Stories in their place:

1. The Makers of Leeds

This booklet is based on a series of blog posts I wrote between 2009 and early 2013. It gathers together stories about some of Leeds' heroes, its industrial and scientific pioneers.

It is part 1 of a series. Part 2 expands on the concept of "narrative capital," the stock of stories that a city has to draw on. Part 3, to be published shortly, takes a tentative look to the future, wondering if the heritage of the city and its wider region could be a foundation for a new, forward-looking "idea of the north."

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February 2013

Temple Works 3.0 Alpha

This journey begins with a collapse. Once the "largest single room in the world," with innovative air conditioning under the floor and sheep grazing on a grass-covered roof, Leeds' Temple Works had fallen on hard times. In the early hours of Monday December 8, 2008, one of the massive stone pillars of the Grade I listed Egyptian-style building gave way. The road outside was blocked with shattered masonry while a gaping hole had opened up in the roof.

From my desk on the fifth floor of next-door Marshall's Mill, I had a ringside view of the damage, which you can see on the front cover of this booklet. Over the months that followed things started to happen. Repairs began and plans were afoot for reuse of the building. Thanks to Culture Vulture Emma Bearman, I was privileged to get a peek inside.

Here in the heart of the world's first industrial nation, it's not unusual to see old places learn to serve new purposes in response to people's changing needs. As traditional manufacturing has moved offshore, countless mills, factories and warehouses have been regenerated as offices, retail, flats and hotels. At Salt's Mill, near Bradford, you can find art and electronics under one roof.

Yet Temple Works stands out from the crowd for so many reasons. At first sight there's the weighty Egyptian facade, modelled on the Temple of Horus at Edfu, loom-

ing incongruously over edge-of-town Holbeck. Going inside for the first time, we can appreciate the sheer scale of the place. And in its stripped-out state the innovative construction is easily visible. The sun streams in through 65 circular skylights.

Scratch the surface for something still more fascinating: in two distinct incarnations Temple Works tells the story of the past 160 years of working life, and with a third it poses tantalising questions about where we go next.

Temple Works 1.0 was a flax spinning mill, built by John Marshall, just as British manufacturing powered into the Victorian Age. Marshall's first mills had been functional red-brick boxes constructed rapidly to house the innovative spinning frames that made his fortune. Joseph Bonomi's stone facade signalled a new confidence, authority and permanence.

Despite his political opponents' accusations of abuse of child-labour in his mills, Marshall was regarded as one of the most liberal factory owners of his time. In his factories, overseers were not allowed to use corporal punishment on the workers. Younger children were encouraged to attend day school, and older children were given free education on Monday afternoons.

Marshalls ceased production there in 1886, but the textile use continued, moving up the value chain from spinning

to clothing manufacture for James Rhodes and Co. This was Britain as a maker of things, the Workshop of the World.

Temple Works 2.0 was the northern distribution depot of Kay's, the mail-order catalogue. After the Second World War the historic manufacturing sectors were undercut by industrialisation elsewhere in the globe, where people could produce at lower costs and in greater variety. Now Brits wanted a piece of America's consumer revolution, and Kay's were ready to oblige. Think of 1950s catalogue shopping as the e-commerce of its day, and Kay's as Amazon.com.

Just imagine Temple Works' vast single-storey open space filled with clothing and consumer goods ready for dispatch to home-shoppers across Northern England. Kay's is well within living memory, and in parts the mill we found was much as the warehouse people left it when they moved out five years ago. The regeneration plans entail the demolition of an unloved 1950s extension, but I really hope the new uses will connect as much with this era as with the distant rattle of Marshall's spinning frames.

Temple Works 3.0: What does post-industrial, post-consumerist Britain look like? The days when we defined ourselves by our industrial production have long gone, though the making of things could yet stage a comeback. It would be great to see products stamped with "Temple

Works" again. It's unlikely to be mass production on John Marshall's scale, so we'll have to make up what's lacking in quantity with quality in handmades and one-offs.

We have more stuff than ever before, but it's no longer fashionable to define ourselves by what we buy. By the time of the Temple Works collapse – at a time when Governments around the world were busy propping up the world's financial system – Leeds' carefully cultivated image as the shopping capital of the North was already looking anachronistic. As well as things, we will spin experiences, authentically anchored in time and place, but also shareable as multimedia, cast out upon the web. For the first time in its life, Temple Works will be open to the public on a regular basis: people in, instead of goods out.

