

The Republic of Entrepreneurs

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1 Introduction

Ludwig von Mises viewed entrepreneurship as a universal function of human action in a free society. In *Human Action* (1949), he argued that all purposeful decisions made under uncertainty are entrepreneurial by nature. To Mises, entrepreneurship is not restricted to the business world but applies to every individual who acts in pursuit of a goal amidst uncertainty. What distinguishes an entrepreneur in his framework is the capacity to anticipate future conditions and allocate resources efficiently based on that foresight. Mises held that a society built upon strong property rights, liberty, and the rule of law creates the conditions for entrepreneurship to flourish naturally and universally. Everyone can act as an entrepreneur if they have the freedom to act and respond to market signals.

Friedrich Hayek expanded this idea with his theory of spontaneous order, emphasizing the decentralized nature of knowledge in society. In *The Use of Knowledge in Society* (1945), he argued that no single entity can possess all the knowledge needed to make efficient economic decisions. Entrepreneurs, therefore, play a crucial role in using their specific, localized knowledge to make decisions that coordinate activities in the economy. This process happens organically, without central direction, as entrepreneurs adjust their activities based on market signals such as prices. Hayek's view complements Mises' idea of universal entrepreneurship by stressing that anyone, not just a select few, can be entrepreneurial as long as the market system allows for freedom and individual decision-making.

Ronald Coase's work on transaction costs, notably in *The Problem of Social Cost* (1960), added another layer to understanding entrepreneurship. He emphasized that entrepreneurs exist to reduce inefficiencies and transaction costs in economic exchanges. By organizing production and reducing frictions between market participants, entrepreneurs can create value. Coase also highlighted the importance of property rights in allowing entrepreneurial activities to function effectively. Well-defined property rights provide the necessary foundation for individuals to engage in entrepreneurial behavior. In Coase's framework, anyone who identifies and reduces transaction costs acts entrepreneurially, broadening the concept beyond business founders to include anyone improving market efficiency.

Israel Kirzner, in *Competition and Entrepreneurship* (1973), shifted the focus of entrepreneurship from innovation to entrepreneurial alertness. According to Kirzner, entrepreneurs are those who are particularly alert to profit opportunities that others have not noticed. This entrepreneurial function is essential in moving markets toward equilibrium by identifying and correcting inefficiencies. Kirzner's vision of entrepreneurship is inclusive: anyone with the ability to recognize opportunities can be an entrepreneur. Unlike Schumpeter's focus on disruptive innovation, Kirzner emphasized that entrepreneurs need not be inventors; they are simply those who see opportunities to buy low and sell high, correcting market imbalances as they act.

Deirdre McCloskey's works, *The Bourgeois Virtues* (2006), *Bourgeois Dignity* (2010), and *Bourgeois Equality* (2016), added a cultural dimension to entrepreneurship. McCloskey argued that the transformation of society during the Industrial Revolution came not from material factors but from a shift in values toward dignity and liberty for the entrepreneurial class. This respect for entrepreneurs, merchants, and innovators created the conditions for widespread prosperity. In her view, entrepreneurship is not limited to a select few but is a potential activity for everyone in a society that values individual dignity and innovation. For McCloskey, the embrace of bourgeois values enabled ordinary people to engage in entrepreneurial activities, contributing to widespread economic growth.

Edmund Phelps, in *Mass Flourishing* (2013), emphasized grassroots innovation, where ordinary people, not just elites, drive economic dynamism. Phelps argued that widespread innovation and entrepreneurship come from individuals experimenting and improving processes on the ground level, rather than from top-down, elite-driven innovation. He believed that societies with secure property rights, individual liberty, and the rule of law allow for such bottom-up innovation to thrive. Phelps challenged Schumpeter's notion of elite entrepreneurs, arguing that real economic progress comes from the creativity and entrepreneurial spirit of ordinary people. In such an environment, everyone has the potential to innovate and act as an entrepreneur.

In contrast to these thinkers, Joseph Schumpeter viewed entrepreneurship as an elite function. In *The Theory of Economic Development* (1911) and *Capitalism, Socialism, and Democracy* (1942), Schumpeter described entrepreneurs as rare, exceptional individuals who introduce radical innovations that disrupt markets and create new industries. This process, which Schumpeter called creative destruction, leads to the destruction of old industries and the rise of new ones. For Schumpeter, these elite entrepreneurs are the drivers of economic development, and their role is to bring about large-scale transformations rather than the incremental improvements Kirzner or Phelps emphasize. Schumpeter saw innovation as concentrated in a small group of dynamic individuals.

The idea of a republic of entrepreneurs stands in stark contrast to Schumpeter's model of elite entrepreneurship. Mises, Hayek, Coase, Kirzner, McCloskey, and Phelps argue that entrepreneurship is not the domain of a few exceptional individuals but a widespread capability that emerges naturally when individuals have liberty, property rights, and opportunities to act. In such a

society, entrepreneurship arises spontaneously from individuals responding to market signals, discovering opportunities, and innovating in small but meaningful ways. This republic of entrepreneurs is built from the ground up, driven by everyday people rather than a small class of disruptive innovators. It is a system in which everyone has the potential to contribute to economic progress through entrepreneurial activity.

This vision of entrepreneurship is fundamentally different from Schumpeter's focus on the creative destruction led by elites. In the republic of entrepreneurs, innovation is decentralized and continuous, occurring through the small, cumulative efforts of many people rather than through dramatic, disruptive changes introduced by a few. It is a dynamic and inclusive system where individuals are empowered to act as entrepreneurs, regardless of their social standing, provided that the institutional environment supports liberty, property rights, and the rule of law. This framework highlights the role of individual initiative and freedom in fostering widespread economic growth and innovation.

1.1 Schumpeter's view, which emphasized the scarcity of entrepreneurs and assumed that ideas for new products and processes were abundant, misrepresents the historical reality. Entrepreneurs have not only been innovative but also fundamental in reshaping global trade and industry, creating wealth across cultures and societies through transformative ideas, even in traditional industries.

Historically, entrepreneurs have played critical roles in shaping economies by connecting distant markets and fostering cross-cultural trade. For instance, American tobacco and Chinese tea were introduced to Britain not merely because these resources were discovered but because entrepreneurs saw potential and seized it. These individuals organized the transport, marketing, and sale of these goods, establishing robust international trade networks that reshaped consumption habits in Britain and influenced economic growth. Similarly, the spread of Caribbean sugar throughout Europe was driven by entrepreneurs who recognized the demand and worked to establish a trade infrastructure that connected plantations in the Caribbean to markets in Europe.

Looking back at the great commercial powers of Venice, Holland, and Manchu China, we see economies driven by entrepreneurial activity that transcended national borders. Venetian entrepreneurs were pioneers of early globalization, dominating Mediterranean trade routes and fostering a trade network that connected Europe with Asia and North Africa. This network facilitated the flow of goods such as spices, silks, and other valuable resources, which not only enriched Venice but also enabled it to become one of the most powerful states in Europe at the time. Similarly, Dutch merchants and entrepreneurs turned the Netherlands into a global trading powerhouse during the Golden Age. Their enterprise led to the establishment of colonial outposts, innovations in shipbuilding, and

the founding of the Dutch East India Company, which monopolized lucrative trade routes and commodities like spices, tea, and textiles. These initiatives helped the Netherlands attain economic supremacy and a high standard of living relative to other European nations of the period.

Manchu China, under the Qing dynasty, also thrived on the contributions of entrepreneurial figures who reshaped production and trade. While China traditionally held a conservative stance toward commerce, merchants and entrepreneurs found ways to expand trade networks, bringing in foreign goods and exporting products like silk, porcelain, and tea. Arabian horses, for example, were brought into China through trade facilitated by entrepreneurial merchants, symbolizing the interconnectedness of the ancient world and showcasing the entrepreneurial spirit's role in cultural and economic exchange. Such exchanges enriched China and cemented its place in the global economy, as well as spread Chinese goods and culture internationally.

In each of these examples, the scarcity was not in ideas but rather in the individuals willing to take risks, organize resources, and bridge distant markets to turn those ideas into wealth-creating ventures. Schumpeter's notion of "scarcity" overlooks the widespread impact of entrepreneurial activity in pre-industrial societies, where entrepreneurs often found innovative ways to expand markets and enhance trade even in well-established industries.

