Why Pictures? From Art History to Business History and Back Again.

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Abstract: Photographic history took root in the discipline of Art History with its focus on pictures and subsequent critical histories have largely retained this image-centred focus. Yet, there is no inherent reason why the study of photography needed to become a history of pictures especially, as in some respects, the images might not be the most important aspect of the practice. In recent years there have been a flurry of studies examining aspects of photographic industry and business arrangements. In this essay I present some debates from the field of academic business history, which raise issues of relevance for historians of photography. Reese V. Jenkins influential study of Kodak, *Image and Enterprise* (1975), provides the opportunity for investigating some of these issues. A short conclusion on the English daguerreotype trade provides an illustration or coda to these themes.

Keywords: business history; industry; Reese V. Jenkins; Alfred D. Chandler Jr.; Richard Beard.

It is intriguing to consider why the history of photography took root in the academic discipline of art history, with its focus on images?[1] Initially, most accounts of photography were written as 'invention stories' and 'recipes' with claims to priority taking central place; few of these works had much to say about photographs as pictures. In the first sixty years of the twentieth century histories were hybrid texts, mixing narratives of technical discovery with a focus on 'masterworks'.[2] Aaron Scharf's *Art and Photography* might be seen as a symptomatic tipping point where a focus on art came to the fore.[3] The museum and auction house undoubtedly played a central role in this development.[4] Yet, for all this, there is no

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[1] This paper was presented as a plenary offering at the P.H.R.C. conference 'The Business of Photography' at De Montfort University on 17 June 2019. My special thanks to the organisers for their invitation and hospitality, particularly when I was 'stranded'. As always, the P.H.R.C. audience offered intelligent and searching comments. I would like to express particular gratitude for two valued interlocuters: Jennifer Tucker and Michelle Henning. Marcel Van Der Linden provided expert historical advice. Patrizia di Bello and the two readers for *History of Photography* also who offered helpful suggestions. Addressing all of their suggestions would turn this intervention or provocation into a long research project, but I hope I have responded to their important criticisms.

[2] Lucia Moholy, *One Hundred Years of Photography 1839-1939*, London: Penguin, 1939; Beaumont Newhall, *Photography: a Short Critical History*, New York: Museum of Modern Art, 1938; Helmut Gernsheim, *The History of Photography from the Camera Obscura in the Eleventh Century up to 1914*, Oxford: Oxford University Press, 1955. Joseph Maria Eder's focus on chemistry is an obvious exception to this pattern. See Eder, *History of Photography* (1932), New York: Dover, 1978.

[3] Aaron Scharf, *Art and Photography*, Allen Lane, 1968. The fact that Scharf was an exile from McCarthyism invited to Britain by Anthony Blunt indicates that there is no neat political alignment involved in the shift.

[4] Christopher Phillips, 'The Judgement Seat of Photography', *October*, 22 (Autumn, 1982), 27-63. For a specific example: Stuart Bennett, 'Jabez Hogg Daguerreotype', *History of*

inherent reason why the study of photography needed to become a history of pictures especially, as in some respects, the images might not be the most important aspect of the practice. This issue seems particularly heightened once we substitute a focus on 'use' for the hermeneutic problem of interpretation. Photography could easily have become an object of attention for historians of the trades, for studies of the commercial dealings of the middle class, or accounts of consumption and 'lifestyle'.[5] If cultural historians have been myopic in this regard, historians have been equally neglectful. Even without the shift from social to cultural history, an analysis of the photography trade would add much to an understanding of the middle class. With the mass of trade journals, there can have been few sections of the lower middle class that wrote so much, articulating their hopes and fears.[6]

As early as 1861, Karl Marx argued that there were five important new branches of production and new 'fields of labour' that emerged with mechanisation. He listed photography alongside gas-works, telegraphy, steam navigation and railways. Marx wrote:

> [t]he chief industries of this kind are, at present, gas-works, telegraphs, photography, steam navigation and railways. According to the census of 1861 for England and Wales, we find in the gas industry (gas-works, production of mechanical apparatus, servants of the gas companies, &c.), 15,211 persons; in telegraphy, 2,399; in photography, 2,366; steam navigation, 3,570; and in railways, 70,599, of whom the unskilled 'navvies', more or less permanently employed, and the whole administrative staff, make up about 28,000. The total number of persons, therefore, employed in these five new industries amounts to 94,145.[7]

Including photography alongside some of the central forces of modern industry, as Marx did, suggests another possible history for photographs and I have often returned to this passage as a way of imagining other modes of thinking about photography.[8] Yet, while photo-historians

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Photography, 1:4, 1977, 318-318. Bennett was the auctioneer for the sale of the daguerreotype in question.

[5] For an example see: Michael Pritchard's 2010 De Montford PhD: *The development and growth of British photographic manufacturing and retailing, 1839-1914*, (unpublished).

[6] For an account along these lines see my: *The Making of English Photography, Allegories*, Pennsylvania: Penn State University Press, 2006.

[7] Karl Marx, *Capital: a Critique of Political Economy*, Vol. 1, London: Lawrence and Wishart, 1954, 419-20.

[8] See for example the opening section of *The Making of English Photography, Allegories*. For a moment, just imagine a history of the telegraph that concentrated on judging the quality of Morse-code messages or a journal of *Critical Boiler Studies* with associated conference and rival interpretive factions Could there ever be a canon of such things, replete with museums, connoisseurs and academic departments?

sometimes speak of 'the Spectacle', in an important sense, it is these academic specialists who have been themselves beguiled by what Guy Debord called '*capital* accumulated to the point where it becomes an image'.[9]

There is, of course, outstanding existing work on photography and industry. Allan Sekula's pioneering study 'Photography Between Labour and Capital', which he described as an account of the 'emerging picture- language of industrial capitalism', offers a fascinating account of photographic representation of work and industry and the relation to earlier iconographic traditions.[10] David E. Nye's book *Image Worlds: Corporate Identities at General Electric* is little known by photo-historians, but it provides a compelling account of the changing representations of workers and managers; images of commodities; advertising and the role of in-house publications.[11] Nye tellingly observes that General Electric's photographic archive is the size of the Farm Security Administration collection, yet dozens of books have been devoted to the latter.[12] Elspeth H. Brown's study of the role of photographs in the American industrial imagination should be mentioned and there are good studies of advertising, such as Patricia Johnston's *Real Fantasies*.[13] These excellent works are concerned with representations of industry, or the role of images in commercial enterprises, which is an important topic, but here I am interested in something else—in photography as a business.

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[9] Guy Debord, *The Society of the Spectacle*, New York: Zone, 1994, 24.
[10] Allan Sekula, 'Photography Between Labour and Capital', Benjamin H.D. Buchloh & R. Wilkie eds, *Mining Photographs and Other Pictures: A Selection from the Negative Archives of Shedden Studio, Glace Bay, Cape Breton, 1948-1968*, Nova Scotia: NSCAD, 1983, 193-268; see also his essay 'An Eternal Esthetics of Laborious Gestures', *Grey Room*, 55 (2014), 16-27.
[11] David E. Nye, *Image Worlds: Corporate Culture at General Electric*, Boston, Mass: MIT, 1985.
[12] Ibid. Similarly, the introduction to an innovative issue of *Radical History Review* recently dedicated to photography and work noted, the Baker Library of the Harvard Business School contains 32,000 photographs of 'factories, manufacturing techniques, business leaders, and people at work in industrial settings', while, this editorial continues, the United Fruit Company holds 'more than 10,400 photos of the company's operations in Latin America and the Caribbean from 1891 to 1962'. See Kevin Coleman, Daniel James & Jayeeta Sharma, 'Introduction: Photography & Work', *Radical History Review*, 132 (2018), 1-22: https://doi.org/10.1215/01636545-6942345 (accessed 17 February 2020).
[13] Elspeth H. Brown, *The Corporate Imagination: Photography and the Rationalization of American Commercial Culture 1884-1929*, Batltimore: Johns Hopkins University Press, 2005; Patricia Johnston, *Real Fantasies: Edward Steichen's Advertising Photography*, Berkeley: University of California Press, 1997.

Art historians have not completely ignored the business of making photographs. Pioneering figures rooted in materialist social history—Gisèlle Freund, André Rouillé, Molly Nesbit and Elizabeth Ann McCauley—all paid attention to photography and, or as, industry.[14] As other methods have displaced social history, this concern to mediate image *production*, has somewhat faded from view. The shift away from histories of production, circulation and consumption has been accelerated by the hegemony of a generalised Foucauldian historicism, which rose to prominence in the mid-1980s, largely displacing Marxist approaches. As Molly Nesbit suggests, the economy is always Foucault's 'blind spot'.[15] This Foucauldian occlusion has contributed to the creation of a field of debate that operates largely without the categories of political economy, or ideas from business and labour history. This essay suggests historians should put some of these categories back into play.