Despite (or perhaps because of) the economic climate the people behind the scheme to turn Temple Works into a major cultural venue went out of their way in those early days to connect with all interested parties to make this vision a reality. The overall scheme was to proceed painfully slowly, but some parts of the building were made usable within a few months – a Temple Works 3.0 Alpha.

17 June 2009
http://wp.me/p1bV4-ay

How to get ahead in business the Boulton and Watt way

At a low-fi Temple Works Christmas party just a year after the collapse, I argued with Ivor Tymchak about the pace of technological change. A few weeks later Ivor and Richard Michie invited me to talk at the first ever Bettakultcha event, to take place in the Temple Works boardroom. How could I resist? The story I chose to tell was that of Matthew Murray, one of John Marshall's most trusted employees, and his run-in with one of the biggest names of the industrial revolution.

Dirty tricks among high-tech businesses? I recently came across the original Machiavellian play book for start-ups, and it's more than 200 years old.

Our hero is Holbeck engineer Matthew Murray; his nemesis steam pioneer James Watt. Both made engines for the textile mills of northern England – in effect the processing power to transform raw wool, flax and cotton into finished cloth. Later, their inventions went mobile to haul the first railway trains.

But the villain of this piece is Watt's son, also called James, who in 1794 joined his father's partnership with Matthew Boulton. Within a few years the upstart Leeds foundry of Fenton, Murray and Wood proved a serious competitor to Boulton & Watt's more famous Soho works in Birmingham.

The stories of Watt's feud with Murray are the stuff of Leeds legend, but to understand just how blatant it was we must revisit the original sources, the letters and newspaper advertisements of the protagonists themselves.

Here, in his own words and those of his contemporaries, we can piece together the business wisdom of James Watt Junior.

1. Reach out to your competitors – In 1799, Watt's employees Abraham Storey and William Murdock visited Leeds and called on Fenton, Murray and Wood, whose purpose-built Round Foundry was under construction just across the road from John Marshall's mill. Murray recounts in the Leeds Mercury of 20 July 1803: "Mr. Storey, Manager of their Foundry, and Mr. Murdock, Superintendent of the Workmen at Soho, some time back visited our Works at Leeds, and from their assuring us of Messrs. Boulton, Watt & Co.'s friendly disposition were admitted into every part of the Manufactory by Mr. Wood and myself; they were permitted to take Patterns and Specimens of our Workmanship, and we know that upon their return to Soho many of our Improvements were immediately adopted, and the engines made after that by them were in part constructed on our Plans."

Boulton confirmed this in a letter to Watt Junior: "Murdock & Abraham are now returned from their excursion highly delighted and full of panegyricks upon Murray's excellent work."

2. Be generous with your hospitality – Boulton goes on: "They were admitted into every part of Murray's manufactory & spent two evenings with him and by virtue of a plentiful dose of ale succeeded in extracting from him the arcana and mysteries of his superior performances."

The return visit, according to Murray, was not so cordial: "Mr. Murdock, upon taking his leave of us, expressed a wish that as they and we were certainly the best Engine Makers in the Kingdom, we should always be upon good terms, and that if ever I should go to Soho, they would be very glad to show me all their Works. I did go to Soho, and was refused admittance into their Manufactory of Steam Engines."

3. Be a flexible employer – There seems to have been a flow of workers between the two rival businesses, and when one of Boulton & Watt's finest moved from Birmingham to Leeds, Watt Jnr travelled north to lure him back into the fold with an offer of increased pay. Yet having re-engaged the defector he was in no hurry to have him back at Soho: "Halligan has signed the agreement... If I mistake not he has it in his power to benefit us most materially, as he has been extremely attentive to all that is going on in the Foundry here and

has picked up much valuable information. He is to remain with Murray as long as we may direct and to make application to try his hand at the green sand [the casting method at which Murray works clearly outdid Watt's]."

4. Steal with pride – Watt had a further task for Halligan: to obtain the private correspondence of another defector, named Hughes: "He has promised to endeavour to get at old Hughes's letters upon Wednesday night when the youth goes to the play and it is supposed may leave his letters in his working clothes. I confess that this is not very probable from the caution he observes and if it does not succeed, must have them examined whilst he is drunk or sleeping to ascertain whether they are worth taking."