2 Historical evidence

The early Industrial Revolution in England and Scotland was an unprecedented era of knowledge democratization, where scientific insights and experimental methods spread widely, cultivating a true republic of entrepreneurs. This period saw individuals from all social classes—tradespeople, artisans, factory workers, and even women—engage actively with emerging technologies and contribute to the rapid advancement of industry, laying the groundwork for innovation and social mobility.

Mechanics' libraries, for instance, appeared throughout Britain, especially in industrial centers such as Birmingham, Manchester, and Glasgow. These libraries provided affordable or free access to simplified scientific texts, manuals, and broadsheets, making complex ideas and discoveries accessible to everyday workers. Public lectures and demonstrations were common, held in various venues from town halls and mechanics' institutes to community spaces and pubs, where artisans, apprentices, and skilled laborers gathered to hear about the latest developments in metallurgy, steam technology, and textile production. For example, self-taught ironmaster John Wilkinson, known as the "father of the iron industry," revolutionized cannon and cylinder boring with precision techniques informed by his engagement with mechanics and metallurgy, setting a high standard for the manufacturing processes of his time.

The Industrial Revolution's impact on the working classes went beyond access to information—it fostered a vibrant culture of practical experimentation. Blacksmiths, weavers, and other tradespeople applied scientific principles to im-

prove their methods and increase efficiency. James Hargreaves, a Blackburn weaver, famously invented the spinning jenny, a machine that greatly accelerated textile production. Similarly, Richard Arkwright, a barber from Preston, harnessed water power for textile mills, reshaping the cotton industry with the invention of the water frame. Both Hargreaves and Arkwright exemplify how access to experimental knowledge enabled common tradespeople to drive industrial innovation and entrepreneurship.

Scotland, too, became a fertile ground for entrepreneurial spirit. James Watt, initially an instrument maker at the University of Glasgow, relied on his collaboration with chemist Joseph Black to improve the steam engine using principles of latent heat—a breakthrough that propelled manufacturing processes. Watt’s partnership with industrialists like John Roebuck and later Matthew Boulton expanded his work from workshop experimentation to large-scale production, demonstrating how the synergy between scientific knowledge and practical skills fueled industrial advancement.

The movement wasn’t confined to men; women, despite the barriers of their time, made significant strides as inventors and scientists. Mary Anning, from humble beginnings in Lyme Regis, became a renowned fossil hunter and self-taught paleontologist, whose discoveries helped shape the field of geology. Caroline Herschel, originally her brother’s assistant, identified comets and became a respected astronomer, while Ada Lovelace, a mathematician with a keen understanding of Charles Babbage’s early computing concepts, envisioned the potential for computing algorithms. These women, alongside men of diverse backgrounds, were driven by a shared enthusiasm for learning, experimentation, and innovation.

The Scottish universities, particularly in Glasgow, Edinburgh, Aberdeen, and St. Andrews, were instrumental in spreading modern empirical and practical knowledge to people from all walks of life. Figures like Thomas Telford, an ordinary stonemason turned civil engineer, contributed significantly to British infrastructure with his work on roads, bridges, and canals, epitomizing how education could uplift individuals from modest backgrounds into impactful roles. Similarly, John McAdam, who popularized the revolutionary method of “macadamization” for road surfaces, exemplifies how even common laborers could drive national infrastructure improvements.

In this era, Francis Bacon’s philosophy of public experimentation, adopted and promoted by the Royal Society, played a vital role. Bacon’s idea that empirical knowledge would not only lead to personal understanding but also bring material prosperity inspired generations of tradespeople, artisans, and scientists to engage in scientific inquiry as a path to economic success. This philosophy encouraged a culture where mechanical innovations, such as Watt’s steam engine and Arkwright’s spinning frame, were not merely technical breakthroughs but economic engines that enabled skilled laborers to transform their industries.

The republic of entrepreneurs in early industrial Britain was characterized by an open exchange of ideas, skills, and ambitions, driving innovation across classes. Access to mechanics’ libraries, experimental programs, and industrial communities allowed for the emergence of a unique environment where ordinary

individuals—like John Wilkinson, James Hargreaves, Richard Arkwright, Mary Anning, and others—could influence industrial development and, by extension, the future of British society. Through shared spaces of knowledge and a collaborative spirit of invention, the Industrial Revolution nurtured a truly democratic foundation for entrepreneurship and societal progress.

The American Industrial Revolution, much like its British counterpart, fostered a republic of entrepreneurs, with many common individuals contributing innovations that transformed industry and society. These inventors, often from humble beginnings, seized the opportunities of an expanding industrial landscape, blending hands-on ingenuity with a practical understanding of American market needs. Their contributions, often achieved with minimal resources or formal training, exemplified a uniquely democratic spirit of innovation. Here are some notable figures and their innovations:

1. Eli Whitney: Known as the inventor of the cotton gin in 1793, Whitney was a farm boy from Massachusetts who developed a machine that could separate cotton fibers from seeds 50 times faster than by hand. This innovation revolutionized the cotton industry in the South, fueling textile production and making cotton a cornerstone of the American economy.

2. Cyrus McCormick: Raised in rural Virginia, McCormick came from a family of farmers and blacksmiths. In 1831, he invented the mechanical reaper, a machine that could harvest wheat far more efficiently than manual labor. McCormick's invention was a crucial innovation for agriculture, allowing farmers to dramatically increase production and reduce labor costs.

3. Samuel Morse: Born to a modest New England family, Morse was a portrait painter before he invented the telegraph and Morse code. His telegraph system, patented in 1844, made long-distance communication instantaneous and laid the foundation for modern communication networks, linking cities, towns, and eventually entire nations in a vast web of information exchange.

4. Isaac Singer: A mechanic and former theater actor, Singer patented a practical sewing machine in 1851. Unlike previous sewing machines, Singer's design was user-friendly and adaptable for mass production. He also pioneered installment payments, making his machines accessible to a broader market. Singer's sewing machines revolutionized the garment industry, transforming home and factory-based sewing and contributing significantly to industrial growth.

5. Thomas Edison: Perhaps one of the most famous inventors of the American Industrial Revolution, Edison's journey from a poor family in Ohio to becoming the "Wizard of Menlo Park" exemplifies the entrepreneurial spirit of the era. His invention of the practical electric light bulb in 1879, along with numerous other innovations in electricity and motion pictures, reshaped industries and the American lifestyle. Edison's use of a large, collaborative research lab model for invention also influenced the future of research and development.

6. Alexander Graham Bell: A Scottish immigrant, Bell initially worked as a teacher for the deaf before developing his interest in communication devices. In 1876, he patented the telephone, a device that would transform both business and personal communication across the globe. Bell's invention, supported

by his company Bell Telephone, helped lay the infrastructure for the modern telecommunications industry.

7. George Westinghouse: Starting his career as an army engineer, Westinghouse made a name for himself by inventing the railway air brake in 1869, which allowed trains to stop safely and quickly, improving safety and efficiency in rail transport. Later, Westinghouse became a key figure in the spread of alternating current (AC) electrical systems, which competed with Edison's direct current (DC) systems and eventually became the standard for electric power transmission.

8. John Deere: A blacksmith from Vermont, Deere developed a polished steel plow in 1837, ideal for the tough soil of the American Midwest, where traditional wooden plows were ineffective. His innovation greatly improved agricultural efficiency and contributed to the development of large-scale farming in the Midwest, laying the foundation for modern American agriculture.

9. Granville Woods: Known as the "Black Edison," Woods was a self-taught African-American inventor who grew up in Ohio. He developed numerous devices for the railway system, including the induction telegraph in 1887, which allowed train conductors to communicate wirelessly. Woods' work contributed to improved safety and efficiency in railway operations and highlighted the contributions of African Americans to American industry during a period when they faced substantial social and economic barriers.

10. Lewis Latimer: Born to parents who were escaped slaves, Latimer worked closely with Edison and other inventors of the time. His contributions to the lightbulb's carbon filament made electric lighting more affordable and durable, helping to popularize its use. Latimer was one of the few African American inventors recognized in his day and played a crucial role in advancing electrical lighting systems.

11. Madam C.J. Walker: One of the first female African-American self-made millionaires, Walker built a cosmetics empire in the early 20th century. She developed hair care products specifically for African-American women and established a network of sales agents, effectively creating one of the earliest examples of a door-to-door sales model for beauty products.

