
The Human behind the Machine: How Technological Advancements in 21st Century Printing Have Affected the Employees of the Trade

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Abstract

This article analyses examples of technological changes within the printing industry that have occurred in the 20th and 21st century, and evaluates how the employees of the time were affected by these advancements. The events of the Wapping dispute and printers strikes in 1986 poses questions on how print employees were treated around this time and how their careers were viewed by corporate businesses. Robertson and Twyman analysis and explanation of the print industry's technological advancements shows the evolution of these changes and how the industry became dependent on the 'machine'. Alongside these academics, interviews with Brian Hibbitt, Grahame Rose and Jamie Wiltshire provide insight on the emotional wellbeing and opinions of print workers throughout the 20th and 21st century.

Key Words

Print Production, Letterpress, Lithography, Murdoch, Wapping

Introduction

Novels, newspapers, catalogues, flyers and posters are all end products of print production. How these mediums become their final product involves a high intensity process that requires materials, machines, and most importantly, a team of passionate employees that care about design and production quality.

The printing industry has been a constant movement of change brought about by technological advancements and attitudes formed by society. The printing industry in 2018 is very different from the 20th century, where the rapid acceleration of change began. The printing mechanisms moved from reliable letterpress machines, to the new form of

lithographical machines, to the advancements of photocomposition and to the progression of offset lithography. These technological advancements gave way to new ideologies of entrepreneurs such as Murdoch and Maxwell, who wished to obtain the opportunities that came to light with the improvements of these mechanisms. This resulted in a new era for the industry, and later caused printer strikes over the Wapping dispute in 1986. The evolution of print technology had been posed as the future, bringing with it financial success, efficiency, and quicker production times. However, it is debatable that these 'improvements' have been the best for the industry and beneficial for the employees.

Methodology

An important aspect of the printing industry are the workers and professionals of the field. It can be argued that through the changes and advancements of print, the community of print workers have been forgotten and their thoughts on how the industry has changed has been overlooked.

For this article, three interviews have been conducted with selected printing professional who have a variety of expertise in the printing industry. The professionals interviewed are Brian Hibbitt, Jamie Wiltshire and Grahame Rose.

Brian Hibbitt has spent 64 years in the printing industry. From starting at the age of sixteen as an apprentice compositor has worked for many companies such as Greenaways, Severn River Printing, Tiny Rowlands and TurnerGraphic. He was founding chairman for The International Printers Network and as the MD at Greenaways, received the Royal Warrant.

Jamie Wiltshire has spent 34 years working in this industry, starting in 1984 at the age of sixteen. He started as a plate maker and quickly moved onto design. Jamie has worked for GPrint, TurnerGraphic, RCA, Cedar Group and Black Sheep Create.

Grahame Rose has worked in the print industry for 48 years: the Basingstoke Gazette for 18 years and TurnerGraphic for 30 years. He has had a career as a keyboard operator and was in charge of the prepress department. The experience and expertise of these professionals provide an in-depth insight into the changes and advancements within the late 20th century, which adds substance and character to this article.

The Impact of Change

Print production has been around in some form for centuries, but the most crucial and signification period of print occurred in the 20th century, where production changes were rapid and extravagant. In the 20th century, the old style of printing and letterpress, which was used since the 18th century gave way to a new form of printing; lithography (Twyman, 1998 p.76). Letterpress and lithography were very much in competition in the early 20th century but settled with two different cliental; the larger firms investing in early stages of lithographical machines, and the smaller, majority of firms continuing with letterpress (Twyman, 1998 p.76). Letterpress machines involved using hot-metal typesetting and many workers had jobs as hot metal compositors. Workers who had experience working with hot metal still consider it today 'a real trade and a proper craft' (Personal Interview, Grahame Rose, 5th April 2018). This is due to the skill sets required to work these machines. Print workers possessed skills that the average person were not trained in, 'if you mentioned you were a printer they were sort of in awe of you' (Personal Interview, Grahame Rose, 5th April 2018). Lithography used a different method of typesetting which used printer's plates, ink and water. Lithographical printing skills developed from office work and these skills were absorbed by the 'low-ranking' workers such as typists, office boys and print room staff (Robertson, 2013 p.111). These skills developed, and printers formed their own language such as points, picas, leading and type-facing (Personal Interview, Grahame Rose, 5th April 2018). Lithography took massive strides towards 'offset lithography' in America. Ira Rubel discovered a way to transfer images to a rubber cylinder and then to paper. The flexibility of the rubber cylinder meant that high resolution images could be transferred onto a range of different papers (Twyman, 1998 p.78). Printing machines increased in capacity and lithography replaced letterpresses almost completely as photocomposition developed (Twyman, 1998 p.78). Even though lithographic printers improved, they were set back by the typesetting. This prompted the development of photocomposition. This was the idea of taking photographic images of letters, making a calotype negative of them and then cutting them individually so they can be rearranged to form words and phrases. Even though this