A later letter reveals that Watt did get sight of the correspondence, but found nothing in it of use.

5. Expand into adjacent industries – as in those industries that happen to be adjacent to your competitor's premises. Watt to Boulton on 12 June 1802: "I have been surveying the environs of this rival Establishment & making enquiries respecting the property & tenure of the neighbouring lands, with a view to seeing whether we could purchase anything under their very nose that might materially annoy them & eventually benefit ourselves. I find there are about 2 acres of Land next to Murray's works, which may be purchased, but the price probably will be £5 to 600 per acre. I shall learn the exact terms. There is a Malthouse which projects into their premises, which they have in vain endeavoured to purchase at a moderate rate. It is in the possession of a Widow, who is aware that it would be of some advantage to them & therefore asks a high price. This would enable us to over-

look their whole Yard & holding it we might dictate our own terms."

Boulton & Watt eventually bought a 1.5 acre plot next to Murray's works in order to prevent them expanding, though the widow at the malthouse asked too high a price.

6. If you can't innovate, litigate – Murray had patented a number of improvements to steam engines, but Boulton & Watt challenged these, claiming that some were not original. It seems that Murray made the mistake of packing too many innovations into a single patent, so that when one element was questioned the whole patent would be lost. Murray declined to defend the Boulton & Watt challenge, saying he "did not think proper to defend it with such rich and powerful Opponents".

Instead Murray kept his focus on his customers: "But the World I believe cares very little about Messrs. Boulton and Watt stealing my Inventions, or my stealing theirs; what people want of us are good engines..." He offered a 100 guinea wager that he could build a better engine than Boulton & Watt, to be judged by a jury of 12 other engine makers. The challenge was not taken up.

In the long run both businesses prospered. Murray went on to provide the engine for the World's first commercially successful steam railway, at Middleton Colliery, near Leeds. He died in 1826, his firm outliving him until

it went out of business in 1843. Boulton and Watt lasted 120 years, making steam engines until 1895.

3 December 2009
http://wp.me/p1bV4-hN

The Other Fourth Plinth

Curiously, James Watt Senior, not Matthew Murray, is commemorated by a statue in Leeds' City Square. In a guest post on the Culture Vulture's blog, I called for this to be put right.

On a Sunday morning in February 1926, a delegation assembled around a cast iron obelisk in the yard of St. Matthew's Church, Holbeck. Led by John Arnott, the Lord Mayor of Leeds, the city's civil, mechanical and electrical engineering organisations were well represented, employers and trade unionists united in a common endeavour.

They were there to mark the centenary of the death of steam engine pioneer Matthew Murray, whose grateful workers had cast and erected the obelisk in his honour. It still stands today.

The incumbent Rev. R. J. Wood preached a sermon on a text from the Book of Proverbs ("Seest thou a man diligent in his business? He shall stand before kings; he shall not stand before mean men") and after the service there were talks on the life of Murray, including one by the Leeds engineer E. Kilburn Scott who was to edit a centenary biography.

Murray arrived in Leeds as an uneducated journeyman blacksmith in 1789, and went on to build the world's first integrated engineering works, the Round Foundry; to

make the locomotive for the first commercially successful steam trains on the Middleton Railway; and to train many apprentices who took the city's engineering prowess to new heights. All this he did in spite of the bully-boy tactics of one of the biggest names of the industrial revolution, Boulton, Watt and Sons. In particular the Sons ran a campaign of dirty tricks to stop Murray's start-up in its tracks.

In his talk Kilburn Scott listed Murray's many achievements in spinning, steam engines and boring machines (as in, machines for making holes in things). He gave a lurid account of Watt's campaign of persecution. But there was one final injustice that Kilburn Scott felt especially keenly.

In 1899 Leeds councillors had chosen statues to adorn their brand new City Square. As the centrepiece subject they picked Edward, the Black Prince, who despite having no personal connection with the city symbolised the virtues they hoped to uphold: democracy and chivalry. For supporting roles they chose three Leeds worthies: scientist Joseph Priestley, merchant John Harrison and clergyman Walter Hook. For the fourth plinth they picked a famous engineer: none other than Matthew Murray's nemesis James Watt.

Surely, said Kilburn Scott, this could not have been a deliberate rebuff of a favourite son? If the city fathers had known then of the story of Watt's subterfuge, it might be

Murray, not Watt, gazing down on arriving passengers at the new City Station.