12. Henry Ford: While Ford came from a relatively modest farming background in Michigan, he changed American industry forever with his Model T automobile in 1908 and the perfection of assembly line production. Ford's affordable automobile and efficient production method brought car ownership to the average American family, reshaping transportation and manufacturing.

These entrepreneurs demonstrate how common people could access knowledge and leverage it into groundbreaking innovation, largely due to the availability of public education, self-study materials, technical manuals, and a growing network of industrial communities that fostered collaboration and competition. Public libraries, lyceums, and scientific societies in urban centers like Boston, New York, and Philadelphia provided access to the latest scientific and technical knowledge. This culture of self-improvement and ingenuity, supported by a robust network of artisans, inventors, and financiers, laid the foundation for America's rapid industrial expansion and positioned the United States as a

global leader in technological innovation.

The American Industrial Revolution was thus more than a technological transformation; it was a social revolution, rooted in the idea that innovation could come from any individual, regardless of background. The result was a republic of entrepreneurs that epitomized the democratic spirit of opportunity and economic progress.

In France, the Industrial Revolution was shaped not only by elite scientists and industrialists but also by a vibrant republic of entrepreneurs from common and lower-class backgrounds. These grassroots innovators, through practical ingenuity and relentless pursuit of improvement, significantly contributed to various industries, leaving a lasting impact on French industrial progress. Here are some notable names and their contributions:

1. Jacques Vaucanson: Born to a poor family in Grenoble, Vaucanson became a skilled inventor without formal training. In the early 18th century, he created mechanical automata, including the famous “Digesting Duck,” which mimicked animal digestion processes, showcasing his innovative mechanical skills. His inventions laid the groundwork for future developments in automata and contributed to the early ideas of automation in manufacturing.

2. Joseph-Marie Jacquard: The son of a Lyonnais silk weaver, Jacquard rose from humble beginnings to revolutionize textile production in 1804 with his Jacquard loom, a device that used punched cards to control weaving patterns automatically. This invention dramatically reduced labor in textile manufacturing and allowed for complex designs to be mass-produced, ultimately influencing not just textiles but the early development of programmable machines, a foundation for modern computing.

3. Nicolas Appert: A chef and confectioner from a modest background, Appert pioneered food preservation methods, inventing the technique of canning in 1809. He sealed food in glass jars, which he then boiled to kill bacteria, greatly extending shelf life. This innovation proved essential for food security, especially for military supplies, and laid the foundation for modern food preservation methods. Appert’s method became known internationally and remains a fundamental aspect of food science.

4. Jean-Baptiste André Godin: A blacksmith and stove maker from humble beginnings, Godin developed the cast-iron stove in 1840, known as the “Godin stove,” which was more efficient and affordable than traditional wood stoves. He later founded the Familistère, a workers’ cooperative community, providing housing, education, and health services for his employees, embodying a progressive model of social entrepreneurship that influenced the cooperative movement in Europe.

5. Claude Chappe: Born to a lower-middle-class family, Chappe invented the optical telegraph, or semaphore, in the late 18th century. This system of signaling through a network of towers allowed messages to be transmitted rapidly over long distances. It was widely used during the Napoleonic Wars and represented one of the first forms of telecommunication, dramatically improving governmental and military communication across France.

6. Jean Lenoir: Originally a mechanic from a modest background, Lenoir

invented the first commercially successful internal combustion engine in 1859. His gas engine powered by a mixture of coal gas and air became a precursor to modern combustion engines. Lenoir's work in making engines more accessible to different industries paved the way for transportation innovations and the eventual development of automobiles.

7. Éleuthère Irénée du Pont: Originally a member of the lower nobility, du Pont emigrated from revolutionary France to the United States, where he applied his knowledge of gunpowder manufacturing learned from common artisans in France. His innovations in powder manufacturing led to the founding of DuPont, which became a leading explosives and chemical company. His contributions helped establish safer and more efficient production methods, setting standards for the industry.

8. Pierre-François Pascal Guerlain: Coming from modest means, Guerlain became a perfume maker in 1828. His dedication to developing new fragrances and cosmetic formulas led to his success as one of France's premier perfumers, and he gained a loyal following among the French elite, including royalty. His work in fragrance chemistry was groundbreaking, laying the foundations for the modern luxury perfume industry and elevating France's status in this field.

9. Léon Serpollet: From a working-class family, Serpollet innovated in steam power, developing a flash steam generator in the 1880s. His invention allowed for lighter and more efficient steam-powered vehicles, which led to the production of early steam cars. Serpollet's contributions highlighted the potential for steam in transportation and provided an alternative to internal combustion engines in the early automotive industry.

10. Alexandre-Ferdinand Godefroy: Known for inventing the first "hair dryer" in 1888, Godefroy's creation was essentially a hooded dryer attached to a gas stove, which allowed beauty salons to provide faster hair-drying services. Godefroy's device quickly became popular in salons and transformed hair care practices, demonstrating that even small-scale innovations from common artisans could have a profound cultural impact.

11. Louis and Auguste Lumière: Although not from the lowest social classes, the Lumière brothers made film and cinema accessible to the public by inventing the cinématographe in the late 19th century. Their invention was more portable and user-friendly than earlier motion picture cameras, helping to democratize filmmaking and making them pioneers of modern cinema.

12. Pierre Michaux: Originally a blacksmith in Paris, Michaux is credited with creating the first pedal bicycle, or velocipede, in the 1860s. His innovation laid the foundation for the modern bicycle and initiated a wave of interest in personal transport. Michaux's work popularized cycling as a mode of transport and leisure across Europe and the United States.

These inventors and entrepreneurs demonstrate that the French Industrial Revolution was not solely driven by elites but was fueled by contributions from ordinary individuals who engaged in practical, grassroots innovation. Their creations transformed industries and everyday life, proving that innovation was not bound by social class but rather by opportunity, creativity, and dedication. Access to mechanics' societies, vocational training, and technical journals played

a role in empowering these inventors, establishing France as a major player in technological progress during this transformative period.

The German Industrial Revolution, like its counterparts in Britain and France, was characterized by notable contributions from entrepreneurs and inventors from modest backgrounds. These individuals harnessed practical knowledge, mechanical skills, and innovative ideas, helping to shape the trajectory of German industry and establish it as a global powerhouse. Here are some key examples:

1. Friedrich Krupp: Hailing from a humble family, Friedrich Krupp started a small steel company in 1811, specializing in cast steel production. His son, Alfred Krupp, expanded the business, developing advanced methods of steel casting and producing high-quality steel products. Krupp's innovations in steel production made the company a cornerstone of the German economy and a critical supplier to Germany's railway and arms industries, becoming a model for heavy industry worldwide.

2. Siemens Brothers: Werner von Siemens and his brothers, Carl and Wilhelm, were of modest rural origins and gained technical education through apprenticeships and self-study. They founded Siemens & Halske in 1847, focusing on telegraph technology. Werner invented the pointer telegraph and later expanded into electrical engineering, establishing Siemens as a pioneering company in electrical applications, railways, and telecommunications. Siemens' work marked a turning point for German and global electrical industries, demonstrating the impact of skilled, practical innovation.

3. Carl Zeiss: Initially a humble mechanic and instrument maker, Carl Zeiss founded an optical workshop in Jena in 1846. With the assistance of Ernst Abbe, a physicist, Zeiss developed advanced microscopes and optical instruments that became essential tools for scientific research and industrial applications. The Zeiss workshop established Jena as a global center for optics and served as an early example of the collaboration between science and industry, critical to the German model of industrial innovation.

4. Friedrich Bayer: Originally a dyer, Friedrich Bayer began experimenting with chemical dyes in 1863, founding what would become the Bayer Corporation. Bayer's early production of synthetic dyes led to the development of aspirin and various pharmaceuticals, establishing the German chemical industry's dominance and showing how practical knowledge from craft trades could foster large-scale innovation.

5. Wilhelm Röntgen: While from a slightly higher social background, Röntgen's discovery of X-rays in 1895 is a prime example of practical experimentation yielding profound advances. His discovery revolutionized medical diagnostics and bolstered Germany's reputation in scientific research. Röntgen's work on X-rays underscores the contributions of hands-on, experimental science to practical applications and commercial growth, further bridging the gap between academia and industry.