was a technique used in the 19th century, photocomposition peaked in development in the 1940s with a photosetting machine. Multiple forms of this particular machine were created and developed up until the 80s (Twyman, 1998 p.79/80). Typewritten copy could be pasted up and assembled without a compositor which then could be transferred 'photomechanically' to offset litho-printing plates (Robertson, 2013 p.111/2). Development of photocomposition meant that the 'origination of words and pictures together in a form that was convenient for lithographic printing' in which effected the whole printing industry (Twyman, 1998 p.80).

The advancements of technology have made radical changes to machinery as well as the quality and efficiency of printing. However, these technological progressions have also affected the businesses. An example of this is xeroxography, led by the company Xerox, which made an impactful change on printing presses in the 90s. They 'came into the industry as a new force' (Personal Interview, Brian Hibbitt, 5th April 2018) and impacted a lot of companies in disastrous ways. This can be seen as the start of the downfall of many printing houses because they 'didn't understand what was happening'. Printers were used to having rows of machine that were 'big lumps of heavy metal' and one of their main characteristics was that they took a long time to 'die'. The financial worth of these printers is arguably the same amount ten years later as when it was new. Xerox took these machines that were built like tanks and swapped them with 'tin and plastic boxes' posed as the new printing machinery (Personal Interview, Brian Hibbitt, 5th April 2018). The lifespan of these new machines did not cross the minds of the CEOs of these printing companies. The new ones may have had a lifespan of three or five years but 'after that were worth nothing' (Personal Interview, Brian Hibbitt, 5th April 2018). They had no second-hand value unlike the old sturdier machines. After the Xerox printers came to its inevitable end, the company had to buy new a one, which was an unforeseen effect on the industry. 'A lot of companies didn't anticipate the fundamental change in the financing of their business ... They thought they could apply the same rules (from) the old machinery to the new machinery' (Personal Interview, Brian Hibbitt, 5th April 2018). New technology can make or break the foundations of a business strategy and even though adapting to technology advancements is key,

caution and careful planning must be considered when approaching technology and machinery.

Rupert Murdoch and the Wapping Dispute

Advancements on print technology has a massive effect on the employees. There is no better example than the Wapping dispute in the 70s and 80s. Print culture changed dramatically at this time, most prominently in the newspaper presses (Robertson, 2013 p. 114/5). One of the biggest impacts on newspaper printing, and printing in general, was ‘the three Ms’: Maxwell, Murdoch, Maggie. ‘They brought a new approach to the industry’ (Personal Interview, Brian Hibbitt, 5th April 2018). In the 70s and 80s, corporations seized the possibilities of offset lithographic printing and used it ‘as a means of attacking the power of those skilled craft trade unions’ in which was ‘restricting training and employment’ since the 20th century (Robertson, 2013 p.115). This was very much at the same time Rupert Murdoch came into Fleet Street and ‘brought into a very conservative, old, established newspaper: *News of the World*’ (Personal Interview, Brian Hibbitt, 5th April 2018). Murdoch came into this industry with ‘a breath of fresh air’ and an idea, a new approach to producing papers (Personal Interview, Brian Hibbitt, 5th April 2018). There was new technology available and in development which they were unable to implement because of print union restrictions. They were less prepared to accept the changes because it inevitably meant less people, which arguably was the start of conflict between Murdoch and the print unions.

Murdoch saw the opportunity in the idle presses and used them to produce more papers efficiently which didn’t go down well with the workers or print unions. According to Brian Hibbitt, who worked for Tiny Rowlands when printing *News of the World*, the newspaper had a huge press room because it was one of the largest circulations of any Sunday paper which worked once a week. Initially, ‘It was idle for six days a week’ though this changed once Murdoch brought another paper *The Daily Herold* and turned it into *The Sun*, publishing it on the *News of the World* presses on those idle six days. ‘It’s just common sense ... that was just, if you like, the beginning’ (Personal Interview, Brian Hibbitt, 5th April 2018).