During the last twenty-five years, scholars working in a range of disciplines—Anthropology, Geography, Area Studies; Cultural Studies—have broadened the purview of photographic history, contributing new methods and research questions, but also bringing into greater focus a wide range of commercial, everyday or vernacular photographies beyond the art gallery. A whole host of conferences, books and papers now attest to this on-going transformation. In some ways, however, these approaches remain arguably insufficiently materialist and, despite their turn to 'materiality', image-centric. To take just one influential example, in papers on 'vernacular photography' and 'snapshots' Geoffrey Batchen perceptively highlights the hermeneutic conundrums that emerge for historians once we turn away from exceptional images and attend to the mass of photographs. How are we to engage with these photographs, Batchen asks, without out selecting for those that stand out? How might we to sustain attention to banality, repetition and visual cliché? Yet, as Don Slater

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[14] Gisèlle Freund, *Photography and Society*, London: Gordon Fraser, 1980 (a version of her 1936 Sorbonne PhD); André Rouillé; *L'Empire de la Photographie: Photographie et Pouvoir Bourgeois 1839-1870*; Paris: Le Sycomore, 1982; Molly Nesbit, *Atget's Seven Albums*, New Haven: Yale University Press, 1994; and Elizabeth Ann McCauley, *A.A.E. Disderi and the Carte de Visite Portrait Photograph*, New Haven: Yale University Press, 1984; and *Industrial Madness: Commercial photography in Paris 1848-1871*, Yale University Press, 1994. I would also point to Deepali Dewan and Deborah Hutton's excellent work on Raja Deen Dayal, which doesn't wear theory on its sleeve, but in pursuing one photographer through the archives provides a fascinating account of the diverse work of a commercial studio. See: Deepali Dewan & Deborah Hutton, *Raja Deen Dayal: Artist Photographer in Nineteenth Century India*, Ahmedabad: Mapin, 2013.

[15] Molly Nesbit, 'What was an Author?', *Yale French Studies*, 73 (1987), 240. This is not to say this transformation was simply intellectual. Political defeat has played a large, if unacknowledged, part in shaping the field.

noted some time ago, photographs of this type were, in many ways, a hook for the film-processing industry and the images cannot be understood in the absence of that business strategy.[16] Similarly, drawing on the publication *Kodakery*, Gil Pasternak has examined the way that Kodak promoted snap shot 'biographies' as a way of securing its market position and Lynn Berger notes that the language of image cliché coincides with the marketing of the Brownie camera.[17] Amateur snapshots of the sort that Batchen discusses are, in an important sense, an effect of an industrial strategy of 'throughput' and their image-form, while significant, is tied to this commercial pulse. While Batchen advocates a break with many of the protocols of privileged viewing, his argument operates as an extension of image studies, rather than a radical break. Elsewhere, Batchen has written intelligently on photographic industry, and his papers are highlighted here, simply because he acutely isolates some of the methodological issues that arise once historians abandon the reified and ratified image for mass practices.[18] Of course, it is perfectly legitimate to focus on one-aspect of photography for special attention and an author cannot be expected to do everything, so I make this point only to indicate another possible field of research.

If as photo-historians we were to widen our purview we might recognise that the history of photography could easily include the organisation of studios and firms; the luxury end of the trade and the mass market or specialist markets; supply houses, small firms, family firms and chain stores; the division of labour (including the gendered division of labour) and the labour process; research and development; retail and marketing; investment patterns and access to finance; and the production and supply of equipment and other materials and market strategy. Extending our field of view somewhat further, we could envisage studies of camera makers, paper suppliers, chemical manufacturers and processing labs as well as research and development organisations. Intellectual property, patents, copyright, trademarks and fraud

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[16] Geoffrey Batchen, 'Vernacular Photographies', *History of Photography*, 24:3 (2000), 262-271; Geoffrey Batchen, 'Snapshots: Art History and the Ethnographic Turn', *Photographies*, 1:2 (2008), 121-142; Don Slater, 'Marketing the Medium: An Anti-Marketing Report', *Camerawork*, 18 (1980), 6-7. See also: Elizabeth Edwards, 'Objects of Affect: Photography Beyond the Image', *Annual Review of Anthropology*, 41 (2012), 221-34.

[17] Gil Pasternak, 'Taking Snapshots, Living the Picture: The Kodak Company's Making of Photographic Biography', *Life Writing*, 12:4 (2015), 431-446; Lynn Berger, 'Snapshots, or: Visual Culture's Clichés', *Photographies*, 4:2, 2011, 175-190. Berger could have included 'stereotype', which has a similar etymology. See also: John Taylor, 'Kodak and the "English" Market between the Wars', *Journal of Design History*, 7:1 (1994), 29–42.

[18] Geoffrey Batchen, 'The Art of Business', in Steven Kasher, *America and the Tintype*, Göttingen: Steidl, 2008; and *Apparitions: Photography and Dissemination*, Sydney: Power Publications, 2019.

(piracy) are obvious topics for attention. How can we understand the production of postcards without an economic geography of markets? There is a lot of good work on the development of photo-reproductive techniques, but what about the history of photo-book and magazine production, as commodity-things that are produced, distributed and sold in the marketplace. It is perfectly feasible to imagine histories that concentrate on any of these aspects, with or without the pictures. Global transactions have always played a central role in photography; Peruvian Silver is an obvious example and these days attention would need to be paid to rare metals such as cadmium, cobalt, lithium, platinum and palladium, which are often mined in appalling conditions.[19] There are global commodity-chain analyses of products from fish to plastic trinkets, but not photographs.[20] In a related vein, business historians are currently paying a great deal of attention to the ecological impact of particular firms or sectors of the economy and we might envisage an ecological history of photography: there is a lot of work on the representation of ecological disaster, but little on the environmental impact of photographic production: of colonial extractivism; of polluting of the water table with nitrates, cyanide, heavy metals and aniline dies; and poisoning workers with deadly toxins.[21] This is to say nothing of the charmingly naïve nineteenth-century experiments with the Uranium process.[22] So while historians sometimes speak metaphorically of 'image pollution', it is possible to envisage a research programme of a more literal kind.

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[19] For example, see: Amnesty International, *This is What we Die For: Human Rights Abuses in the Democratic Republic of the Congo. The Global Trade in Cobalt*, 2016: https://www.amnesty.org/download/Documents/AFR6231832016ENGLISH.PDF (accessed 17 February 2020).

[20] Liam Campling, 'Trade Politics and the Global Production of Canned Tuna', *Marine Policy*, Vol.69 2016, pp.220-228; Elizabeth Havice & Liam Campling, 'Where Chain Governance and Environmental Governance Meet: Interfirm Strategies in the Canned Tuna Global Value Chain', *Economic Geography*, 93:3 (2017), 292-313; Alison Hulme, *On the Commodity Trail: The Journey of a Bargain Store Product from East to West*, Bloomsbury, 2015.

[21] For examples of work on photographers responding to climate emergency see: Jennifer Peeples, 'Toxic Sublime: Imaging Contaminated Landscapes', *Environmental Communication: A Journal of Nature and Culture*, 5:4 (2011), 373-392; Julia Peck, 'Vibrant Photographies: Photographs, Actants and Political, *Photographies*, 9: 1 (2016), 71-89; and the 'Poisoned Pictures' issue of *PhotoResearcher*, 32, (2019). For an innovative approach see: Louise Purbrick, 'Nitrate ruins: the photography of mining in the Atacama Desert, Chile', *Journal of Latin American Cultural Studies*, 26:2 (2017), 253-278.

[22] Unlike most chemical formulas of the time this was a relatively 'permanent process'; depending on atomic mass, it had a half-life ranging from 700 million years to 4.5 billion years. Pictures made with Uranium technology don't fade for a while.

Business histories

Shifts are evidently taking place in the study of photography and we see a growing attention to business, industry and labour. In some ways, this involves a return to the work of the antiquarian historians who initially filled the pages of the journal *History of Photography*.[23] Not tied down by assumptions about art, antiquarians were prepared to follow their sources and gather any information they came across, including important material on business procedures. This work can be invaluable as a guide to sources, just as it was infuriatingly myopic. The problem, of course, is that the only methodology in evidence in involves a collecting mania, gleaning material in an indiscriminate fashion, mixing in hodgepodge valuable evidence with anecdotes, biographical details and dubious assumptions. One problem with the work of these enthusiasts is that they take sources at face value; as an example, in the terms of business history, they do not consider the problem of 'false accounting'.