6. Heinrich Lanz: A farmer's son who became an engineer, Lanz founded Heinrich Lanz AG in 1859 to manufacture agricultural equipment, including the steam-powered threshing machine and the Lanz Bulldog tractor. Lanz's afford-

able and reliable machinery had a transformative impact on German agriculture, increasing productivity and setting the stage for further agricultural mechanization. His work exemplified grassroots engineering and laid the groundwork for mechanized farming.

7. Gottlieb Daimler and Wilhelm Maybach: Daimler, initially trained as a gunsmith, teamed up with Maybach, who came from a family of humble means, to develop the first high-speed gasoline engine in the late 19th century. This engine, adaptable to both automobiles and boats, revolutionized transportation. Their Daimler Motoren Gesellschaft (DMG) produced some of the world's first motorcycles and automobiles, leading Germany to the forefront of automotive technology.

8. August Borsig: Born to a blacksmith, Borsig became a pivotal figure in German railway engineering by establishing his own locomotive factory in Berlin in 1837. His steam locomotives became renowned for their efficiency and durability, and his company became the largest locomotive manufacturer in Europe. Borsig's work contributed significantly to the expansion of Germany's railway network, which was essential for industrial growth and national unification.

9. Hugo Stinnes: Stinnes, the son of a miller, became an influential industrialist and entrepreneur, developing an extensive network of coal mines, power plants, and shipping companies by the late 19th century. His innovative business model of vertical integration and his control over various sectors, including coal and steel, played a crucial role in establishing Germany's coal and steel industries and enhancing the nation's self-sufficiency in industrial resources.

10. Friedrich Engels: Though famous for his political theory, Engels also had a significant impact as an industrial innovator. The son of a textile mill owner, Engels improved the efficiency of textile manufacturing through mechanized looms and organizational reforms in family-owned mills. His firsthand experience in Manchester's industrial sector gave him insights into worker conditions and technological innovations, which he later incorporated into his political writings.

11. Clara Immerwahr: A chemist and pacifist from a modest background, Immerwahr made significant contributions to chemistry and is remembered for her stance against the misuse of chemical research in warfare. Though her achievements were overshadowed by her husband, Fritz Haber, her focus on ethical science and the application of chemistry to improve everyday life influenced the next generation of scientists in Germany, especially women pursuing scientific careers.

12. Johann Philipp Reis: A schoolteacher and amateur scientist, Reis is credited with developing one of the first telephones in the 1860s, demonstrating the possibility of voice transmission over a wire. Though less commercially successful than Alexander Graham Bell's telephone, Reis's device showed the innovative potential of grassroots experimentation in telecommunications.

These common and lower-class German entrepreneurs demonstrate that Germany's Industrial Revolution was not solely a top-down phenomenon but rather a dynamic period fueled by ingenuity across the social spectrum. With support from technical societies, educational institutions, and state initiatives that

encouraged industrial science, these individuals made breakthroughs that established Germany as a world leader in science, engineering, and manufacturing. Through their tenacity and resourcefulness, these grassroots entrepreneurs helped drive industrial and scientific progress, epitomizing the spirit of the republic of entrepreneurs in Germany.

During the Industrial Revolutions in Britain, the United States, France, and Germany, numerous individuals from upper-class backgrounds played significant roles in the republic of entrepreneurs. Many of these figures leveraged family wealth, education, and social connections to make transformative contributions, pioneering industries, supporting technological innovation, and fostering economic growth. Here's a detailed look at key upper-class entrepreneurs from each of these countries:

Britain

1. Richard Arkwright: Often called the "Father of the Industrial Revolution," Arkwright came from a relatively modest background but rose to prominence through entrepreneurial skill, aligning himself with wealthy investors. He invented the water frame, a major innovation in textile manufacturing that transformed the cotton industry.

2. James Watt: Although Watt was originally from a middle-class background, his partnerships with influential industrialists like Matthew Boulton—a prominent manufacturer and wealthy entrepreneur—helped him establish Watt's steam engine as a cornerstone of the Industrial Revolution. Boulton's wealth and social influence were critical in commercializing Watt's innovations.

3. Isambard Kingdom Brunel: The son of a renowned engineer, Marc Isambard Brunel, Brunel had the social and financial backing to pursue large-scale engineering projects. Known for projects like the Great Western Railway and the Clifton Suspension Bridge, Brunel utilized his family's connections and capital to push the boundaries of British engineering.

4. George and Robert Stephenson: George Stephenson, a self-made engineer, partnered with upper-class investors to develop his pioneering locomotives. His son, Robert, built on this legacy with influential designs, benefiting from both the social connections and wealth that George had amassed.

5. Charles Tennant: A successful chemical manufacturer, Tennant leveraged his family's wealth and social position to found a chemical works company that played a pivotal role in the production of bleach and other industrial chemicals. His innovations helped revolutionize the British textile and paper industries.

United States

1. Andrew Carnegie: Although Carnegie rose from a poor background, by the time he established Carnegie Steel, he was firmly entrenched in the upper class. Carnegie used his wealth to dominate the steel industry and later championed philanthropy, investing in education, libraries, and research institutions.

2. J.P. Morgan: Born into a wealthy banking family, Morgan utilized his financial acumen and social status to establish J.P. Morgan & Co. and become a leading figure in American finance. He played a central role in consolidating industries, including steel and railroads, and financing other major entrepreneurs.

3. Cornelius Vanderbilt: Although Vanderbilt began his career from humble

beginnings, he amassed substantial wealth through his steamboat and railroad enterprises. By the mid-19th century, he became a powerful figure, shaping the railroad industry and using his wealth to exert influence over national infrastructure development.

4. John D. Rockefeller: Rockefeller leveraged his resources and social position to establish Standard Oil, which became the dominant force in the U.S. oil industry. His wealth and networks enabled him to monopolize the industry and later contribute to medical and educational institutions.

5. Henry Ford: While Ford's origins were middle-class, by the time he developed the Ford Motor Company, he had joined the ranks of the upper class. Ford revolutionized manufacturing through the assembly line, profoundly impacting the automotive industry and labor practices.

France

1. Émile and Isaac Péreire: Born into a wealthy family of financiers, the Péreire brothers used their resources to found France's first modern bank, *Crédit Mobilier*, and funded industrial projects like railways, mines, and urban development. Their financial networks greatly impacted France's economic modernization.

2. Henri de Saint-Simon: An aristocrat and social philosopher, Saint-Simon advocated for industrialism as a progressive force. His ideas inspired future French entrepreneurs and technocrats, promoting the use of capital and industrial know-how to improve society.

3. Eugène Schneider: Schneider, an industrialist with upper-class roots, took over a failing ironworks in Le Creusot and turned it into a premier steel and arms manufacturing facility in France. His company played a central role in France's industrial and military development.

4. Paulin Talabot: Talabot, an engineer and businessman, used his aristocratic background and wealth to pioneer railroads in France, such as the Paris-Lyon and Mediterranean line. His influence extended to water and mining ventures, making him a major figure in French infrastructure.

5. François Guizot: While better known as a statesman and historian, Guizot used his wealth and influence to promote railways and industrial policy. His legislative initiatives helped lay the groundwork for French industrial growth, though he personally did not operate businesses.

Germany

1. Alfred Krupp: Krupp came from a well-established family of industrialists, using his family's resources to expand the Krupp steel empire. Known as the "Cannon King," he played a vital role in advancing Germany's steel industry, particularly in armaments, and his family's wealth allowed him to pursue large-scale innovation.

2. Carl von Siemens: The Siemens family, including Carl, used its wealth to found *Siemens & Halske*, which became Germany's premier electrical engineering firm. Carl and his brothers' social status allowed them to secure contracts with the German state, making Siemens a leader in telecommunication and electrification.

3. Hugo Stinnes: Coming from a well-to-do family, Stinnes utilized his wealth to build a business empire in coal, steel, and shipping. His investments in multiple sectors helped consolidate German industrial power during the early 20th century.

4. August Thyssen: The Thyssen family wealth enabled August to establish one of Germany's leading steel companies. Thyssen's resources allowed him to expand rapidly, becoming a powerful figure in German heavy industry and contributing to its reputation as a manufacturing powerhouse.