Maxwell was another entrepreneur, who similar to Murdoch, wanted a part of the newspaper industry. Some have said that Maxwell 'sailed closer to the wind' than Murdoch. He began to accumulate a huge empire of printers by acquisition, *The Daily Mirror* being one of them. Maxwell and Murdoch were set on bringing a change to the print production of newspapers, their only stopping force was the print unions due to their restricted practises.

During this time large printing companies consolidated their power and became extremely competitive. In short, six companies were left controlling 80 percent of print production in 1974 (Robertson, 2013 p.115). Publishing companies had the same outlook as the newspapers. Many publishing companies formed mergers or acquired smaller publishing houses to form large, and often transnational, conglomerates (Finkelstein & McCleery, 2013 p.65). In the 1980s, computer inputting of text could be done by anyone with office typing skills, so employers tried to hire female office workers to try and replace the skilled print worker. (Robertson, 2013 p.115) New techniques meant the labour organisations and control in traditional printing was ambiguous and employers saw this as a way of breaking the power of the print unions. (Robertson, 2013 p.112). More employers started working towards removing print trade involvement all together and pressured journalists to take up their roles instead. 'Traditional typographical craft skills were now eclipsed by a battle for "control of the keystroke"' (Robertson, 2013 p.115).

In 1986, there was a final dispute between Murdoch and the trade unions which lead to Murdoch deciding to close down the print plant in Fleet Street and move it to the Wapping district in London (Robertson, 2013 p.115). Murdoch had sufficient money and with regards to the old Fleet Street presses 'we're going to throw them away and build a new factory and do it my way' (Personal Interview, Brian Hibbitt, 5th April 2018). Even though the print unions were in place to prevent such action as this, Murdoch and Maxwell had the support of the government. Margaret 'Maggie' Thatcher said that a stand needed to be taken against the Unions demands within printing.

On the 24 January 1986, between 5,500 and 6,000 print workers went on strike on behalf on the print unions. During the strike 1,262 workers were injured and 410 participants were arrested (Independent, 2016) (The Guardian, 2011). With Murdoch's

money, Maxwell's empire and the support of Thatcher, the strike ultimately failed. Upon the subsequent ending of the strike, the newspaper printing plants were moved to Wapping, 6,000 print union members were dismissed, and 5,000 print workers were at risk of losing their jobs. (Robertson, 2013 p.115) (Guardian, 2011). Some saw the positive in this movement saying 'The whole industry was rotten', the employees of the print trade hadn't got a fair deal and the whole industry 'needed fundamental change' (Personal Interview, Brian Hibbitt, 5th April 2018). Some printers who worked in other forms of printing felt unaffected by this change stating it was 'more to do with the newspapers. The kind of printers that I was going to be working for was always going to be a different sector' (Personal Interview, Jamie Wiltshire, 29th March 2018), and some viewed it as the death of the print production, 'you look at the situation now, and you can only say: there's no worker protection at all' (Garner from The Guardian, 2011). Either way, the Wapping dispute created one of the biggest changes in the 20th century and was the beginning of the end of the print unions.

21st Century Printing

Print has adapted and changed throughout the 21st century with the guided help of technology. It can be argued that in this day and age, anyone can produce print with the use of desktop publishing. Computer programmes such as Microsoft Word, InDesign, Kindle Direct Publishing, Squarespace, and many more make it more accessible for the average human being to produce, print and publish to a similar extent as professional printers. Brian Hibbitt believes because design and the process of print is complex and requires a certain trained eye, 'Desktop publishing decimated the preparation of documents'. Trained designers can be 'appalled' by what the untrained can produce because there most certainly are aspects missing or elements that haven't crossed the mind of the individual producing it. 'You are giving somebody the tools without giving them the education that goes with it ... that could be regarded as an old fashioned view' (Personal Interview, Brian Hibbitt, 5th April 2018).