In contrast, recent work is more reflexive in approach and rigorous in its questioning of sources. The annual conference run by The Photographic History Research Centre at De Montfort University has provided an important platform for work of this type and there are regular presentations on particular photographic firms, manufacture of equipment and marketing. Two PHRC events deserve particular mention: 'Workers and Consumers: The Photographic Industry 1860-1950' (2013) and 'The Business of Photography' (2019). Another conference that stands out is 'The Business of War Photography: Producing and Consuming Images of Conflict' held at the Centre for Visual Arts and Culture at Durham University (2014), while the event held in Paris at the end of 2018—'Photography with, and without, capitalism'—may be one indication for a current return of the repressed.[24] Michelle Henning's account of the colour-dye industry and gelatine production in her recent book *Photography: The Unfettered Image* is a compelling example of this new work and the issues of *PhotoResearcher* on 'marketing' and *Radical History Review* on 'Photography and Work' bring together a range of examples of the work currently underway.[25] None of this need entail Eurocentric assumptions about business models or cultures. In fact, some of the best work on

[23] I have in mind work by Arthur T. Gill, R. Derek Wood, Bernard Heathcote, Pauline Heathcote and others.

[24] 'Photography With, and Without, Capitalism', Organised by Guillaume Blanc and Taous R. Dahmani, I.N.H.A., Paris, 18 & 19 December 2018.

[25] Michelle Henning, *Photography: The Unfettered Image*, London: Routledge, 2018; Kelley Wilder, Ulla Fischer-Westhauser, Uwe Schögl eds, 'Photography in the Marketplace', *PhotoResearcher*, 25 (2016); 'Photography and Work', *Radical History Review*, 132 (2018).

business to appear in *History of Photography* appears in studies focused on the majority world, particularly Asia.[26]

In this essay it is not my intention to survey the significant, if halting, emergence of research on photographic business, industry and labour, rather I make a stab at presenting some debates from the field of academic business history, which raise issues of relevance for historians of photography. A short conclusion from my current research on the English daguerreotype trade provides an illustration or coda to these themes. Historians of photography have often turned to other academic fields for approaches or models. Provocatively, I suggest that we currently have more to learn from business history than art history. Less rhetorically put, my claim is that thinking about pictures without considering business strategies and markets makes no sense; the forms photographs take are only intelligible when we comprehend segmented markets, technological choices and labour forms. To be clear, I am not advocating a turn to business history as a general panacea or a substitute for a properly-materialist approach to photography, my argument is simply that approaches and foci from the field may provide important pointers for other possible histories yet to be written.

Stephanie Decker, Matthais Kipling and R. Daniel Wadhwani recently suggested that business history is composed from three distinct trends: a) approaches from the social sciences; b) the history of capitalism, with its roots in labour and cultural history; and c) and historical studies in management and organisational research.[27] This is a helpful typology of the field. My interest is in their second strand—the histories of capitalism, which is not to say that other historians might not find the alternative filaments of interest. As Paterick Fridenson argues, business history has had a fluctuating relationship to the category of capitalism, but, he suggests, since 2008 the concept has re-emerged as a focus of attention. That date evidently points to the so-called 'financial crisis' that we are still living through, but 2008 is

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[26] To my mind the most sophisticated account is Maki Fukuoka, 'Selling Portrait Photographs: Early Photographic Business in Asakusa, Japan', *History of Photography*, 35: 4 (2011), 335-73. See also: Wong Hong Suen, 'Picturing Burma: Felice Beato's Photographs of Burma 1886–1905', *History of Photography*, 32:1 (2008), 1-26; and Karen Fraser, 'Studio Practices in Early Japanese Photography: The Tomishige Archive', *History of Photography*, 33:2 (2009), 132-44.

[27] Stephanie Decker, Matthais Kipling and R. Daniel Wadhwani, 'New Business Histories! Plurality in business history Research Methods', *Business History*, 57:1 (2015), 30-40. I would distinguish between the pluralism they advocate and heterogeneity of approach, since the latter does not necessarily involve the 'tool kit' attitude and allows for antagonism between rival methodologies.

notable for two other relevant events: it was also the year that Sven Beckert inaugurated the hugely popular programme for the study of capitalism at Harvard (since that time, such programmes have proliferated); and strikingly, it was also at this point that the U.S. Society for Business History, in existence for almost 100 years, contemplated changing its name to the Society for the History of Capitalism.[28]

If I believe there is much to be gained from business history, this is not because there is any sustained work on the photo-industries exists in the literature. If anything, business historians have been even more reticent than cultural historians in addressing the industry and commercial patterns that make photography possible. Looking through the business history literature, it is striking of the blind spot regarding the industries of photography that there are more studies of brewing or 'sex toys' than photography[29] and it is equally symptomatic that we know a great deal more about the business dealings of William Morris, both his initial commercial venture of Morris, Marshall, Faulkner and Co. established in 1861, and the later firm of Morris and Company founded in 1875, than we do about any photographic studio of the same period.[30]

A search through thirty years of the major journals in the field—*Business History*, *Business History Review* and *Enterprise & Society*—turns up only two articles dedicated to photography. Antje Hagen's 1998 essay in the journal *Business History* examines the distinct export strategies pursued by the rival firms of Zeiss and Glaswerk, Schott & Gen during the

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[28] Patrick Fridenson, 'Is There a Return to Capitalism in Business History', Jürgen Kocka & Marcel Van Der Linden eds, *Capitalism: The Reemergance of a Historical Concept*, London: Bloomsbury, 2016, 110-11.

[29] For Brewing see: Terry Gourvish and Richard G. Wilson eds, *The Dynamics of the International Brewing Industry Since 1800*, London: Routledge, 1998; Garry Stapleton & James H. Thomas, *Gales: A Study in Brewing, Business and Family History*, London: Routledge, 2019; and 'Beer, Brewing, and Business History', Special Issue of *Business History*, Vol.58, No.5, 2016. For sex toys: Hallie Lieberman, 'Selling Sex Toys: Marketing and the Meaning of Vibrators in Early Twentieth Century America, *Enterprise and Society*, 17:2 (2016), 393-433; and *Buzz: A Stimulating History of the Sex Toy*, Cambridge: Pegasus, 2017; Samuel Piha, Leila Hurmerinta, Birgitta Sandberg & Elina Järvinen, 'From filthy to healthy and beyond: finding the boundaries of taboo destruction in sex toy buying', *Journal of Marketing Management*, 34 (2018), 13-14.

[30] Charles Harvey & Jon Press, 'William Morris and the Marketing of Art', *Business History*, 28:4 (1986), 36-54; Charles Harvey & Jon Press, *William Morris: Design and Enterprise in Victorian Britain*, Manchester: Manchester University Press, 1991; Charles Harvey et al. 'William Morris, Cultural Leadership, and the Dynamics of Taste', *The Business History Review*, 85:2 (2011), 245–271.

period 1890 and 1933.[31] In 2015, Anne Verplanck, published 'The Business of Daguerreotypy: Strategies for a New Medium' in *Enterprise & Society*.[32] Verplanck's text provides an account of the business of T.P. and D.C. Collins, who ran a daguerreotype studio in Philadelphia between 1845 and 1855. We learn that the firm kept detailed accounts and served twenty-one thousand customers during the ten year period it operated. On the whole, though, her study assembles information, rather than offering a wider analysis. In some ways it is closer to antiquarianism than contemporary historical scholarship. For instance, Verplanck is concerned with why the Collins's firm went bankrupt, but an understanding of small-business patterns in the middle of the nineteenth century suggests the inverse problem: what needs explaining is not why they ceased trading, but why the firm lasted so long. The average life of photographic studios at this time was probably in the region of three years, which fits the wider patterns for small businesses. Throughout the middle of the nineteenth-century small businesses were notoriously under-capitalised and dependent on credit.[33] The problem for small outfits was access to circulating capital, firms held sufficient supplies only for a few weeks production and often had unpaid bills stretching for many months and, in some cases, years.[34] Stana Nenadic's work on small firms in Edinburgh indicates that, between 1861 and 1891, more than 50% went out of business within three years of

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[31] Antje Hagen, 'Export Versus Direct Investment in the German Optical Industry: Carl Zeiss, Jena and Glaswerk Schott & Gen. in the UK, from their Beginnings to 1933', *Business History*, 38:4 (1998), 1-20. Working at the University of Jena, Hagen had access to company records and this is a detailed comparison of the approaches of two companies.