As a newspaper letter-writer, W.J. Barker, put it at the time: "Matthew Murray, who with exceptional skill and high reputation, founded the locomotive industry in Leeds, lies in a neglected and half-forgotten grave in Holbeck Churchyard, while the memory of the man who became so jealous of him that his firm bought land next to Murray's works with the object of preventing extensions, is commemorated in City Square."

But the victors write the history, and James Watt Senior still stands on his plinth today. While the other statues reinforce morality and genius as our Victorian predecessors intended, the presence of the Watt statue sends quite the wrong message about the nature of power. I don't want my children believing they can scheme and strong-arm their way to the top. Something must be done, and even after all these years it is not too late.

With the price of metal not now what it used to be, melting down James Watt would seem a wanton waste, so perhaps one of the places with which he's more associated – his birthplace of Greenock or adopted home of Birmingham – could be persuaded to give him a more fitting home? After all a weed is only a flower in the wrong place.

The righting of this century-old injustice would leave us with an empty spot in a prize City Square location, and I accept that in these straitened times it may not be possible to do Matthew Murray full justice in bronze.

So what if Leeds were to take just one lead from London, where a Trafalgar Square plinth has become famous – the most famous of all plinths - for it lack of a permanent occupant? What better place to give new work a platform? People of Leeds, what would you put on City Square's fantasy fourth plinth?

6 October 2010
http://wp.me/p1bV4-pR

The Makers of Leeds

Not far from Temple Works stands the Mint, an eight-storey new build office block with commanding views across the city. Imran Ali's spectacular panoramic photos from the building were the starting point for my talk at the TEDxLeeds event that Imran organised with Emma Cheshire, on the top floors of the Mint.

It starts with the amazing view from the top of the TEDxLeeds venue, the Mint, which looks out over Leeds on all sides. The American architect Hugh Newell Jacobsen said: "When you look at a city, it's like reading the hopes, aspirations and pride of everyone who built it."

And where better to illustrate this than in one of the world's oldest industrial cities? The new cities springing up in Asia, Africa and South America have 200 years to wait before they have such depth of stories.

Looking down towards Leeds Bridge, we can imagine the scene where Louis Le Prince shot one of the world's first ever movies. Together with his wife Lizzie, who trained in ceramics, Louis started a "school of technical arts" in Leeds. This marriage of arts and science is still alive today among the poets and sketchers of the Leeds Savages and the makers and hackers at the Leeds Hackspace.

While we think of new media as bits and bytes, digital content, the new media of the late Victorian period was

chemistry – specifically the actions of light and chemicals on ceramics, brass, paper and celluloid. The Le Princes had to combine these things to come up with a whole new artform.

But to make his design a reality, Le Prince needed a way to reliably move the film through the gate of his camera or projector. He turned to an inventor who had something every city needs – tickets (just think of all those football matches and theatre performances). James Longley had invented a machine for dispensing tickets. Le Prince commissioned him to combine this know-how with his own work on photography to create his camera-projector.

And the result is a snippet of traffic moving across Leeds Bridge – commemorated on a blue plaque as "probably the world's first successful moving pictures". If you don't believe how important this is, you can look it up yourself in the Internet Movie Database where Le Prince dominates the movie charts for 1888. There are no entries for 1887.

Just down the road from Leeds Bridge is Meadow Lane where hacker Joseph Priestley moved in near Jakes and Nell's brewery. He noticed bubbles on the vats of beer and wondered what they were. This led to a series of experiments that isolated the gas we know today as oxygen. Priestley shared his discoveries of the effect of this gas on plants and animals with his coffee-house friend Ben

Franklin who, in a startling leap of imagination, suggested that we should stop chopping down trees. The green movement began with a mint plant in a bell jar in Joseph Priestley's kitchen. Steven Johnson also tells how Priestley invented a process for making fizzy drinks. He open sourced the method and Johann Schweppe cleaned up.

Speaking in Shanghai, the writer Charlie Leadbeater set out six C's that determine a city's capacity for innovation: combination, conversation, co-evolution, challenge, commitment and connection. I think we can see plenty of all six C's here in Leeds. The Le Princes combined art and science, mechanics and chemistry to make moving pictures. Priestley's exchanges with Ben Franklin and his French rival Antoine Lavoisier give us conversation.