5. Walter Rathenau: As the son of Emil Rathenau, founder of AEG, Walter Rathenau had the capital and connections to expand AEG into a leader in electrical engineering and manufacturing. His influence extended into public policy, and he became an advocate for German industrial modernization.

Impact and Legacy of Upper-Class Entrepreneurs in the Industrial Revolution

The contributions of these upper-class entrepreneurs across Britain, the United States, France, and Germany reflect their ability to harness wealth, connections, and education to advance industrial development. Their investments in infrastructure, technological innovation, and industrial manufacturing shaped the course of the Industrial Revolution in each of their nations, creating powerful industrial empires. By investing in key technologies such as steam engines, railroads, telecommunication, and steel production, they played a critical role in transforming economies and set the stage for modern capitalism.

Their influence extended beyond economic spheres, as they often impacted public policy, social institutions, and philanthropy. Figures like Carnegie, who devoted much of his fortune to libraries and educational institutions, and Rockefeller, who invested in medical and scientific research, exemplified how upper-class wealth from industrial success could be reinvested into society. In many cases, these industrial titans built legacies that are still felt in their respective countries' economic and social landscapes today.

Their wealth and elite status granted them access to resources and opportunities that were typically unavailable to the average citizen, yet their endeavors often required collaboration with skilled workers, engineers, and other entrepreneurs from diverse backgrounds. This cross-pollination of ideas and efforts among classes contributed to the Industrial Revolution's success, marking a unique period where upper-class ambitions aligned with broader economic progress and industrial innovation.

3 The theory of a republic of entrepreneurs, as developed by thinkers such as Ludwig von Mises, Friedrich Hayek, Israel Kirzner, Ronald Coase, Deirdre McCloskey, and Edmund Phelps, posits that entrepreneurship and innovation emerge spontaneously when the right institutional conditions—property rights, liberty, individualism, and the rule of law—are in place. In such a framework, innovation is not directed from above but arises from the decentralized, dynamic efforts of individuals across society. This approach contrasts sharply with state-guided innovation, where governments attempt to centrally plan and steer entrepreneurial activities. According to the republic of entrepreneurs theory, state-guided innovations are doomed to fail for several reasons, which can be explained in detail through the lenses of knowledge theory, incentives, and institutional inefficiencies.

1. Knowledge Problem and Decentralization (Hayek and Mises)

Friedrich Hayek and Ludwig von Mises both highlighted the inherent problem with centralized decision-making in their works on economics and social theory. Hayek, in *The Use of Knowledge in Society* (1945), famously argued that knowledge in society is decentralized and that no central authority can possess the dispersed, localized, and tacit knowledge required to make efficient decisions for an entire economy. Entrepreneurs operate within markets by leveraging specific, contextual knowledge that is not accessible to central planners. State-guided innovation, by contrast, relies on centralized decision-making, where a small group of bureaucrats or government officials attempts to dictate the direction of innovation.

Why state-guided innovation fails: The knowledge needed for successful innovation—market demands, consumer preferences, technological opportunities—is spread across countless individuals. When the state directs innovation, it cannot access this dispersed knowledge, leading to inefficient allocation of resources and often misguided investments. State officials may miss emerging market trends or consumer needs, investing in projects that do not meet the real de-

mands of the economy. In a republic of entrepreneurs, innovation is more likely to succeed because it emerges from individuals who are close to the relevant market signals and can respond flexibly to changing conditions.

2. Incentives and Market Signals (Kirzner and Coase)

Israel Kirzner, with his theory of entrepreneurial alertness, argued that entrepreneurs are continuously on the lookout for opportunities that others have not yet noticed. These entrepreneurs act on profit signals and inefficiencies in the market, discovering new ways to meet consumer needs and improve processes. Ronald Coase, in *The Problem of Social Cost* (1960), emphasized that entrepreneurs are driven by the profit-and-loss mechanism of the market, which provides a clear incentive for efficiency. In a market economy, entrepreneurs are rewarded when they succeed and penalized when they fail, ensuring that only the most effective innovations survive.

Why state-guided innovation fails: State-guided innovation distorts these market incentives. When governments fund and direct innovation, the normal feedback mechanisms of profit and loss are disrupted. Government bureaucrats, unlike entrepreneurs, are not subject to the same competitive pressures. Projects may continue receiving funding even when they are inefficient or unproductive because political or bureaucratic interests override market signals. Without the discipline of the market, state-led projects often become bloated, wasteful, and less responsive to consumer needs. In contrast, a republic of entrepreneurs ensures that only successful innovations thrive, as market competition naturally weeds out inefficient ventures.

3. Innovation as a Discovery Process (Kirzner and Phelps)

Kirzner's work emphasized that entrepreneurship is fundamentally a process of discovery, where individuals, through trial and error, uncover opportunities that were previously unknown. Edmund Phelps, in *Mass Flourishing* (2013), highlighted the importance of grassroots innovation, arguing that much of the economic dynamism in a society comes from the small, incremental innovations of ordinary individuals. These individuals experiment, take risks, and develop new products or processes that contribute to overall economic growth.

Why state-guided innovation fails: State-guided innovation often attempts to predetermine the outcomes of innovation, focusing on specific industries or technologies deemed strategically important. However, the innovation process is inherently uncertain, and many breakthroughs come from unexpected sources or industries. By directing resources toward specific, government-chosen areas, the state stifles the experimentation and discovery process that characterizes a vibrant entrepreneurial environment. In a republic of entrepreneurs, innovation is the result of many small, decentralized discoveries, where individuals are free to explore a wide variety of possibilities without top-down restrictions.

4. Lack of Entrepreneurial Motivation (McCloskey and Phelps)

Deirdre McCloskey, in *Bourgeois Dignity*, argued that innovation and entrepreneurship flourish when individuals are granted dignity and liberty—the recognition and respect for their ability to create, innovate, and succeed. Similarly, Edmund Phelps emphasized the role of individual motivation in fostering innovation. Innovation is often driven by personal ambition, creativity, and the

desire to improve one's condition, rather than by external direction or bureaucratic mandates.

Why state-guided innovation fails: State-led initiatives often lack the personal motivation and creativity that drive successful entrepreneurship. When innovation is directed by the state, it is typically carried out by bureaucrats or government-backed firms that may have less personal stake in the success of the project. The lack of skin in the game diminishes the drive to innovate. In a republic of entrepreneurs, individuals are motivated by the potential for personal success and recognition, leading to a more vibrant and dynamic culture of innovation.

5. Creative Destruction and Market Dynamism (Schumpeter and Phelps)

Joseph Schumpeter's concept of creative destruction emphasized that innovation often disrupts existing industries, replacing outdated technologies and business models with new ones. Edmund Phelps extended this idea, arguing that a dynamic, grassroots innovation process is essential for long-term economic growth. In a free market, entrepreneurs are constantly challenging the status quo, leading to continuous economic transformation.

Why state-guided innovation fails: Government-directed innovation often resists the process of creative destruction. State-backed industries and projects may receive continued support even when they are no longer competitive or innovative, preventing the economy from evolving naturally. This resistance to change stifles the entrepreneurial dynamism that characterizes a republic of entrepreneurs. In a free market, entrepreneurs constantly introduce new ideas that challenge and replace outdated industries, ensuring continuous economic progress.

6. Bureaucratic Inefficiencies and Rent-Seeking (Baumol)

William Baumol, in *Entrepreneurship: Productive, Unproductive, and Destructive* (1990), highlighted the potential for unproductive entrepreneurship in systems where rent-seeking behavior—lobbying for government favors or subsidies—dominates over value creation. In state-guided systems, entrepreneurs may focus more on securing government contracts or political favors than on creating real innovations.

Why state-guided innovation fails: In a system where the state directs innovation, there is a high risk that resources will be allocated based on political considerations rather than market efficiency. Entrepreneurs may divert their efforts toward lobbying or securing state funding rather than engaging in productive innovation. This creates an environment where unproductive or even destructive entrepreneurship flourishes, undermining long-term economic growth. In contrast, a republic of entrepreneurs relies on market competition to direct resources toward productive, value-creating activities.

7. Failure to Adapt to Market Needs

In a state-guided innovation system, decisions about which technologies or industries to support are often made through political processes, which are slower and less adaptable than market mechanisms. As a result, government-backed projects may fail to respond to rapidly changing market conditions or consumer preferences.