[32] Anne Verplanck, 'The Business of Daguerreotypy: Strategies for a New Medium', *Enterprise & Society*, 16:4 (2015), 889-928. Though Verplanck has also published elsewhere, see: '"The Shadow of Your Self": The Reception and Use of Daguerreotypes', *West 86th: A Journal of Decorative Arts, Design History, and Material Culture*, 24:1 (2017), 47-73. Also of relevance are: Vrinda Kadiyali, 'Entry, Its Deterrence, and Its Accommodation: A Study of the U. S. Photographic Film Industry', *The RAND Journal of Economics*, 27: 3 (1996), 452–47; K.A. Munir, 'The Social Construction of Events: A Study of Institutional Change in the Photographic Field'. *Organization Studies*, 26:1 (2005), 93–112 and K. A. Munir & N. Phillips, 'The Birth of the "Kodak Moment": Institutional Entrepreneurship and the Adoption of New Technologies'. *Organization Studies*, 26:11 (2005), 1665–1687.

[33] Geoffrey Crossick & Heinz-Gerhard Haupt, *The Petite Bourgeoisie in Europe 1780-1914*, Routledge, 1995, pp.61-3; 65-70; Peter M. Solar and John S. Lyons, 'The English Cotton Spinning Industry, 17800-1840, as Revealed in the Columns of the *London Gazette'*, *Business History*, Vol.53, No.3, 2011, pp.302-23. For an analysis of the photography trade in the 1860s that confirms this perception, see Chapter two of my *The Making of English Photography, Allegories*.

[34] David A. Kent, 'Small Businessmen and Credit Transactions', *Business History*, 36:2 (1994), 47-64.

commencing. While, in the book and paper trade 62% went under in the same period.[35] Looking through entries for photographers in the London Post Office directories seems to confirm the pattern. Business historians are increasingly thinking about firms that fail and not just telling success stories.[36] Ignoring the failures risks making photographic history a story written from the perspective of the victors.

Historians of technology have done somewhat better than business historians. Nye's important work has already been mentioned and in 1988 David Edgerton published a thoughtful study of differences in the approach to research in organic chemistry in the photographic industry, comparing Ilford with Kodak and Agfa (which was part of the infamous chemical conglomerate I.G. Farben, makers of Zyclon B).[37] His essay is an account of research and development in the industry, looking at the slow development of colour chemistry in Britain, offering an explanation focussed on the recruitment of university trained chemists and development of research facilities. Compared to state sponsored research in Germany or the late, but committed. approach of Kodak, fundamental research across British firms was intermittent and small in scale. Edgerton draws on this comparison to make a general point about industrial research, suggesting what matters in commercial success is not national R&D, but research at the level of the firm, in the process he provides an account of a neglected dimension of photographic history.

Reese V. Jenkins and the Chandler Paradigm

The most significant study of photography as a business was published in 1975 by another historian of technology; this is Reese V. Jenkins's book *Images and Enterprise*.[38] Jenkins's pioneering study is widely used as a source on Kodak by historians, but my discussion of this book is not directed to proffering another history of that firm, rather I want

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[35] Stana Nenadic, 'The Small Firm in Victorian Britain', *Business History*, 35:4 (1993), 90.
[36] Patrick Fridenson, 'Business Failure and the Agenda of Business History', *Enterprise & Society*, 5 (2004), 562-82.
[37] D.E.H. Edgerton, 'Industrial Research in the British Photographic Industry, 1879-1939', Jonathon Liebenau ed., *The Challenge of New Technology: Innovation in British Business Since 1850*, Aldershor: Gower, 1988, 106-134.
[38] Reese V. Jenkins, *Images and Enterprise: Technology and the American Photographic Industry 1839 to 1935*, Baltimore: John Hopkins University Press, 1975. See also: 'Technology and the Market: George Eastman and the Origins of Amateur Photography', *Technology & Culture*, 16 (1975), 1-19. As an aside. it is an instructive exercise to consider why the writing of Roland Barthes should figure more prominently in the literature than Jenkins's study? Death, it would seem, is a more attractive subject, for many scholars, than business or labour.

to consider his work as an example of an approach in order to illuminate, for historians of photography, some central themes and conceptual assumptions that have shaped business history as a field or discipline. As will become evident, Jenkins shares a paradigm that business historians now overwhelmingly reject. *Images and Enterprise* figures in my argument as an exemplary version of an attitude that we need to move beyond if we are to produce a textured understanding of the photographic trades.

In *Images and Enterprise* Jenkins argues that the key shifts in successive photographic technologies occur at the level of the photographic carrier or base: he points to three revolutions in photo-manufacture, involving changes from metal plates to collodion and then gelatine film, particularly roll film. In this regard Jenkins's offers a technological determinist version of photographic manufacture, which provides a foundation for organisational change and business.[39] In the first two chapters, on daguerreotypes and collodion respectively, Jenkins looks at the large 'jobbers' or merchants who supplied the national market, principally the firms of Anthony and of Scovill & Chapman. Here he establishes the groundwork for his study, but his book is really an intensively researched study of the emergence of Eastman Kodak as an oligopoly (a market shared by a restricted number of traders).

Jenkins demonstrates that Eastman pursued a monopoly strategy, buying out rival manufacturers and building an extensive portfolio of patents that made it difficult for others to operate, particularly in the roll-film market, where he acquired three key firms: Boston Camera Manufacturing, American Camera Manufacturing and Blair Camera. Often, when he bought out rival companies, it was their patents that attracted him, as a way of restricting access to production for others.[40] Eastman also increasingly employed university-trained

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[39] A lot could be said about Bruno Latour's odd use of Jenkins's work, which he deploys against technological determinism and materialist historiography. In the light of the core thesis of *Images and Enterprise*, where changes in the market for photography unfold from innovations in the technical carrier, Latour's reading is starkly at variance with his source. See for example: Bruno Latour, 'Technology is Society Made Durable', John Law ed., *A Sociology of Monsters: Essays on Power, Technology and Domination*, London: Routledge, 1991, 103-132. Much of Latour's essay appeared in an earlier form as: 'Pour une Cartographe des Innovations: L'graph socio-technique', Dominique Vinck ed., *Gestation de la Researche, Nouveaux Problèmes, Nouveaux Outils*, Brussels: De Boecke, 1991, 419-80. An English translation by Gabrielle Hecht is available on Latour's website: http://www.bruno-latour.fr/sites/default/files/downloads/44bis-GRAPH-GB.pdf (accessed 17 February 2020).

[40] For more on Kodak and patent control: Michael L. Brookshire & Sidney L. Carroll, 'Patents and Vertical Integration as a Source of Monopoly Power: The Photographic Industry', *Antitrust Law & Economics Review*, 7:1 (1974), 49-60; H. W. Schütt, 'David v.

chemists and engineers in managerial positions, particularly out of M.I.T. (de Lancy, Lovejoy) or Rochester (Hammer, Riechenbach), and moved into fundamental research. Kodak pursued product innovation as a business strategy, creating new lines protected behind patent barriers, and employing an extensive marketing department to generate consumer interest in novel products.

Perhaps, the most important aspect of the empire at Kodak Park, Rochester involved industrial integration of materials and services. To explain Kodak's innovations, Jenkins draws on the concept of 'vertical integration' from business history, this is the process whereby an enterprise takes control of various stages of the production process in its field. In this approach, a range of firms are acquired, or otherwise subsumed, and these can operate relatively independently, or under full control of the central business. In one version—known as 'vertical integration backwards'—we see Kodak acquiring existing producers of chemicals, paper and optical goods, and then moving into the production of these items. This process ensured a constant supply of materials and the ability to control quality. Obtaining suitable paper stock was a significant trial for manufacturers in the industry, largely dependent on clean water, and Eastman put a great deal of effort into securing quality paper from the General Paper Company of Belgium and, just as importantly, limiting its supply to Kodak's competitors.[41] Exclusion of potential competitors can be an important component of business strategy. Eastman then acquired a number of paper producers creating a holding company, which he named General Aristo.[42] The second approach, 'vertical integration forwards' involved purchasing existing retail outlets, or establishing new ones, to create a network of stores for the sale of Kodak's products.[43] Often, these retailers, while formally independent, were tied into exclusive deals for Kodak equipment, making it difficult for other manufacturers to access markets for their wares. These strategies of integration combined

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Goliath: the Patent Infringement Case of Goodwin v. Eastman', *History of Photography*, 7:1, (1983), 1-5. Some entrepreneurs explicitly rejected patents as part of building a business strategy. A fascinating account of Baaekeland's Velox paper along these lines is presented in: Joris Mercelis: ' The Photographic Paper that Made Leo Baekeland's Reputation: Entrepreneurial Incentives for Not Patenting', Stathis Aropostathis and Graham Duffield eds, *Knowledge Management and Intellectual Property: Concepts, Actors and Practices from the Past to the Present*, Elgar on-line, 2013, 62–84: https://www.elgaronline.com/view/edcoll/9780857934383/9780857934383.xml (accessed 17 February 2020).