For co-evolution – the ability of suppliers, manufacturers and customers to develop solutions together – we look across the city to the three Italianate towers of Tower Works. Thomas Harding who built the towers was a maker of pins, not dressmaker's pins but the pins used by billion in the textile industry. He understood that the business would prosper if his customers could rely on standard sized pins from multiple suppliers, so he worked with his customers and competitors to develop a range of standard pin sizes, called the Harding Gauge. For a mod-

ern parallel, picture those pins as angle brackets and the Harding Gauge as HTML, a standard language facilitating endless innovation and efficiency improvements.

Co-evolution was also central to the parallel developments of coal-mining, manufacturing and consumption in our city. In Holbeck, Matthew Murray built the Round Foundry, possibly the world's first integrated engineering works. But he faced challenge in the form of competition from Boulton and Watt, a much bigger name in the steam engine trade. James Watt Junior stole Murray's ideas, recruited a spy at his factory and bought up land to stop Murray growing his business. But the competition spurred Murray on, and he built the steam engine for the first commercially-successful steam railway at Middleton Colliery.

It seems unjust that the engineer commemorated by a statue in City Square is not Matthew Murray but his nemesis James Watt.

Murray's mentor John Marshall faced challenges of a different kind. He was a flax spinner and flax spinning was a flammable business. When one of Marshall's wooden-framed mills burned down he partnered with a designer of a different kind of mill, one made of cast iron and brick. That's commitment! The resulting fire-proof

mills, like Marshall's Mill in Holbeck are an important step in the evolution of the skyscraper. So it is fitting that Leeds is the home of the best new tall building of 2010, the "rusty tower" Broadcasting Place on Woodhouse Lane.

We can list a series of start-ups and businesses grown in Leeds:

- Marks & Spencer, founded on Leeds Market
- Burtons, which mass-produced suits for de-mobbed soldiers after the Second World War
- Freeserve, which revolutionised the business model for ISPs in Britain, enabling millions of households to get online for the first time.

But what's left as we move from the industrial to the post-industrial? At St Aidan's former colliery near Garforth a five-storey-high giant walking robot stands marooned in a Teletubbyland of grassy hills and lakes.

What's left, I think, is narrative capital, the wealth of stories we can draw on to make sense of our present and inspire our future, it's the power people have to tell stories about their places and lives. And unlike coal, narrative capital never runs out. It's a rich seam that's getting deeper all the time.

Stories belong to everyone, so as well as the great innovators, the dead white men, it's important to remember the contributions of ordinary people, like the thousands

of women who laboured over spinning machinery in Temple Works, in its heyday the biggest room in the world.

And stories can be slippery when we try to grab hold of them. Of the heroes listed here:

- Louis Le Prince was a Frenchman who had to go to New York to commercialise his invention
- Joseph Priestley was from Leeds but ended his life in exile in the United States, having been hounded out of the country due to his radical political views
- Matthew Murray was a Geordie so the North East has as much claim on him as we do here in Leeds.

All of those people bear out Charlie Leadbeater's sixth C, connection to the wider world. As do the buildings that our Nineteenth Century predecessors have left us. Squint and you can see:

- The Temple of Horus at Edfu in Temple Works on Marshall Street
- Renaissance Florence, Verona and a Tuscan hill town in Harding's Tower Works on Water Lane
- The Alhambra in John Barran's warehouse on Park Square
- Paris at Cuthbert Brodrick's Corn Exchange

So when I hear that people want to make Leeds "the best city in UK" I wonder whether that's ambitious enough.

Our predecessors saw themselves not as better than, but certainly equal to, any great city anywhere in recorded history.

Which makes me optimistic for the future of the city. As the American writer and campaigner Jane Jacobs put it: "Lively, diverse, intense cities contain the seeds of their own regeneration, with energy enough to carry over for problems and needs outside themselves."

10 November 2010
http://wp.me/p1bV4-rC

Finding Lizzie Le Prince

For several years I've been pleased to take part in Ada Lovelace Day, an international day of blogging to celebrate the achievements of women in technology and science. From my reading of the Le Prince story, Louis' wife Elizabeth is equally deserving of the honour, not as the tragic, devoted wife and mother that she clearly was, but as an artist, technologist, educator and advocate. This Ada Lovelace Day post was intended to raise her to her rightful place.

Cutting edge artists have always looked to advances in science for new materials and techniques. But where our innovations centre on digital media and information technology, the crossover science of the Victorian era was chemistry. We owe today's rich visual culture to the pioneers who mastered the interactions of chemicals, minerals, ceramics, celluloid and light.

