringing together approaches from western Marxism with contemporary media theory, the initial aim of this thesis was to examine the commercial imperatives that shape our everyday interactions with photography. Examining the assemblage of forces that have been marshalled by three commercial institutions, the case studies have demonstrated some of the strategies that have been used to generate value from photographic activity. As techniques of mass production, networked media and artificial intelligence have coalesced with the photographic, novel circuits of labour and value have been created that instrumentalize vernacular photography as a productive and constitutive part of material relations under capitalism. By combining a materialist analysis with a processual and generative understanding of photographic mediation, this research project has also revealed how photography's imbrication with capital goes beyond the process of commodification. With photographic mediation operating as an integral part of how we constitute ourselves, these apparatuses have been shown to operate in the terrain of biopolitics, retooling subjectivity at both the unconscious and conscious level, producing new desires, emotions and behaviors (Beller 2006). Whereas at the beginning of this project I was concerned with how commercial imperatives shaped vernacular photography, the question of how photography shapes subjectivity on behalf of capitalism, has therefore come increasingly to the forefront of my thinking. With photographic mediation imbricated ever deeper into the processes and performances of everyday life, connected to networks that both visibly and invisibly structure our relationship to the world, it is becoming ever more vital that we map the competing desires underpinning vernacular photography.

In carrying out this research, another significant theme that has emerged is how to understand the changing nature of vernacular photography. The examples I have discussed illustrate how photography is continually entering into new hybrid assemblages, with networked media, smart devices and artificial intelligence becoming particularly significant features of the photographic apparatus in recent years. The question has arisen whether these hybrid forms indicate a waning of photography's coherence as a medium with privileged access to reality, or if instead they signal its continued currency as a productive mode of communication and expression. By bringing together the concepts of photographic mediation and deterritorialization, I have developed an expanded ontology of photography that is not delimited by the creation of indexical or representational images, but following Kember and Zylinska (2012) and Gomez Cruz (2016), encompasses a wider range of socio-material practices involving the orchestration of light, bodies and surfaces into temporarily fixed arrangements. Reframed within this expanded ontology, I have argued that photography has always entailed making connections and affinities with other technologies and discourses, and as such, there is not an ontologically pure form of photography from which we can drift. Rather, vernacular photography always operates through its impurities, channelling photographic mediation into various assemblages that create different meanings and outcomes in the world.

A significant intervention of this thesis has therefore been to produce a different genealogical understanding of vernacular photography. By tracing the process of deterritorialization through Kodak, Snapchat and Ditto, networked media and artificial intelligence no longer appear as aberrations to the history of photography. Instead, they form part of a continuous drive to increase the productive potential of photographic mediation by entangling it closer with everyday life. Kodak's early history may appear to mark a point in

photography's genealogy when there were clearly defined parameters to its ontology and epistemology. However, as I illustrated in Chapter 1, this was already a moment of intense hybridization and deterritorialization. The inclusion of factory labour and postal networks in the development process imbricated vernacular photography with technologies of mass-production that posed significant challenges to an epistemology of photography grounded in the closed triadic relationship of author, viewer and indexical image (Peraica 2017). Furthermore, the replacement of the glass plate negative with the fluidity of celluloid passing behind the shutter signalled the singular image already giving way to a multiplicity of images taken in quick succession. The phenomenon of Kodak culture has therefore been reframed as enacting a significant decoding of existing photographic structures, combining photographic mediation into new socio-technical assemblages that enabled greater flows of desire to pass across the apparatus.

The example of Kodak illustrates how vernacular photography has been subject to processes of deterritorialization throughout its history, undergoing material and discursive transformations that enable new productive potentials of photographic mediation. Snapchat continues this trajectory, destabilizing the mnemonic function of the image in order to collapse the boundary between photography and everyday life, making photographic mediation contiguous with the performance and production of subjectivity. With Ditto, decomposing the image into discrete semantic variables has enabled photography to operate as a connective interface between commodities, corporations and consumers, with the latter recast as a loose collection of attributes, desires and relationships (or in Deleuzian terms, dividuals). However, these changes do not signal the dissolution of photography, but as the theory of deterritorialization suggests, its continuing dynamism and vitality as a productive territory of activity (Parr 2010). As commercial institutions continue to demonstrate, photography's

ability to shape the world is far from exhausted, with photographic mediation becoming ever more imbricated in the production of everyday life. Perhaps most significantly, this thesis has shown how the instrumentalization of photography has entailed also transforming the photographic subject, realigning subjectivity in ways amenable to the commercial imperatives of the institution and the demands of capitalism more broadly. If, as Kember and Zylinska (2012) argue, we are inseparable from the processes of mediation, paying attention to the ways our photographic apparatus is being shaped by commercial forces becomes all the more imperative. Rather than seeking to police the boundaries of photography, which is always-already ontologically hybrid, as researchers and theorists we might be better served by engaging with the divergent photographies that continue to play a significant role in our lives.

In tracing the myriad ways that photographic mediation has been deterritorialized, hybridized and instrumentalized, my aim in this thesis has not been to fatalistically condemn vernacular photography as being perpetually subordinate to the endeavours of capitalism. Photography's reconfiguration into new protean materialities may be an expression of commercial and institutional desires to extend the productive potential of vernacular photography; to find new ways of extracting value by reorganizing and remapping our desires, beliefs and behaviours through their mediation. However, reconceptualizing photography as a fundamentally productive and generative set of practices also raises the stakes of what a radical intervention might accomplish. If the vernacular is not only represented, but reproduced through photography, resisting or challenging the power relations that flow through our photographic apparatus has the potential to significantly intervene in the material production of everyday life. Creating representations of life that challenge hegemonic ideas about subjectivity and society are vital, but as we

have seen in Chapter 4 through the work of Spence, Devas and Stezaker, just as crucial are creating alternative modes of photographic mediation that challenge photography's epistemological foundations. By tracing the ways that vernacular photography has been decoded, stretched and reordered, even under the auspices of capital, I hope to have provided the speculative latitude to imagine alternative photographies that may enact this process.

To avoid lapsing into the dichotomy of technophilia and technophobia, I have frequently returned in my thinking to Deleuze's (1992, 4) phrase from the *Postscript*, 'There is no need to fear or hope, but only to look for new weapons.' He is referring in this sentence to a much broader movement from the socio-technical assemblages of the disciplines that characterized the nineteenth century (as described by Foucault) to those of the control society that characterize the late twentieth century. However, in thinking about the reconfigurations of vernacular photography that have occurred over the previous two centuries, this line can serve us equally well. Retreading our steps through the genealogy of vernacular photography reveals that there is no purified space in the past to return to, even if such a possibility were desirable. Our task instead must be to use this genealogy to better understand how we have arrived at our present position and to use this knowledge to formulate strategies of countervisuality appropriate to our time (Mirzoeff 2011). To this end, I have attempted in this thesis to map the commercial investments and imperatives of vernacular photography, analyzing not only the objects and images that pervade our environment, but the processes, procedures and performances that make photographic mediation such a productive force in the world. In this way, I hope the contribution of this thesis will be to at least point in the right direction of where these new weapons might be found.

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