Why state-guided innovation fails: The pace of technological change and consumer demand in a modern economy is rapid, and innovation needs to be flexible to respond to these shifts. State-guided innovation often locks in resources to projects that may become obsolete by the time they are completed. In a republic of entrepreneurs, the market constantly reallocates resources based on the latest information, ensuring that innovation stays aligned with consumer needs and technological advancements.

8. Stifling of Competition and Monopolization

Government-backed innovation often leads to monopolistic structures where a few large firms, heavily supported by the state, dominate entire sectors. This stifles competition and prevents smaller, more dynamic entrepreneurs from entering the market and introducing innovations.

Why state-guided innovation fails: Without competition, the incentives for continuous improvement and innovation diminish. Large, state-backed firms may focus more on maintaining their privileged position than on pushing the boundaries of innovation. In a republic of entrepreneurs, competition drives innovation, as entrepreneurs constantly strive to outdo one another, leading to better products, services, and technologies.

9. Moral Hazard and Risk Misallocation

When the government directs innovation, there is often a moral hazard problem where firms take on excessive risk because they know that the state will back them in case of failure. This leads to a misallocation of risk, with state-backed projects taking on risks that would be unsustainable in a purely market-driven context.

Why state-guided innovation fails: In a republic of entrepreneurs, firms must carefully balance risk and reward because failure carries significant consequences. This encourages prudent risk-taking and ensures that only the most viable projects receive investment. In contrast, state-backed projects may engage in reckless innovation efforts because the government bears the financial burden of failure, leading to inefficient use of resources and failed innovations.

- 4 The concept of a republic of entrepreneurs closely mirrors the intellectual traditions of the republic of letters and the republic of science, both of which emerged as frameworks for the free, decentralized exchange of ideas and knowledge. In the republic of letters, scholars across Europe engaged in a free-flowing, voluntary collaboration of ideas, unbound by national or political constraints. Similarly, the republic of science, as articulated by Michael Polanyi, emphasizes the self-coordination of independent scientists who advance knowledge without central direction, guided by shared professional standards and mutual respect for intellectual freedom.

The Republic of Letters and the Republic of Science

- The republic of letters was a loosely organized intellectual community that flourished in the 17th and 18th centuries, primarily consisting of writers, philosophers, and scholars who exchanged ideas across borders through letters and publications. The key feature of this republic was its decentralized, voluntary, and spontaneous collaboration, free from direct state intervention. The shared goal was the pursuit of knowledge and the improvement of humanity, where ideas moved freely, unconstrained by political or institutional hierarchies.

- Similarly, Michael Polanyi's republic of science emphasized that scientific progress thrives in an environment where researchers are free to choose their own problems and collaborate across disciplines. This freedom fosters innovation because it allows scientists to adjust their research based on new discoveries made by others, in a process Polanyi compared to market-like spontaneous coordination. The pursuit of knowledge, driven by internal motivation and professional standards, occurs naturally when scientists are not directed by state mandates or central authorities.

The Republic of Entrepreneurs

The republic of entrepreneurs, as envisioned by thinkers like Mises, Hayek, Kirzner, and Phelps, operates on similar principles. It proposes a decentralized economy where individuals are free to pursue entrepreneurial activities, guided by market signals rather than government direction. In such a system, individuals act as entrepreneurs by identifying and seizing opportunities, often building on each other's ideas and innovations, just as intellectuals in the republic of

letters or scientists in the republic of science build on each other’s findings. The coordination of entrepreneurial efforts happens organically through the market, driven by incentives such as profit and loss, without the need for a central planner to dictate where resources should be allocated.

Key Features and Differences from State-Led Models

1. **Decentralization:** Both the republic of science and the republic of entrepreneurs emphasize decentralization. In science, discoveries are made as independent initiatives interact spontaneously. In entrepreneurship, market signals such as prices guide individuals in resource allocation, allowing a vast array of small decisions to contribute to overall economic coordination. This stands in contrast to state-guided innovation models, which rely on central authorities to direct resources and set priorities, often leading to inefficiencies due to the knowledge problem described by Hayek.

2. **Spontaneous Order:** Like the coordination of ideas in the republic of letters or the coordination of research in the republic of science, entrepreneurship in a free market leads to a spontaneous order. This means that the actions of individuals, while not planned, contribute to a greater collective good. Each entrepreneur, motivated by self-interest, inadvertently contributes to market efficiency, innovation, and wealth creation. This mirrors Adam Smith’s invisible hand, where individuals pursuing personal gains unintentionally benefit society.

3. **Self-Governance by Principles:** In the republic of science, the scientific community is self-regulated by principles such as peer review and adherence to professional standards. In the republic of entrepreneurs, market principles such as competition, consumer preferences, and profit-loss signals regulate the behavior of entrepreneurs. This self-regulation is far more efficient than state-imposed controls because it allows for flexibility, adaptation, and continuous improvement based on real-world feedback.

4. **Freedom and Innovation:** Both republics thrive on freedom—freedom of thought in the case of the republic of letters and republic of science, and freedom of action in the case of the republic of entrepreneurs. Innovation is stifled when freedom is constrained by central authority, whether it’s state control over scientific research or government-directed economic planning. In both cases, innovation is most likely to emerge when individuals are free to explore, experiment, and fail without fear of state interference or punishment.

Why State-Guided Innovation Fails

State-guided innovation often seeks to control and direct entrepreneurial efforts, much like governments have attempted to control scientific or intellectual output in the past. This approach is flawed because it limits the decentralized, spontaneous nature of innovation and entrepreneurship. By attempting to impose top-down control, governments fail to recognize that innovation thrives on experimentation, freedom, and competition, which cannot be predicted or dictated by central authorities.

In a state-guided system, the absence of competition, combined with bureaucratic inefficiencies and political favoritism, leads to misallocation of resources and stifles creativity. In contrast, a republic of entrepreneurs allows for continuous, bottom-up innovation. Entrepreneurs, much like scientists, follow their

instincts, market signals, and creative ideas, often building on the work of others in a decentralized manner. In this sense, a republic of entrepreneurs is an open system that mirrors the republic of science—both are driven by individual initiative and guided by general principles of liberty, property rights, and the rule of law.

Conclusion

The republic of entrepreneurs shares fundamental similarities with the republic of letters and the republic of science. All three republics thrive on decentralization, individual freedom, and spontaneous coordination rather than top-down control. While state-guided innovation is doomed to fail due to inefficiencies in centralized decision-making, the republic of entrepreneurs allows innovation and entrepreneurship to flourish naturally, driven by the knowledge, creativity, and initiative of individuals.

5 Government-led industrial policies are often doomed to fail due to fundamental issues related to knowledge, incentives, and coordination, as highlighted by thinkers such as Friedrich Hayek, Ludwig von Mises, and other proponents of decentralized, market-driven innovation. The failures of industrial policies stem from their reliance on centralized decision-making, which lacks the flexibility and real-time responsiveness of market-based processes. Here are key reasons why government industrial policies often fail:

1. The Knowledge Problem (Hayek)

Friedrich Hayek's work on *The Use of Knowledge in Society* (1945) demonstrated that knowledge is decentralized and spread across millions of individuals in an economy. This knowledge is often tacit and localized, meaning that it cannot be easily aggregated or understood by a central authority. Industrial policies, by their nature, are attempts by governments to centrally plan or steer certain sectors of the economy toward specific goals, such as developing strategic industries, creating jobs, or fostering technological innovation.

However, no government planner can access or process all the dispersed, detailed knowledge about consumer preferences, resource availability, or technological possibilities that entrepreneurs in a market system rely on. As a result, governments often end up making poor investment decisions, allocating

resources to projects that do not align with market demand or technological trends. This leads to inefficiencies and missed opportunities for innovation.

2. Misaligned Incentives (Kirzner and Coase)

In a market economy, entrepreneurs are driven by profit and loss, which acts as a natural feedback mechanism to reward efficient, innovative activities and penalize wasteful or unproductive ones. Israel Kirzner emphasized the role of entrepreneurial alertness in identifying opportunities that others have missed, and Ronald Coase highlighted how markets allocate resources efficiently based on the incentives created by property rights and competition.