Lizzie Le Prince was the daughter of Sarah and Joseph Whitley of Leeds. She trained under Albert-Ernest Carrier-Belleuse at the Sèvres pottery in France, and in 1869 she married Louis Aimé Augustin Le Prince, also a student of pottery. Louis had been instructed by Louis Daguerre, inventor of the Daguerreotype, and specialised in applying photographic techniques to pottery and brass.

The Le Princes settled in England where Louis started work for the Whitley family brass-founding business. It's clear that the marriage was a true partnership. They both

joined the Leeds Philosophical and Literary Society. Together they ran the Leeds Technical School of Art from their townhouse in Park Square, providing training in materials that were literally the new media of their age. Lizzie records that in Park Square Louis began experimenting with "moving photographs" and the best materials for films.

In 1881 the couple moved to New York where Lizzie taught art at the Institute for the Deaf. Louis is said to have projected his first moving pictures on the walls of that building. Lizzie is described as "a splendid helpmate".

In October of 1888, back in Lizzie's parents' garden in Roundhay, was recorded the world's oldest surviving motion picture. The dating is precise because the pictures show Lizzie's mother who died just a few weeks later.

By 1890, the Le Princes were ready to go public with the invention, well ahead of rivals including the Lumière brothers and American Thomas Edison. Lizzie had by this time founded the New York Society of Ceramic Arts and held regular meetings in Manhattan's Jumel Mansion. Assisted by her son Adolphe, she began preparing for a public unveiling in New York. It should have been a grand occasion securing Louis' place in history as the inventor of the cinema.

But Louis never arrived back in New York. He was last seen at Dijon, boarding a train to Paris. Wild rumours surrounded his disappearance and Lizzie suspected foul play. She believed competitors including Edison himself had wanted her husband out of their way.

Lizzie Le Prince spent the following decades in America trying to prove Louis' claim to be the inventor of cinema. Her tragedy was compounded by Adolphe's unexplained death in 1901, shortly before a judge delivered a verdict in favour of Edison's motion picture patent that the Le Prince family had contested.

A number of articles have sought to posthumously restore Le Prince to his rightful place in cinematic history. One of his cameras is in the National Media Museum at Bradford, and Leeds has not one but two blue plaques commemorating him. "Roundhay Garden Scene" is listed in the Guinness Book of Records and can be seen on YouTube. Sarah and Joseph Whitley are the oldest born actors to be credited in the Internet Movie Database.

Fittingly, the wonderful Sydney Padua illustration for Ada Lovelace Day showed the world's first computer programmer in Victorian dress holding up a string of punched cards. Replace those punched cards with a reel of celluloid (the first reel of celluloid!) and you have Lizzie Le Prince.

Should the credit for the first moving pictures really go to a husband and wife team?

24 March 2010
http://wp.me/p1bV4-jT

Reflections on Reading of Mr. Joseph Priestley and M. Antoine Lavoisier While Travelling by Air Plane Between Leeds and Paris

Steven Johnson's book 'The Invention of Air' sparked a delightful reverie on the pivotal role of 18th Century scientist, non-conformist minister and political thinker Joseph Priestley.

Living in Leeds, I was vaguely aware of Joseph Priestley from local museums and the blue plaque at Mill Hill Unitarian Church on City Square. What schoolchild could fail to be impressed by the tale of Priestley inventing fizzy pop after studying the bubbles in a brewers' vat on Meadow Lane? He open-sourced the method, leaving one Johann Schweppe to make a fortune.

But until I picked up Johnson's book I hadn't grasped that Priestley's years in our Northern English city included experiments that shaped scientists' understanding of gases, plant and animal life, and ultimately our planetary ecosystem.

Johnson tells how, after various gruesome experiments resulting in the suffocation of spiders and mice by placing them in sealed containers, Priestley wondered how long it would take a sprig of mint to succumb to the same fate. (Mint grows like a weed in gardens round us!) To his surprise, the mint lived, thrived even. What's more, a flame could be lit in the sealed container, something that had not been possible in the containers where animals had expired.

Priestley wrote of his discovery to his friend Benjamin Franklin who almost at once made the further leap that, "I hope this will give some check to the rage of destroying trees..."

