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STEAM AND THE SPEED OF LIGHT (1750 - 1850)

The industrial revolution, the discovery of Japanese ukiyo-e, and photography.

What were the key geopolitical events?

European soldiers, traders and settlers spread tuberculosis, smallpox, and measles across North and South America, devastating Indigenous populations.

In 1763 King George III of Britain declares dominion over the east coast of North America. Settlers became empowered by the enlightened thinking of the likes of Thomas Paine. (He was an English-born activist who advocated for American independence.) In 1776, the **U.S. declared independence**. In 1789, **George Washington** became the first U.S. president.

Thanks to slave trade labour, by 1820 the US had become the world's biggest producer of raw cotton and their economy was growing fast. In 1827 New York passed a state law emancipating slaves. In Canada many slaves had been freed years before. Britain and her colonies followed suit in 1834 with the **Abolition Slavery Act** (although very few slaves remained in Canada by that time.) In 1862, Lincoln issued his Emancipation Proclamation demanding that all American slaves be freed.

In 1828 The Mohawk Institute opened in Brantford, Upper Canada with the goal of assimilating Indigenous children. It was the precursor to the Residential Schools system.

This was a period of inventions, scientific discoveries, new laws, wars and revolutions. The arrival of steam power and the ensuing industrial revolution sent people flocking to large industrial centres. The population of London grew almost ten-fold in the period 1800-1900.

The sudden change from a mostly slow-paced agricultural economy paved the way for a movement of nostalgic Romanticism in Europe. The movement was in part a reaction to society's growing focus on logic, science and progress; and in part inspired by the idealism and heroic behaviour of the French revolutionaries.

Average winter temperatures in Europe and North America dropped by 2°C during **the little ice-age** 1600-1800. The Baltic Sea froze over, as did many of the rivers and lakes in Europe. Winters were bitterly cold and summers were often cool and wet. These conditions led to widespread crop failure, famine, and population decline. Growing sufficient nutritious food was a constant struggle. By 1789 many of King Louis's subjects in France were starving. Hunger and the blatant opulence of the royal court incited **the French Revolution**.

From 1846-49, consecutive potato crops rotted in Irish fields and the resulting **potato famine** led to the deaths of over a million Irish people and an exodus of two million more to England and North America.

In the late 1700's, Scotsman **Alex Mackenzie** made his way across Canada to the mouth of the Fraser River. His path ran close to that of **Captain George Vancouver**, who in 1792 sailed into what he named Burrard Inlet.

What were the key scientific/technological influences?

Louis Watt patented **the steam engine** in 1769. Industrial machine manufacturing and the fabrication of **iron and steel** quickly followed. They brought the age of mass consumption and better transportation by road, rail, and sea.

There were great leaps forward in printing technology: Lithographic printing—invented in 1796 by Alois Senefelder, a German author and actor. This is a form of flat (planographic) offset printing (the inked image is "offset" from a plate to a rubber blanket, then to the printing surface). Like engraving, "litho" is still used for imagery and hand-written text. It is ideal for map-making, prints, etc.

The cast-iron press—invented in 1800 by Lord Stanhope. Easier to use than Gutenberg's wooden press design, it reduced the force required by 90% and allowed printers to double their paper size. New, faster presses still couldn't keep pace with the growing demand.

The steam press—invented in 1814 by Friedrich Koenig for The London Times. It made 1,100 impressions per hour, that allowed newspapers to print more copies and charge less. When **mechanised paper manufacture** arrived, the cost of printing fell even further.

Heliogravure—Inspired by the lithographic printing method, in 1822 French inventor Joseph Niépce developed a process to capture images using a light-sensitive coating on a pewter plate. It was the birth of photography. Niépce shared his discovery with Louis Jacques M. J. Niépce. Niépce died soon after and the daguerreotype, became an overnight commercial success. William Henry Fox Talbot was another important player in early photography, whose technique called the calotype, or talbotype, allowed for shorter exposures than the daguerreotype.

Wooden type—In the early 1800's posters and advertisements were more typographic than illustrative. As posters increased in size, larger type was needed. In 1827, American Darius Wells crafted wooden type that was more practical and cheaper to produce in large sizes.

Chromolithography—This colour printing technique was invented, in 1837, by Godefroy Engelmann, an artist who had studied lithography in Germany. It required a separate stone for each colour used and would end the need to colour prints by hand. That same year, Sam Morse patented the telegraph.

What were the key design and literary influences?

Jobbing printers: Up until the late 1700's, printing had been an expensive and quality craft. As demand grew, cost and quality declined. The process became more automated and increasingly a job for tradesmen (known as jobbing printers.) Hand-crafted, loving printed and bound books became a rarity.



William Blake: the poet, artist and printmaker was an exception to the craftless wave. He created a printing technique he called illuminated printing, that he used in his 1789 poem *The Book of Thel*.

J.J. Grandville (Jean Ignace Isidore Gérard): In the 1800's, opportunities for cartoonists and illustrators were plentiful. Some, like Grandville, used their art as a form of protest against the injustice in the world. Grandville used anthropomorphism to avoid legal repercussions.