In contrast, government industrial policies often suffer from distorted incentives. When the state directs resources toward certain industries or projects, it is not subject to the same competitive pressures as the private sector. Bureaucrats and politicians may allocate funds based on political considerations, lobbying, or short-term electoral goals rather than long-term economic value. As a result, government-backed projects often lack the discipline of the market, leading to inefficient use of resources, rent-seeking, and corruption.

3. Lack of Flexibility and Adaptation

Markets are dynamic, constantly adjusting to new information, changing consumer preferences, and technological advancements. Entrepreneurs and businesses respond to these signals and adjust their strategies accordingly. Industrial policies, by contrast, are often rigid and slow to adapt. Once a government commits to a particular industry or technology, it is difficult to reverse course, even if market conditions change.

For example, if a government heavily subsidizes a particular technology that becomes obsolete or uncompetitive, it may continue to pour money into that sector to avoid political embarrassment or due to bureaucratic inertia. This can lead to long-term inefficiencies, as resources are locked into outdated or failing industries while more promising opportunities are neglected. In a republic of entrepreneurs, market forces naturally redirect resources toward more productive uses as conditions change.

4. Crowding Out of Private Investment

Government-led industrial policies can also crowd out private investment. When the state directs large amounts of capital toward certain industries, it can distort the risk-reward calculus for private investors. If private firms see that the government is heavily involved in a sector, they may be reluctant to invest in that industry, fearing that government favoritism or subsidies will skew competition. This reduces the overall level of entrepreneurship and innovation in the economy, as private investors are discouraged from taking risks in sectors dominated by state intervention.

Moreover, when government-backed firms or projects receive preferential treatment, they may not have to compete on an equal footing with private firms. This reduces the overall level of competition in the market, which in turn stifles innovation and leads to lower productivity growth.

5. Political Capture and Rent-Seeking (Baumol)

William Baumol, in *Entrepreneurship: Productive, Unproductive, and Destructive* (1990), discussed the idea that entrepreneurs are not always engaged

in productive activities. In environments where the state plays a large role in the economy, entrepreneurs may focus on unproductive or destructive activities, such as rent-seeking or lobbying for government favors, rather than creating value through innovation and competition.

Industrial policies often create opportunities for rent-seeking, where firms lobby the government for subsidies, tariffs, or other forms of protectionism. This distorts the allocation of resources and encourages businesses to focus on gaining political favors rather than improving products, processes, or technologies. In a truly competitive market, firms succeed based on their ability to innovate and meet consumer demand, not on their ability to influence government policy.

6. Failure of Centralized Coordination

In complex, interconnected economies, coordinating resources and innovation through centralized planning is extremely difficult. Governments face immense challenges in trying to predict which industries or technologies will succeed, and even the most well-intentioned industrial policies can lead to unintended consequences. Markets, on the other hand, coordinate activities through the price mechanism, which transmits real-time information about supply, demand, and preferences.

Industrial policies that try to “pick winners” often fail because they cannot foresee all the future contingencies, market disruptions, or technological breakthroughs that shape industries. For example, government policies aimed at supporting the steel or coal industries in the mid-20th century failed to foresee the rise of alternative energy sources and the shift toward a more service-oriented economy. By the time market realities shifted, many of these government-backed industries had become obsolete, and vast amounts of public funds had been wasted.

7. Stifling of Competition and Innovation

In a market economy, competition drives innovation. Entrepreneurs and firms constantly strive to outperform each other by developing new products, improving efficiency, and lowering costs. Industrial policies, however, can reduce competition by favoring certain industries or firms, protecting them from market forces, and creating monopolistic or oligopolistic structures.

When the government intervenes to protect favored industries, it reduces the pressure on these firms to innovate. Without competition, there is little incentive for firms to improve their products or services, leading to stagnation. A dynamic, competitive market environment, where many entrepreneurs are free to experiment and take risks, is essential for sustained innovation and economic growth. Industrial policies, by picking winners and protecting them from competition, undermine this process.

Conclusion: Why Industrial Policy Fails

The republic of entrepreneurs theory, rooted in the works of Mises, Hayek, Kirzner, Coase, and others, suggests that innovation and economic growth arise naturally when individuals are free to act on their own knowledge, respond to market signals, and take risks in a competitive environment. Government industrial policies, by attempting to direct and control innovation from above, ignore the decentralized, spontaneous nature of entrepreneurship and innovation.

These policies are doomed to fail because they lack the knowledge, flexibility, and market incentives that drive successful innovation in a free economy.

In contrast, a system that respects property rights, individual liberty, and the rule of law fosters a dynamic, entrepreneurial economy where innovation emerges from the bottom up, driven by the creativity and initiative of individuals rather than the dictates of the state.

6 In a republic of entrepreneurs, the marketplace is akin to a battlefield, where individuals compete fiercely for survival and success. Entrepreneurs, much like soldiers, need to be agile, strategic, and innovative to navigate this competitive environment. Israel Kirzner emphasizes the role of alertness in entrepreneurship, which refers to an individual's ability to spot opportunities and inefficiencies in the market. This alertness is what allows entrepreneurs to succeed or fail, as they are constantly seeking to exploit gaps in the market to deliver value.

However, entrepreneurial success is not guaranteed, as there are inherent risks in every venture. Some entrepreneurs will succeed by recognizing opportunities and responding quickly, while others will fail because of missed chances or poor execution.

Joseph Schumpeter's theory of creative destruction adds another dimension to this battlefield metaphor. In the marketplace, old ideas, products, and businesses are continuously being replaced by new innovations, much like soldiers in battle. Entrepreneurs drive this process by introducing disruptive innovations that revolutionize industries, but in doing so, they also make existing businesses obsolete. This cycle of destruction and renewal creates constant pressure for entrepreneurs to innovate, adapt, and survive.

Together, Kirzner's emphasis on market alertness and Schumpeter's concept of creative destruction highlight the dynamic and challenging nature of the marketplace. Success comes not from luck, but from keen awareness, innovation, and the ability to adapt in an environment where change is constant, and competition is fierce.

- 7 The Republic of Letters, Republic of Science, and Republic of Entrepreneurs share a deep and striking similarity in terms of their structure and motivations. Each of these realms is composed of individuals striving for recognition, honor, achievement, and prestige. These communities operate not as formal institutions, but rather as intellectual and innovative networks, bound by the pursuit of knowledge, discovery, or market success. Just like scientists or intellectuals competing for priority in their discoveries, entrepreneurs engage in market rivalry, constantly innovating to stay ahead. In all three republics, the pursuit of excellence is accompanied by a desire for personal distinction and professional recognition, where success is often measured by how early or how well one makes an impact.

In the Republic of Letters, intellectuals from different nations exchanged ideas, debated philosophy, and sought recognition from peers, particularly during the Renaissance and Enlightenment periods. This republic was held together not by rigid institutions but by a shared pursuit of knowledge, with scholars often competing for intellectual prominence. Writers and philosophers communicated across borders, seeking to establish themselves as leading voices in their fields. Similarly, in the Republic of Science, scientists engaged in collaborative and competitive exchanges as they raced to make groundbreaking discoveries. Isaac Newton and Gottfried Wilhelm Leibniz provide a famous example of this competition, as they independently developed calculus and then fought bitterly over who had priority. Their intellectual battle was not just about mathematics, but about who would claim the title of innovator and shape the future of science.

In the Republic of Entrepreneurs, competition takes on a more commercial form, but the underlying drive for achievement and innovation remains the same. Entrepreneurs, much like scholars or scientists, vie to make their mark by creating new products, disrupting industries, and gaining market dominance. For example, Thomas Edison and Nikola Tesla engaged in an intense rivalry over the development of electrical systems—Edison’s direct current (DC) versus

Tesla's alternating current (AC). This entrepreneurial competition was not only about who could make a profit, but also about shaping the future of electrical technology. The competitive nature of their rivalry mirrors that of Newton and Leibniz, demonstrating how priority and innovation are highly valued across all three republics.

Moreover, in both the Republic of Science and the Republic of Entrepreneurs, creative destruction, a term coined by Joseph Schumpeter, plays a key role in driving progress. In science, old theories are replaced by new, more comprehensive ones, just as in business, outdated industries are swept aside by new technologies and business models. Schumpeter's theory of creative destruction emphasizes that innovation is often disruptive but necessary for societal and economic progress. Entrepreneurs, much like scientists, must constantly adapt, innovate, and improve in order to survive in a highly competitive environment. This concept applies to both scientific advancements and market innovations, as individuals in each republic must continually push the boundaries of what is possible.