Serendipitously, I read this section of the Invention of Air on one of my increasingly regular flights from Leeds to Paris. Across southern England and the Channel, I was engrossed in Steven Johnson's account of how Priestley made his experimental breakthrough, yet got the explanation wrong. He believed that the animals and flames emitted a noxious substance known as "phlogiston" and identified the gas "mended" by the plants as "dephlogisticated air".

Then, literally as my plane broke through the clouds on the descent to Charles de Gaulle Airport, the action switched to Paris where the English hacker Joseph

Priestley shared his discoveries with French aristocrat Antoine Lavoisier. It was Lavoisier who, after absorbing the implications of Priestley's discovery, proposed a theoretical framework, correctly identified that a gas was used up in burning and respiration, and named that gas oxygen.

The English hacker, the French theorist, the combination of the two in innovation. The thought made my day, so apologies to the various colleagues upon whom I inflicted this convoluted story.

Sadly neither country was eternally grateful: years later Priestley was forced to flee to the United States after a Church and King mob burned down his Birmingham home and laboratory, while Lavoisier was beheaded in the French Revolution.

Many people read while travelling, yet "airport" has become a pejorative term in relation to books. Can someone create a service that helps match reading to travel and create more serendipitous moments like mine?

14 January 2009
http://wp.me/p1bV4-6K

Rev. Dr. Priestley in the Library with the lead type

"Si j'etais bien en fonds, j'achèterais une presse !" – Camille Desmoulins

The role of the printing press as transformational communication technology is so powerful a commonplace that it is frequently invoked as a parallel to the Internet.

We think of it in terms of the spread of ideas, of bibles hitherto copied laboriously by monks now churned out for the newly literate middle classes of the Reformation; of cheap-as-chips chapbooks spreading gossip and popular culture in Pepys' London; and of the great Enlightenment figures, such as Joseph Priestley and Tom Paine, able to disseminate their works of science and politics halfway across the world in a matter of months.

But listening to a lunchtime talk by Geoffrey Forster of the Leeds Library I was struck by another way of thinking about the press, as a tool for group formation and organisation.

Forster is the 18th Leeds Librarian, a role dating back to 1768 when a group of 105 founders, of whom Priestley was the fourth, came together to establish a private subscription library. Each paid a guinea to join, a substantial

sum in those days, but books were dear: a copy of Priestley's 700-page 'The History and Present State of Electricity' could cost as much.

The founding subscribers – Nonconformists, Anglicans, one Roman Catholic, four of them women joining in their own right – modelled their library on that at Liverpool, established 10 years earlier, and were part of a movement that saw subscription libraries spread across the country. They had responded to an advertisement in the Leeds Mercury, a newspaper re-established in the city only the previous year, and the founding 105 were named in a prospectus listing the first titles that the library would acquire.

They set out to accumulate an ever-growing catalogue, buying regularly from a suggestions book kept by Priestley, their secretary. By 1772 they had 1200 volumes at the Kirkgate library. 243 year later there are 140,000 books housed in a purpose-built Victorian building on Commercial Street, above shops whose rents help to finance the library to this day.

In 'The Invention of Air', and latterly 'Where Good Ideas Come From', Steven Johnson tells the story of Priestley's discovery of oxygen, after a chance visit to Jakes and Nell's Brewery on Leeds' Meadow Lane. Priestley chewed over his discoveries with his friend Ben Franklin, who according to Forster almost certainly visited the Kirkgate building, now a branch of Superdrug.

Johnson talks about the importance of leisure-time and literacy in enabling 18th Century geeks like Priestley to develop their ideas, and coffee shops as venues to share them.

To this now I think we should add Forster's theory that the printing press enabled large-scale associations like the Leeds Library to function for the first time.

In a city without a press, someone proposing to start a library had first to attract the interest of fellow citizens. He or she might write letters, laboriously by hand, requesting their attendance at a public meeting. Supposing they could be gathered together, those people would need prospectuses, membership cards, notices and minutes of annual meetings, all things impractical to write out repeatedly in long-hand.

Through its natural associations with booksellers, newspapers and printers, the Leeds Library had ready access to technology to automate all these dull but necessary functions. The press was not just a means to spread ideas; it was an organisation tool through which groups of people could make stuff happen together. In the medium of ink on paper, Joseph Priestley and his fellow citizens were pioneer social networkers.