William Playfair: The Scottish author and scientist used analytic geometry to convert statistical data into information graphics. Playfair invented the line charts, bar charts and pie charts. (Meggs. p.132)

Firmin Didot: A French printer, engraver and typefounder. Building on the work of Fournier le Jeune, Didot led the evolution to fully **modern (Didone) serif typefaces** in the 1780's and 90's.

Giambattista Bodoni: An Italian typographer, printer and publisher. Following Didot's lead, Bodoni created his own elegant modern serif in 1798. Didot and Bodoni would later become the go-to typefaces of the fashion industry.

Robert Thorne: An English typefounder who created a new category of display type called fat faces, ca. 1803. These were modern roman faces whose thick strokes were greatly exaggerated in proportion to the thins.

Vincent Figgins: An English punch-cutter and typefounder, who invented slab-serif display faces, such as Egiziano Black and Antique, ca. 1810.

William Caslon IV: descendant of the original William Caslon) invented sans serifs (referred to as Gothics in the US), ca. 1816. It was Figgins, not Caslon, who popularised sans-serifs in the early 1830's

Works of illustrative interest: 1790 - Thomas Bewick's *A General History of Quadrupeds*; 1834 - John Gould's *Family of Toucans* with hand-colored lithographs; 1837 - Rodolphe Töpffer's - *Histoire de M. Vieux Bois*, (*The Adventures of Obadiah Oldbuck*); 1844 - J.J. Grandville - *Un Autre Monde*, published over 50 years before H. G. Wells's *The Time Machine*; 1852 - J.J. Grandville - *Scènes de la Vie Privée et Publique des Animaux*

Literature:

Publicly funded education didn't really exist until the mid 1800's. Most people couldn't even sign their own names. As books and newspapers became more accessible, more people learned to read. In 1832, **Charles Knight** publishes Britain's first illustrated weekly paper.

Late 18th Century: *Les Liaisons Dangereuses*, Pierre Choderlos de Laclos; *Songs of Innocence and of Experience*, William Blake; *The Rime of the Ancient Mariner*, poem in seven parts by Samuel Taylor Coleridge.

19th Century: Romantic poetry by Wordsworth, Coleridge, Keats, Byron and Shelley; novels, such as Jane Austin's *Pride and Prejudice*, Sir Walter Scott's *Ivanhoe*, Charlotte Bronte's *Jayne Eyre* and *Wuthering Heights*, Mary Shelley's *Frankenstein*, Charles Dicken's *A Christmas Carol*, Edward Lear's *A Book of Nonsense* (children's nursery rhymes, including the Owl and the Pussycat).

What were the key cultural influences?

1843 - The first **Christmas cards** were commissioned by Sir Henry Cole

Fashion:

Like the type designs of Baskerville and Caslon a simpler, neoclassical elegance was emerging in all areas of art and culture. Rococo gave way to Grecian-style drapery with fluid lines. By the 1850's the width of women's skirts ballooned again, supported by crinolines or hoops.

Architecture:

Neoclassical Period.

Tumenggung Mangundipura, Mustafa Aga, Simeon Kalfa, Christopher Wren, Charles Barry, Augustus Welby Northmore Pugin, Jacques Germain Soufflot, Jean Chalgrin, John Nash, Carl Gotthard Langhans, Thomas Jefferson, Benjamin Latrobe, Charles Bulfinch.

What were the key artistic influences?

This was the era of **Realism**, **Pre-Impressionism**, and the **Pre-Raphaelites**.

18th Century: Francois Boucher, Francesco Guardi, Joshua Reynolds, George Stubbs, Thomas Gainsborough, Jean-Honore Fragonard, Francisco Goya, Jacques-Louis David, William Blake, J. M. W. Turner, John Constable, Jean Auguste Dominique Ingres, John James Audubon, Francisco José de Goya y Lucientes.

19th Century: Camille Corot, Gustave Courbet, Edward Burn-Jones, Camille Pissarro, Edouard Manet, Honore Daumier, Thomas Eakins, William Holman Hunt, Winslow Homer, John Everett Millais, Jean-Francois Millet, Dante Gabriel Rossetti, John Singer Sargent, John William Waterhouse, James McNeill Whistler

Ukiyo-e: woodblock prints become very popular in Japan. Kitagawa Utamaro, Katsushika Hokusai, Hishikawa Moronobu, Okumura Masanobu, Suzuki Harunobu, Kitagawa Utamaro, Katsushika Hokusai, Utagawa (Ando) Hiroshima.

Japanese art took a long time to reach Europe. The end of the Nanban trade period in 1614 marked the beginning of a growing chasm between western and eastern art. In the 17th and 18th centuries, only the Dutch East India Company was allowed to trade with Japan. It was not until the 1800's that the unique woodcut style of Japanese ukiyo-e print-makers made it's way to the art galleries of Paris and London. It forever changed the way European artists perceived their craft.