[41] Jenkins, *Images and Enterprise*, 49; 198. Marxist geographers would describe this as monopoly rent, spatial conditions that allowed for accumulation above the rate of value.

[42] Ibid., 191-208.

[43] Ibid., 236-42.

with patent control and extensive working capital gave Eastman control of the roll-film sector, prior to the development of 35mm cameras. Even when the Rev. Hannibal Goodwin's 1895 patent for gelatine film was finally upheld by Federal Courts between 1914 and 1917, Kodak's extensive working capital enabled it to navigate the challenge. The biggest test to Kodak's hegemony came from anti-trust legislation that sought to break up the consolidated industry.[44]

There is a great deal to be learned about the business of photography and about monopoly capitalism from *Images and Enterprise*, but only a couple of points can be drawn out here. Jenkins took a degree in science at Rochester, before moving into history of technology with post-graduate work at the University of Wisconsin, which was a pioneering centre for history of science.[45] During a period as Harvard-Newcomen Fellow at Harvard in 1969-1970, he encountered the work of Alfred D. Chandler Jr. and other business historians, whose work he saw as providing an institutional and economic alternative to the then dominant approach to the history of science as intellectual history—that is to say, science as a series of *Eureka* moments. *Images and Enterprise* offered a focus on the *business* of science and technological development. It is a simplification to say that Jenkins's work is predicated on the approach known as the 'Chandler paradigm', but focusing on its Chandlerian moments helps draw an important dimension of business history into view for photo-historians.

Alfred D. Chandler Jr. was Professor in the Harvard Business School between 1970 and 1989 and has cast a long shadow over business history, to the extent that some historians refer to the earlier period of their field as B.C. (before Chandler).[46] Almost every essay from the business studies literature that I read in preparing this text, discuses some dimension of Chandler's work. Working over a long period, Chandler published six books, edited or co-edited more than thirty volumes, and wrote numerous papers. During this career his views undoubtedly changed, so what I present here is a synthesis, mainly drawn from two of his key works: *Strategy and Structure: Chapters in the History of the Industrial Enterprise* (1962) and *The Visible Hand: The Managerial Revolution in American Business* (1977).[47] From its

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[44] Ibid., 319-24. It is notable how much sympathy Jenkins shows for Kodak in the period of the anti-trust movement.

[45] Victor L. Hilts, 'History of Science at the University of Wisconsin', *Isis*, 75:1, 1984, 63-94. My understanding of Jenkins's work has benefited enormously from an on-going conversation with Jennifer Tucker.

[46] Jenkins was Harvard-Newcomen Business History Fellow in the Harvard Business School.

[47] Alfred D. Chandler Jr., *Strategy and Structure: Chapters in the History of the Industrial Enterprise*, Boston, Mass: MIT, 1962; and *The Visible Hand: The Managerial Revolution in American*, Cambridge, Mass: Harvard University Press, 1977. For recent appraisals of

inception, business history was dominated by studies of particular firms, Chandler widened the scope to account for broader trends and, what we would now call 'cultures' of business. For Chandler and his followers, business activity is determined by management structure or what he calls the 'market-cum-technological environment'; Jenkins refers to this as the 'business-technological mind-set'. Chandler's focus is on efficiency and management co-ordination of large, hierarchically organised firms: U.S. Steel, General Motors, DuPont and Sears. In 1980 he claimed: 'The large business firm and its managerial hierarchy are essential for organizing modern industrial activity.'[48] In *The Visible Hand* he argued, that the new large-scale technological industries of American capitalism required a new species of professional manager.[49] It was the direct intervention of this managerial strata, rather than the 'invisible hand' of the market, he believed, that made a raging success of American capitalism. Unlike traditional owners of industrial concerns, the new career managers had no stake in the firms they ran and no commitment to the community in which they were embedded, as such they were free to make innovative and radical decisions. Chandler suggests that British industrial dominance in the nineteenth-century was eclipsed, because the British failed to break with the 'personal capitalism' of the family firm; British industry internationalised later than its American and German rivals. His argument is fundamentally a narrative of U.S. triumph, with American models of manufacture viewed as the ideal form, from which other kinds of economic activity and business organisation depart (and inevitably fail).[50] In fact, some have argued that business history as a field was institutionalised at Harvard as a response to the prevalent critique of the U.S. Robber Barons, normalising and naturalising those figures as 'innovators'. In the process, a generation of historians spearheaded a counter offensive against the critics of U.S. capitalism, arguing there was no

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Chandler's contribution see the essays in the special issue of *Business History Review* (82:2) dedicated to his thought in 2008.

[48] Alfred D. Chandler Jr. and Herman Daems, eds., *Managerial Hierarchies: Comparative Perspectives on the Rise of the Modern Industrial Enterprise*, Boston, Mass: MIT, 1980, 1.

[49] Chandler, *The Visible Hand*.

[50] Chandler's disciple William Lazonick took this model back to Britain to explain the growth and decline of the textile industry. William Lazonick, 'Industrial Organization and Technological change: The Decline of the British Textile Industry', *Business History Review*, 57:2 (1983), 195-236; Bernard Elbaum and Lazonick eds, *The Decline of the British Economy*, New York: Oxford University Press, 1986; see also: Lazonick and David J. Teece eds, *Management Innovation: Essays in the Spirit of Alfred D. Chandler*, Jr. Oxford: Oxford University Press, 2012. For a critique of declinist assumptions in science and technology see: David Edgerton, *Science, Technology and the British Industrial 'Decline' 1870-1970*, Cambridge: Cambridge University Press, 1996.

alternative to the free market; that any state intervention was counter-productive; and that inequality encouraged competition leading to generalised prosperity.[51] From the era of the Fordist 'rust belt', and associated rise of Donald Trump, the Chandlerian paradigm now seems hubristic. This is not even to mention Kodak's spectacularly inept attempt to maintain film sales in the face of digital competition, which lead to it filing for bankruptcy in 2012.[52] In Jenkins terms Kodak did not realise early enough the importance of the digital sensor as a new 'support'.[53]

Jenkins shares many of Chandler's assumptions. His focus also falls on a large-scale American corporation and throughout his book emphasis is placed on 'innovators and inventor-discoverers'.[54] Managers and engineers are the heroes of his study. As a reviewer put it in this journal:

> 'this book is not only about companies, processes, and mechanisms, but also about the men who formed the companies, invented the processes, and brought together the diverse talents of others in the field. Not only are we told of the Anthonys, the Scovills, of Blair, and Eastman, whose names were borne by the companies which they organised, but also about Neff, Smith, Griswold, Adams, Goodwin, Reichenbach, Turner and Mees, men perhaps less known to most readers but nevertheless important contributors to the technology and economics of photography.'[55]

According to Jenkins, the important 'barriers to expansion' in photography was not a lack of market, but two technical factors: the perishability of photosensitive materials; and the complexity of the process, which deterred 'the average person'. He suggests that 'Once these restraints had been removed by innovators, the forces of the national market could come into play.'[56] The market appears in this work as a natural state, impeded only by 'barriers to entry' (patents, trade secrets, trademarks and concentration of enterprise on a large scale). In this view, the capitalist present is always there, pupating and waiting to

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[51] Philip Scranton & Patrick Fridenson, *Reimagining Business History*, Baltimore: Johns Hopkins, 2013, 5.
[52] Michael J. De La Merced, 'Eastman Kodak Files for Bankruptcy', *New York Times*, (19 January 2012): https://dealbook.nytimes.com/2012/01/19/eastman-kodak-files-for-bankruptcy/ (accessed 17 February 2020).
[53] It is possible that financialisation played an important role, with the bulk of profits (and dividends) increasingly drawn from speculation, rather than industrial production. For this switch in late capitalism from industrial profit to rent seeking: David Harvey, *A Brief History of Neoliberalism*, Oxford: Oxford University Press, 2005; Costas Lapavitsas, *Financialisation in Crisis*, Leiden: Brill, 2012; and his *Profiting without Producing: How Finance Exploits Us All*, London: Verso, 2013.
[54] Jenkins, *Images and Enterprise*, 6.
[55] Eaton S. Lothrop Jr., The Industrial Base, *History of Photography*, 1:3 (1977), 272.
[56] Jenkins, *Images and Enterprise*, 67.