14 May 2011
http://wp.me/p1bV4-ye

A railway that runs on coal and love

Another guest post on the Culture Vulture blog, this time under the topic 'home tourist,' a bid to get Leeds people exploring their city as if it were new to them.

A hundred years from now will volunteers grease the wheels of lovingly restored lifts in London's Gherkin? Will Chinese children go on trips to ancient factories where their ancestors once assembled iPhones? Will our own descendants thrill to the sounds and smells of recreated call centres and server farms?

If so, I hope they do these things with as much love and wonder as the workers and visitors at the Middleton Railway Trust. For in an unobtrusive building tucked away in south Leeds' motorway tangle you can experience more than 200 years of railway history, or if you prefer, just buy a ticket and ride on a steam train.

Of course other steam railways are also available, and all good at what they do. But the Middleton Railway, successor to the World's first commercially successful steam railway, can also claim to be the first such service to be completely run by volunteers. It's still going strong after 50 years.

As a parent with primary school-aged children, I find the Middleton Railway is just enough train museum – perfect home tourist material. You can go in, buy a proper ticket, and walk through a hall of engines and straight onto the Moor Road platform where the train is waiting to whisk you away to Middleton Park. There, at Park Halt, the engine is uncoupled and hitched back to the other end of the train for the uphill journey home. It's a proper train trip, but not too long: you'll be there and back in half an hour.

My four-year-old liked it so much that we stopped for a snack in the cheap and cheerful cafe and then went back for a second go on the train. For days afterwards he carried his little cardboard ticket everywhere and pestered to have his birthday party on a steam train.

And as a history graduate with an unhealthy obsession over Leeds' industrial heritage, I find a wealth of detail wonderfully presented. There's a map of the city showing how steam engine manufacturing started at Matthew Murray's Round Foundry in Holbeck before migrating to the Jack Lane area of Hunslet. And a map of the world showing how Leeds-built locomotives found their way across the continents. They're also starting to use QR codes to link the static displays to more online information. Lots of possibilities here, I think.

There's an ever-present risk with volunteer-run heritage of a descent into self-indulgence, of convoluted over-in-

terpretation, passive aggressive signage and dotty personal hobbyhorses. The Middleton Railway shows no sign of these – a great return on investment of National Lottery players' cash.

A sign by one of the engines says it all: "Please visit the cab but mind the mucky bits, the oily bits and the sticky-out bits". It's the statement of confident people who care passionately about the museum and its contents, want to share it with the public, and to keep them safe as they do so.

5 April 2011
http://wp.me/p1bV4-xt

Why Didn't Anyone Tell Me There Was A Giant Walking Robot?

What Temple Works needed, Imran Ali tweeted, was a giant robot. As a fan of Miyazaki's Laputa, I thought this sounded quite cool. A few weeks later, I discovered that Leeds already has a giant walking robot. If you're in the area for one of its rare openings to the public I strongly recommend you go and see it. The walking dragline is at St Aidan's Open Cast Coal Site, Astley Lane, Swillington, Leeds, West Yorkshire, LS26 8AL. It is open to visit on a few open days per year, as advertised at http://www.iarecordings.org/dragline/

Meet Oddball, a US-made Bucyrus Erie 1150, which worked the open cast coal mine at St Aidan's, Swillington, near Leeds, until 1983.

Its sheer scale is impressive enough: the largest preserved walking dragline excavator in Western Europe, 1200 tons, the size of 60 double decker buses, apparently.

But the thing is, it walked, the whole thing, backwards, a metre per earth-shaking step, up to a maximum speed of half a mile per hour. Imagine that. Imagine that stomping towards you across an open-cast colliery.

The machine has been saved and maintained by volunteers, the Friends of St Aidan's BE1150 Dragline, who open it as part of the excellent Heritage Open Days series. They'll even let you sit in the driver's seat and have a look around the belly of the beast, which was powered by electricity, and also by the look of the relics left behind, by tea.

The strangest thing is the setting. While Leeds and Bradford retain at least some of their mills and factory buildings, Yorkshire's coal mining heritage has been almost entirely erased from the landscape. Where once the Bucyrus trod, ripping fossil fuel from the ground, we now see lakes, trees, wild flowers and grass.

Teletubbyland itself has appeared from far away, leaving the machine an alien in its own country. Its walking days are over, but it's a joy to know that this robot won't be left to rust.

12 September 2009
http://wp.me/p1bV4-ct