Others believe that printing skill sets have 'definitely' declined over the last decades as there are 'lots of skill sets that no longer exist' (Personal Interview, Jamie Wiltshire, 29th March 2018). An example of this is proofreading; 'I don't know anybody who has employed a proof-reader.' Within the printing industry, proofreading was a standalone profession but over the years has been demoted to a skill within other professions. 'It's up to the client to supply it correct where it (used to be) all a part of the service we use to offer'. This can create a challenge for designers and printers as proofreading is a skill everyone thinks is easy to nurture but is actually a real art form: 'sometimes it's not just spelling mistakes. It could be spacing between paragraphs, sub-heads, headings, indents,' These aspects of proofreading can be forgotten about if someone hasn't been taught the skill of proofreading. In the 21st century a document can sometimes be riddled with mistakes due to the lack of training the person who's proofreading has received, '30 years ago that wouldn't have happened' (Personal Interview, Jamie Wiltshire, 29th March 2018). Many print workers believe that 'once computers came in ... anyone could do it' (Personal Interview, Grahame Rose, 5th April 2018). You could argue that the average person who hadn't been trained or at least hadn't researched design and print techniques, didn't know about typefaces and what fonts were most appropriate for which style of document. Grahame Rose argues that typography is non-existent. It is a skill that has been lost in the 21st century due to the accessibility of publishing software, as few people research the proper techniques of print production. However, this can work against the originator as Brian Hibbitt puts, 'I think you are, whether you like it or not ... indoctrinated into good design'. The average person may not be able to produce quality designed documents, but you can recognise when something that has been designed with thought, care and quality. 'I'm a firm believer in maintaining design standards' (Personal Interview, Brian Hibbitt, 5th April 2018). People can pick out subconsciously between something that has been produced properly with attention to detail, next to something that has been manufactured on a desktop publishing system that is in many cases, less than perfect. 'People will move towards the thing that has been done properly' (Personal Interview, Brian Hibbitt, 5th April 2018).

Along with computer programmes that have made production more accessible, the expectation of production time is much greater and of a higher importance than it had been in the past as 'we now live in a twenty-four hour environment' (Personal Interview, Brian Hibbitt, 5th April 2018). People expect things immediately and 'If you don't get it tomorrow it's a disaster'. This attitude is very much driven by technology as it's become more of an importance in our culture. In some cases, it's not technology getting faster or more powerful, but due to technological advancements changing 'how something gets from A to B' (Personal Interview, Brian Hibbitt, 5th April 2018). To get a document from one person to another, there is no longer the need to print out the document, hire a courier, then the courier to deliver to the recipient. Today, the first person attaches the document to an email, then sends the email to the intended person. Various steps have been eliminated completely, as a result the time scale is reduced. This is not necessarily a positive thing for the remaining print workers. The process speed can be taken advantage of by employers and clients, equalling an unrealistic deadline. 'You *did* have time to everything properly ... if a job took two days to do, you had two days to do it. Nobody came up to you and said: "you have a day to do a two-day job"' (Personal Interview, Jamie Wiltshire, 29th March 2018). It can be argued that quality has been sacrificed for efficiency of timing. Back in the 20th century all that really mattered was the quality, 'I think the difference was then is that you did the job as long as it was done properly, the time element wasn't that important' (Personal Interview, Grahame Rose, 5th April 2018). Now the time element is everything which can pose an issue for quality control and mistakes can slip through '(you) want it today, you'll get it today, but it will be reprinted tomorrow' (Personal Interview, Grahame Rose, 5th April 2018).

Conclusion

Overall, there is more than enough evidence to show that print industry workers and the companies themselves have seen little benefit from the advancements in print technology over the 20th and 21st century. In the early 20th century, the competition between letterpress machines and lithographical machines was lax and companies could freely

choose which machine was best for their company. It wasn't until lithography saw massive production improvements that they started dominating the market and becoming the printing machine norm. There is evidence to show new machines can sometimes cause more harm towards printing companies, such as Xerox machines which damaged companies financially as it was not expected for the lifespan of these new machines to be half that of the machines that they were used to, and therefore didn't change their business plan accordingly. Society and business changes in this industry was least beneficial to the employees as can be seen with the Wapping dispute. The fight for control and power between the print unions and Murdoch resulted in little benefit for the workers that produced the newspapers. Murdoch's eagerness for production efficiency, financial gain and power caused lost jobs and stress for many workers. The downfall of the print unions, even if the system was not perfect, left print industry employees unprotected. Considering print production today, many skill sets and jobs are non-existent such as proofreaders. In the 21st century, the ability to produce, print and publish is given to anyone. People are given the tools without the education to use them which can cause a lack of quality in the printed products produced in this day and age. However, we as human beings are subconsciously drawn and intrigued by well produced and designed documents. This gives hope that the next generation of printers and designers learn printing techniques and strive to produce quality pieces of work.

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