spread its resplendent wings. Yet Jenkins is remarkably coy about key features of this industry: he offers no real discussion of salaries, profit rates, or bankruptcies and little on the organisation of work. This approach to business adopts a view from above. When labour appears in such accounts it is usually as a problem requiring control. In Jenkins's analysis of Kodak, workers appear in the images, but labour is entirely absent from his analysis.[57] It also assumes that supply determines consumption or demand, an idea particularly challenged by Feminist scholars, who place a much higher weight on choices made by female consumers.[58] In the imagination of the fetishist, it is as if Kodak Park was run by a sorcerer's apprentice. In approaching the field of business history, it is well-worth bearing in mind Gerald Hanlon's warning from *The Dark Side of Management* where, drawing on Italian Workerism, he argues that management theory is a form of social violence and that most innovation actually comes from below.[59]

The Chandler/Jenkins approach is a technocratic pro-business attitude, where the (male) 'entrepreneur' often figures as hero; a lone genius ahead of his time who is determined to break with established traditions and impose his innovative vision. The structural parallels with the conception of the artist in modernist history are striking. In my view, it would be a disaster if photo-historians simply switched from a vision of the heroic male artist to a celebration of the valiant (male) photo-manufacturer or chemical engineer as entrepreneur. Artists, at least, embody an ethos of romantic anti-capitalism.[60]

In recent years, business historians have sought to move beyond the Chandlerian paradigm, and while no alternative consensus has emerged, other avenues are being actively pursued. Some of these perspectives seem particularly useful for thinking about photography. For instance, some historians have insisted, in opposition to free-market absolutism, that the

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[57] To my knowledge, no one has discussed the employment of child labour in the photo industries, but it would be odd if children were not exploited in this way. This is another indication that the history of photography is plotted, consciously or otherwise, as the rise and triumph of a cultural practice.

[58] Regina Blaszczyk, *Imagining Consumers: Design and Innovation from Wedgewood to Corning*, Baltimore: Johns Hopkins Press, 2000.

[59] Gerald Hanlon, *The Dark Side of Management: A Secret History of Management Theory*, London: Routledge, 2015. For a different view see: Howell John Harris, *The Right to Manage: Industrial Relations Policies of American Business in the in 1940s*, Madison: University of Wisconsin Press, 1982. Anyone who works in a British University should get Hanlon's point.

[60] Michael Lowy & Robert Sayer, *Romanticism Against the Tide of Modernity*, Durham, NC: Duke University Press, 2001; Andrew Hemingway, 'Paul Strand and Twentieth-Century Americanism: Varieties of romantic Anti-Capitalism', *Oxford Art Journal*, 38:1 (2015), 37-53.

state is a key player in business, both as regulator and as a market for labour and services and this evidently applies to photographs too. Others have suggested that NGOs, co-operatives and the not-for profit sector are also businesses and, given the debate on charity images, this is of some significance. Something similar might be said about the military as a client for photographic services. Rather than concentrating on Chandler's large-scale firms, management innovation, technical change and cost efficiency, many historians now tend to emphasise the 'polymorphic nature of industrial organization'[61] and some focus on small and medium sized production units, while others speak of 'varieties of capitalism', drawing attention to the distinct institutional arrangements, which characterise contemporary capitalism, particularly the difference between market liberalism in Britain and the U.S. and the co-ordinated markets of Germany and Scandinavia (Ordoliberalism).[62] In the nineteenth century, capitalism developed in very different ways in Britain, France and Japan.[63] There is no reason why the insight into varieties of capitalism should not be pursued historically. Another approach is the so-called 'alternatives to mass production' approach, pioneered by

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[61] Maxine Berg, *The Age of Manufactures 1700-1820*, Fontana, 1985, p.85. For examples of the traditional account see works as different as: W.W. Rostow, *The Stages of Economic Growth*, Cambridge : Cambridge University Press, 1962; H.J. Habakkuk, *American and British Technology in the Nineteenth Century: the Search for Labour Saving Inventions*, Cambridge: Cambridge University Press, 1962; E.J. Hobsbawn, *Industry and Empire*, London: Penguin, 1968; and David S. Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*. Cambridge: Cambridge University Press, 1969. Marx's *Capital* has often been read in this fashion, but this involves ignoring his account of the labour process and particularly the observation about the 'intensification of labour'. For an alternative reading, which I favour, see: Jairus Banaji, *Theory as History: Essays on Modes of Production and Exploitatio*n, Leiden: Brill, 2010.

[62] Peter A. Hall and David Soskice eds, *Varieties of Capitalism: Institutional Foundations of Market Advantage*, Oxford: Oxford University Press, 2001; Bob Hancke, Martin Rohdes and Mark Thatcher eds, *Beyond Varieties of Capitalism: Conflicts, Contradictions and Complementarities in the European Economy*, Oxford: Oxford University Press, 2008; Bob Hancke ed., *Debating Varieties of Capitalism: A Reader*, Oxford: Oxford University Press, 2009; Susanna Fellman, Martin Iverson, Hans Sjörgren and Lars Thue eds, *Creating Nordic Capitalism: The Business History of a Competitive Periphery*, London: Palgrave, 2008. For a range of takes see the Special issue of *Business History Review*, 84:4 (2010).

[63] Yet, studies of photography in Japan precede without even acknowledging the debate between the rival historical factions of the Kozaha and the Rono in the 1930s, who offered very different analyses of the character of Japanese society. It clearly matters for analysis whether Japan had made the transition to capitalism or if it remained a tributary mode of production. See: Yasukichi Yasuba, 'Anatomy of the Debate on Japanese Capitalism', *The Journal of Japanese Studies*, 2:1 (1975), 63-82; and Gavin Walker, *The Sublime Perversion of Capital: Marxist Theory and the Politics of History in Japan*, Durham, NC: Duke University Press, 2018.

Charles Sabel and Jonathon Zeitlin, which highlights dynamic aspects of flexible specialisation pursued by small producers as a viable strategy in the face of large-scale production, particularly in areas of production susceptible to changing fashion.[64] Increasingly, there is a renewed interest in 'Family Capitalism', with a special issue of *Business History* on the theme published in 1993.[65] In the light of the Chandler paradigm, it is instructive to realise that, in the period between 1995-2000, 75% of registered British businesses were family firms, which may appear to confirm Chandler's declinist argument, but there is a higher percentage still in Italy, Spain, Switzerland and Sweden; in Brazil the figure climbs to 90% and in Chandler's own U.S. it rises to 95%.[66] Some historians are moving beyond the individual firm to look at networks or clusters of businesses. My point is that photo-historians have thought very little about the kind of business organisation pursued by the photographers they study or about their own methodological frameworks concerning this activity. In the process, choices made and strategies pursued, become invisible or treated through the generic model of large-scale manufacture. For historians of photography, the small family firm is much more likely to be the unit of analysis than large corporations such as Kodak. Strictly speaking, most photo-businesses are not even small outfits, but micro-businesses (98% of all current American firms are micro-businesses employing less than nine people).[67] It is the structural relationship between enterprises of different scales that shapes the photographic field. A sense of these debates would influence the questions we ask about photographers and photographies.

A question of scale

In so far as historians of photography have thought about business or capitalism, they have tended to work with very broad-brush assumptions about the 'commodification'. This approach infused with Critical Theory treats capitalism as a process of industrial concentration: of Fordist mass production and Taylorism. This is one reason why Weimar

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[64] Charles Sabel and Jonathan Zeitlin, 'Historical Alternatives to Mass Production: Politics, Markets and Technology in Nineteenth-Century Industrialization', *Past & Present*, 108 (1985), 133-176; Charles Sabel & Jonathan Zeitlin eds, *World of Possibilities: Flexibility and Mass Production in Western Industrialization*, Cambridge: Cambridge University Press, 1997.

[65] For a summary see Andrea Colli & Mary Rose, 'Family Business', Geoffrey Jones & Jonathon Zeitlin eds, *The Oxford Handbook of Business History*, Oxford: Oxford University Press, 2007, 194-218.

[66] Ibid., 204.

[67] Scranton & Fridenson, *Reimagining Business History*, 77.

Berlin, and its estranged-twin Soviet Moscow, have figured so prominently in photo-history. As much as I admire Allan Sekula's 'Photography Between Labour and Capital', his reliance on Alfred Sohn-Rethel's value-form analysis, pulls him in the same direction.[68] Nye's account of photography at General Electric makes related assumptions.[69] When historians have ventured into the nineteenth-century they have either told invention stories or sought out the rare images of large-scale industry. Work of this type relies on an account of capitalism, which is now unsustainable. This standard story takes the industrial economy of nineteenth-century Britain as a model and focuses on rapid economic growth, the mass production of cheap commodities, capital-intensive technology and motive power. Historians now reject, or significantly qualify, this view. As Maxine Berg notes, most histories of industry are 'fundamentally teleologies', which presume the triumph of large-scale production. This is exacerbated, because it is the big firms that have left records.[70] There are real problems, political as well as intellectual, arising from viewing large-scale industry as the pinnacle of capitalism. Developmentalism, neo-Liberal ideas of convergence and many post-colonial conceptions are all skewed by such a view.[71]

To take as an example the British model at the heart of this debate, while substantial, economic growth rates during the 'industrious revolution' were slower than had previously been assumed.[72] Large numbers of workers continued to be employed in domestic

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[68] Allan Sekula, 'Photography Between Labour and Capital', Benjamin H.D. Buchloh & R. Wilkie eds, *Mining Photographs and Other Pictures: A Selection from the Negative Archives of Shedden Studio, Glace Bay, Cape Breton, 1948-1968*, Nova Scotia: NSCAD, 1983, 193-268.

[69] Nye, *Image Worlds*.

[70] Maxine Berg, 'Small Producer Capitalism in eighteenth-Century England', *Business History*, 35:1 (1993), 18.

[71] Gail Day and Steve Edwards, 'Differential Time and Aesthetic Form: Uneven and Combined Capitalism in the Work of Allan Sekula', James Christie and Nesrin Degirmencioglu eds, *Cultures of Uneven and Combined Development*, Leiden: Brill, 2019, 253-288.

[72] N.F.R. Crafts, *British Economic Growth during the Industrial Revolution*, Oxford: Oxford University Press, 1985; C.K. Harley, 'British Industrialisation Before 1841: Evidence of Slower Growth during the Industrial Revolution', *Journal of Economic History*, 42 (1982), 267-89; N.F.R. Crafts, S.J. Leybourne, and T.C. Mills, 'Trends and Cycles in British Industrial Production', *Journal of the Royal Statistical Society*, Series A, 152 (1989), 43-60. Pat Hudson has argued that an over emphasis on growth skews the changes actually taking place and Britain in 1840 was a very different economy to that of 1760. Sustained growth was more significant than an intensive spurt. Pat Hudson, *The Industrial Revolution*, London: Edward Arnold, 1992. As M.J. Daunton suggests, the case for slow growth is unproven and many of the analysis concentrate on a few select industries. Daunton, *Progress and Poverty: An Economic and Social History of Britain 1700-1850*, Oxford: Oxford University Press,

industries and small to medium workshops, based on labour-intensive production were prevalent; while the use of hand tools, was more typical of the economy than the large-scale factories employing steam-driven machines. Even in the heartland of Lancashire textile districts, factory work was a minority occupation and handicraft persisted alongside manufacture.[73] In certain industries—cotton, wool, paper, chemicals, brewing and sugar—capital intensive innovation was significant, but these industries should not be taken to characterise the economy as a whole. In fact, the factory-form itself can be deceptive, often 'factories' were a conglomeration of workshops operating under one roof, perhaps renting access to a power supply.[74] For Berg, British industrial change hinged on a broad-base of the small and middle-sized concerns and, as Pat Hudson, notes technological development was dynamic within this sector.[75] The so-called 'traditional sectors' of the economy were transformed by access to credit, and the re-organisation and intensification of labour.[76] The readily available cheap labour of paupers, women and children offered an alternative to fixed capital investment.[77] In the building industry, one of the largest sectors of the economy, it was

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1995, 127-9. Daunton argues that it was the high productivity of agriculture that made enabled British transformation, making available large pools of labour.

[73] V.A.C. Gatrell, 'Labour Power and the Size of Firms in Lancashire Cotton in the Second Quarter of the Nineteenth Century', *Economic History Review*, Second Series, 30:1 (1977), 95-139. Raphael Samuel emphasises how prevalent small-scale and hand-production was throughout the century in his acclaimed essay 'Workshop of the World: Steam Power and Hand-Technology in Mid-Victorian Britain', *History Workshop*, 3:1 (1977), 6-72. See also: Maxine Berg, *The Age of Manufactures 1700-1820*, London: Fontana, 1985.

[74] This is not to say that large-scale industry was unimportant. Clive Behagg's excellent study of the Birmingham trades shows that the large-scale concerns often hegemonised the smaller units by control of credit and materials. Large-scale industry frequently led to a proliferation of small workshops operating in their nexus and not their inexorable eradication. Clive Behagg, *Politics and Production in the Early Nineteenth Century*, London: Routledge, 1990; 'Masters and Manufacturers: social values and the smaller unit of production in Birmingham, 1800-1850', Geoffrey Crossick & Heinz-Gerhard Haupt, eds, *Shopkeepers and Master Artisans in Nineteenth-Century Europe*, London: Methuen, 1984, 137-154.

[75] Maxine Berg, Small Producer Capitalism in eighteenth-Century England, *Business History*, 35:1 (1993), 23: Pat Hudson, *The Industrial Revolution*, 1992, 29.

[76] For exceptionally good summaries of these debates see: Berg, *The Age of Manufactures 1700-1820*; Hudson, *The Industrial Revolution*. M.J. Daunton gives a balanced account in *Progress and Poverty*.

[77] Maxine Berg, 'Women's Work, Mechanisation and the Early Phases of Industrialisation in England', Patrick Joyce ed. *The Historical Meaning of Work*, Cambridge: Cambridge University Press, 1989, 64-98; Ivy Pinchbeck, *Women Workers and the Industrial revolution 1750-1850*, New York: F.S. Crofts & Company, 1930; Barbara Taylor, '"The Men are as Bad as Their Masters…"', Socialism, Feminism, and Sexual Antagonism in the London Tailoring Trade in the Early 1830s, *Feminist Studies*, 5:1 (1979), 7-40. Women were often valued for their dexterity – 'nimble fingers' – but this ability was not deemed to constitute skilled work.

sub-contracting, rather than mechanisation, that transformed the trades.[78] Small technologies such as the sewing machine, or indeed the camera, were transformative of production relations without requiring huge investments in motive power or large concentrations of labour.[79] Particularly in trades serving local markets—tailors, shoemakers, bakers, carpenters and so forth—expanding markets through mass production was not advantageous; expansion was of little use to these producers, they needed to make the same number of commodities, but faster and cheaper. Portrait studios are another good example of this trend, because it makes no sense to stock-pile middle-class faces. Photographic firms were small and operated in localised and specialised markets, where personal contacts were essential, particularly for obtaining finance. In an important sense, this pattern has remained relatively constant. Large-capital intensive firms still produce the bulk of photographic equipment, but photographers continue to operate in micro-units of production and specialised markets.

In the history of photography only Elspeth Brown has criticised the Chandler model, recognising that there was no smooth path from family firm to large scale industry and, in the period from 1870 to 1930 there were four broad systems of production in play: custom, batch, bulk and mass production.[80] In some ways, it helps not to think of photography as explained by capitalist business practices, but to turn the problem around and see how photography illuminates that economy. Recall that for Marx we are looking at one of the five great new industries of the nineteenth century.

Two points are worth observing here, specific historical work is required to understand the economic contexts in which particular photographers operated and their business strategies. There is no one-size fits all understanding of capitalist production or the place of photographic concerns within it; we have to attend to the polymorphic character of capitalist production. As an illustration, we can turn to Richard Beard's daguerreotype business. Small concerns like Richard Beard's daguerreotype enterprise, which consisted of three London studios employing a handful of operators and licensees operating throughout England and Wales, were every bit as typical of capitalist productive enterprises as textile factories

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See: D. Elson and Ruth Pearson, '"Nimble Fingers Make Cheap Workers": An Analysis of Women's Employment in Third World Export Manufacturing', *Feminist Review*, 7 (1981), 87-107.

[78] Richard Price, *Masters, Unions & Men: Work Control in Building and the Rise of Labour 1830-1914*, Cambridge: Cambridge University Press, 1980. In building, like mining, hand work persisted late into the century.

[79] For the sewing machine see: Marx, *Capital* Vol. 1, 475-6.

[80] Brown, *The Corporate Eye*, 2. Though, her own study attends to bulk and mass production and the observation appears as an initial qualification to her own focus.

employing steam-driven technology and large numbers of deskilled 'hands'. Photographers' studios employed a small machine, without using motive power, and relied on skilled workers for chemical manipulation. In the nineteenth century, only one British studio—that of Oliver Sarony—employed steam power. Rather, than the pig-iron which features in standard accounts of the Industrial Revolution, it was silver-plating, brass founding and pressed copper that were involved in the daguerreotype-portrait industry, not to mention the acquisition of colonial silver and mercury. Electroplating and jappaning were carried out in the small-Birmingham workshops. Cases were made by hand with hide and glue production, barely changed over a prolonged period, involving the manipulation of noxious organic materials; glass sheets were still blown by mouth, then split and flattened, before being cut to size. These varied processes were combined with mass marketing of a fashionable consumer item: the daguerreotype.

When viewed from the traditional historical perspectives on industry, Beard's activity appears as a peculiarly hybrid mix of flexible specialisation (with multiple lines, outsourcing and a highly skilled workforce) and elements of the so-called 'American system of production', particularly the use of interchangeable parts and extensive advertising. Beard's particular configuration was innovative and, for a time, dynamic, but not atypical; many capitalist enterprises, then and now, employ such mixed forms of production. Beard's London studios demonstrate how diverse and complex industrial production could be. Secondly, historians have asked whether the British economy was dominated by finance or manufacture, the City of London or the industrial Midlands and the North. As with Chandler, this debate is built on declinist assumptions, but here the middle-class are thought to have abandoned the leading role of British industry, by sucking up to the aristocracy and abandoning the dark Satanic mills for the country estate and 'huntin and fishin'. Yet Beard was both a manufacturer and a *rentier* with establishments in London and a network of studios throughout his legal territory. This diverse 'portfolio' of investments was probably typical among the middle class. What mattered was not a vocation or a commitment to a particular form of economic activity, but the rate of return on capital. Like other manufacturers, daguerreotypists were looking for a rate of profit that would enable them to quit the trade for another kind of life. Historians have found it perplexing that some of the most celebrated photographers, such as Roger Fenton or Camille Silvy, abandoned the field. Both men gave up the risky business of photography for more secure ways of obtaining an income (law and diplomatic service). It is an assumption that results from thinking about art, rather than business. In fact, there was nothing strange about this shift out of photography. It was entirely

normal for middle-class men to move from high risk, but high yield industry, to professions or, once investments bought in a steady 5%, voluntary work in charities and religious communities or local politics.[81]

Even setting aside the *rentier* dimension, there were good reasons for Beard's strategy. His business down to the end of 1845 or 1846 involved controlling the London market for portrait commodities, while licensing the right to operate in the provinces where he lacked local contacts and knowledge of regional market. He might step in if a local studio got into trouble. He did so in 1849 taking back into his control studios in Cheltenham and Manchester. In such cases, he sent one of his scientific men, or his son, to run the business. The regular appearance as proprietor or manager of various regional daguerreotype studios by the chemist J.F. Goddard who worked for Beard may indicate he was dispatched to shore up a studio until a new licensee was found.

Beard business model worked remarkably well. The social depth of the middle class in the capital—landed families in town for the 'season'; bankers, merchants and military officers; higher state functionaries; as well as those that served them, such as lawyers and doctors, artists, architects, musicians and writers, drapers and so forth—proved a substantial market for daguerreotype portraits. These people created sufficient demand to sustain Beard's three West-End studios. In addition, his licensees throughout Britain paid him fees, and sometimes running royalties, while taking the risk on fixed-capital outlays (setting up and stocking the studio), often he required licencees to obtain the items they needed from him.[82] In Beard's studio network, the regional licencees might become exposed if there proved to be insufficient custom in their area; if trade declined; or if they lacked enough circulating capital, leaving Beard in a position to repossess and resell the license. This kind of 'formal subsumption', where the labour process remained under the control of the nominally independent producer, was to Beard's advantage in a way that 'real subsumption', where the

[81] R.J. Morris, *Men, Women & Property in England 1780-1870*, Cambridge: Cambridge University Press, 2005.

[82] This is not unlike the structure of the Birmingham 'toy' industries analysed by Clive Behagg, where the large manufacturers outsourced work to the smaller workshops, thereby avoiding fixed capital costs. The small workshops were formally subsumed to bigger capital, in a way that left the labour process unaffected. In times of slump or crisis, the large manufacturers withdrew to their core concern and allowed the small masters to take the brunt of the shock. Behagg, *Politics and Production.*

capitalist took control of work, setting the pace procedures, was not.[83] The early photographic industry offers yet another example of polymorphous forms of capitalist production.

The standard emplotment for early photography presents us with the aesthetic rise and triumph of the silver image and Beard appears merely as a dark shadow cast over the genuine photographers who spurned commerce and stuck to their honourable calling. Beard's previous role as a coal merchant appears to spread dust over his reputation. In this story, Antoine Claudet figures as everything that Beard was not: artistic, gentlemanly and liberal.[84] That Claudet remained a partner with Houghton in the Holborn glass-merchant business into the 1850s is conveniently overlooked. Beard's daguerreotypes are thought to be mass commodities, revealing little in the way of individualism or good taste. The sitter's head and shoulders are positioned fore square in the centre of the image. Poses are rigid and props and backdrops are largely absent. Critics might acknowledge the technical problems, admit they are well made and, somewhat later, observe that the colouring shows finesse, but this is plain stuff; just the sort of thing that might be valued by a coal merchant. In so far as particular daguerreotypes from Beard's studios are thought to break this mould, it is said, we should look to his operators. In contrast, we are told that Claudet made exquisite images, displaying much refinement and distinction. The poses in his pictures are said to be varied and unusual; his lighting is full of subtlety and his settings for figures inventive and elaborate. Claudet's daguerreotypes are not seen to be commodities, but images displaying the artistic touch of a master. Beard's 'bankruptcy' in 1849 only serves to cement this moral tale, or so the story goes.

Since the 1970s, Beard's stock has risen somewhat and he has been repositioned as 'an ingenious and enterprising patentee' who displayed 'shrewd business acumen'.[85] Beard, we are informed, 'shrewdly' purchased the patent when Claudet could not meet the price[86]; he was a 'shrewd businessman' who made an 'astute choice as regards the location of his

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[83] For formal and real subsumption see Karl Marx, 'Appendix. Results of the Immediate Process of Production', *Capital*, Vol. 1., London: Penguin, 1976, 949-1084.
[84] Roy Flukinger observes many of the problems, even if his own account tends to Whiggism. Roy Flukinger, 'Beard and Claudet: A Further Inquiry', John Wood ed., *The Daguerreotype: A Sesquicentennial Celebration*, London: Duckworth, 1989.
[85] Bernard V. and Pauline F. Heathcote, 'Richard Beard: an Ingenious and Enterprising Patentee', *History of Photography*, 3:4 (1979), 313.
[86] Robert B. Fisher, 'The Beard. Photographic Franchise in England: An Overview', *The Daguerreian Annual*, Peter E Palmquist ed., 1992, 74.

premier studio'.[87] It is not my concern to praise the shrewdness and acumen of businessmen, or to sneer at coal merchants, but tackling the early history of the daguerreotype in Britain requires reassessing the standard attitudes and setting Claudet alongside Beard in a symmetrical field of commercial competition.[88] This does not mean evading the differences evident in their daguerreotypes, but accounting for them (though, we should remember that both employed 'operators' and there is rarely any way to tell who actually made any particular picture). Beard, like other men, was simply looking for outlets for his capital, which ranged from coal trading to photographic studios, through his investments in ultramarine pigment to rents on property. Photography took its place among his commercial endeavours; what mattered was the rate of return. Claudet took another route, pursuing a strategy of distinction. The condition of his patent license limited him to employing no more than three sets of apparatus, this meant that the business model employed by Beard was unavailable to him. Instead of developing a studio network, he invested in quality, establishing a lavishly appointed studio; experimenting and serving the top end of the market. Cashing in on the free-trade Liberalism of mid-century, Claudet accrued the sign of French taste to cement a position in the luxury trade.[89] Assessing photography from the judgement seat of 'Art' makes it difficult to account for the business choices these men made and that, in turn, makes it difficult to explain the art.

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[87] Bernard & Pauline Heathcote, *A Faithful Likeness: the First Photographic Portrait Studios in the British Isles 1841 to 1855*, Lowdham: self-published, 2002, 4-5.

[88] The principle of symmetry in historical explanation, among equivalent actors who could not know the future, was developed by the Edinburgh School of sociologists of science. This perspective involves 'relating action …to the meanings and typifications of actors themselves. All actors must initially be regarded as operating authentically in accordance with their own conceptions of reality'. Barry Barnes, *Scientific Knowledge and Sociological Theory*, London: Routledge and Kegan Paul, 1974, 69.

[89] Steve Edwards, 'Décor and Decorum in the Temple of Photography', in D. Arnold ed., *Interdisciplinary Encounters: Hidden and Visible Explorations of the Work of Adrian Rifkin*, London: IB Tauris, 2015, 73-105.