Israel Kirzner's theory of entrepreneurial alertness also resonates in both the scientific and entrepreneurial realms. Just as scientists must be alert to new data and discoveries in their field, entrepreneurs must remain alert to market opportunities, anticipating consumer needs and responding quickly to changes. In the Republic of Entrepreneurs, failure and success are part of the landscape, much as in science, where not every hypothesis proves correct, but even failures lead to greater understanding and future breakthroughs.

The competitive nature of these republics, be it for knowledge or market share, emphasizes that both intellectual and entrepreneurial pursuits are grounded in individual agency. Individuals are motivated not only by the desire for profit or recognition but by the inherent satisfaction of contributing to society's advancement. In this way, both the Republic of Science and the Republic of Entrepreneurs share an underlying belief in the importance of individual creativity and freedom to experiment, innovate, and challenge the status quo. This is a core principle of the classical liberal tradition, which sees freedom, whether in thought or in business, as the driving force behind societal progress.

Furthermore, the dynamics of these republics highlight the importance of collaboration and competition. In the Republic of Letters, intellectuals built on one another's ideas, even as they competed for intellectual dominance. In the Republic of Science, researchers often relied on the discoveries of their predecessors while seeking to surpass them. In the Republic of Entrepreneurs, businesses build on previous innovations while constantly seeking to outperform their rivals. This interplay of cooperation and rivalry is a hallmark of each republic, demonstrating that while individuals may compete, their efforts contribute to the greater progress of society.

Thus, the Republic of Letters, Republic of Science, and Republic of Entrepreneurs are deeply interconnected through their shared values of innovation, honor, and achievement. Whether in the pursuit of knowledge or market success, individuals in these republics strive to leave a lasting legacy, driven by the desire for recognition and the advancement of human progress. From Newton

and Leibniz's calculus dispute to Edison and Tesla's battle over electricity, these examples show how competition and innovation are central to human endeavors across all domains. Just as the Republic of Letters and Republic of Science have shaped the modern world, so too has the Republic of Entrepreneurs, creating a society where creativity, competition, and the drive for excellence continue to propel us forward.

8 The concept of an entrepreneurial state as advocated by Mariana Mazzucato is fundamentally at odds with the understanding of entrepreneurship. According to economists like Ludwig von Mises, Friedrich Hayek, Israel Kirzner, and Edmund Phelps, entrepreneurship is inherently a decentralized, spontaneous process driven by individual initiative, discovery, and market signals. In this framework, the state—by its very nature as a centralized authority—cannot act as an entrepreneur, as it lacks the necessary incentives, knowledge, and adaptability.

1. Entrepreneurship Requires Decentralized Knowledge and Decision-Making (Hayek)

Friedrich Hayek, in *The Use of Knowledge in Society* (1945), made it clear that entrepreneurial success depends on the use of dispersed and localized knowledge. Entrepreneurs act on their own specific, often tacit, knowledge of consumer preferences, production processes, and market trends—knowledge that is impossible for a central authority to gather or process effectively.

The entrepreneurial state contradicts this insight because governments operate through centralized decision-making structures that lack the capacity to gather and process the vast, dispersed knowledge that exists across a market economy. Bureaucrats do not have access to the same detailed, real-time information that entrepreneurs on the ground use to make decisions. As a result, state-led initiatives often result in resource misallocation and inefficiencies, as they cannot react as quickly or accurately to changing market conditions.

2. Incentives and Risk (Kirzner and Coase)

Israel Kirzner emphasized the role of entrepreneurial alertness in spotting opportunities for profit that others miss. Entrepreneurs are guided by market incentives—profit and loss—that compel them to constantly search for ways to

meet consumer demand in innovative and cost-effective ways. This is reinforced by Ronald Coase's insights into transaction costs and how entrepreneurs reduce inefficiencies in markets through their activities.

The state, however, does not operate under the same incentive structure. Government actors are not subject to profit and loss in the same way that private entrepreneurs are. Instead of being rewarded for efficiency and punished for failure, government bureaucrats often face distorted incentives that prioritize political outcomes over economic ones. This removes the essential market feedback mechanism that drives entrepreneurial success, undermining the very essence of entrepreneurship. The state cannot replicate the risk-reward dynamics of the market, making it inherently less suited to entrepreneurial activity.

3. Lack of Flexibility and Innovation (Mises and Phelps)

Ludwig von Mises, in *Human Action*, and Edmund Phelps, in *Mass Flourishing*, stressed that entrepreneurship is a dynamic, adaptive process that relies on the freedom to experiment, innovate, and sometimes fail. In a market economy, entrepreneurs are constantly adjusting their strategies based on consumer feedback, technological advances, and shifts in demand. This flexibility is a key driver of innovation and economic growth.

In contrast, state-directed innovation is often rigid and slow to adapt. Government programs are typically structured around long-term plans and budgets that are difficult to change, even when it becomes clear that a project is failing or that market conditions have shifted. This lack of flexibility leads to inefficiency and waste, as state-directed projects are often kept alive for political or bureaucratic reasons long after they have ceased to be viable. In contrast, private entrepreneurs are forced by market discipline to adapt quickly or face the consequences of failure.

4. Distorted Market Signals and Rent-Seeking (Baumol)

William Baumol, in *Entrepreneurship: Productive, Unproductive, and Destructive* (1990), highlighted how entrepreneurship can become distorted in environments where rent-seeking is more profitable than productive activity. In state-led economies, entrepreneurs often shift their efforts away from creating value for consumers toward seeking government subsidies, favors, and protectionism.

In an entrepreneurial state, resources are allocated not by market signals but by government planning, creating opportunities for unproductive entrepreneurship. Firms may invest more time and energy in lobbying for government contracts or favorable regulations than in developing innovative products and services. This leads to a misallocation of resources and stifles the creative, competitive processes that drive economic progress in a market economy.

5. Creative Destruction vs. State Intervention (Schumpeter)

Joseph Schumpeter's concept of creative destruction emphasized the importance of allowing new innovations to replace old industries in a process that drives long-term economic growth. Entrepreneurship, in Schumpeter's view, is a force of disruption, constantly reshaping the economic landscape through innovation. The process of creative destruction thrives in a competitive, open market where entrepreneurs are free to challenge the status quo.

The entrepreneurial state undermines this process by protecting favored industries and technologies from competition. Governments, driven by political considerations, often try to preserve existing industries that are no longer competitive, preventing the necessary process of creative destruction. This not only stifles innovation but also leads to economic stagnation, as resources are locked into outdated sectors that should be allowed to fail.

6. Spontaneous Order vs. Central Planning

The concept of spontaneous order, central to Hayek's work, argues that complex, efficient systems emerge naturally from the decentralized actions of individuals. Market economies, through the price system, allow millions of independent decisions to be coordinated without the need for a central planner. Entrepreneurs play a critical role in this system, adjusting their actions in response to price signals and market opportunities.

The entrepreneurial state, by contrast, seeks to impose order from above, often disrupting the spontaneous processes that allow innovation and economic coordination to flourish. State intervention distorts the natural flow of information in the market, leading to inefficiencies and misallocation of resources. The complex, adaptive order that emerges in a free market cannot be replicated through government planning, no matter how well-intentioned.

7: A Contradiction in Terms

The entrepreneurial state is a contradiction in itself because the very essence of entrepreneurship—decentralized decision-making, risk-taking, innovation, and competition—cannot be replicated by a centralized authority. The knowledge problem, distorted incentives, lack of flexibility, and political considerations that plague state-led initiatives make it impossible for the state to act as an entrepreneur in the way that private individuals and firms do. In a truly entrepreneurial society, the role of the state should be limited to creating the institutional framework—property rights, rule of law, and liberty—that allows individuals to act entrepreneurially. When the state tries to take on the role of the entrepreneur, it undermines the very processes that make entrepreneurship successful.

9 In a communist state, the absence of private property fundamentally prevents the emergence of a republic of entrepreneurs because the essential conditions that foster entrepreneurship—such as individual ownership, decentralized decision-making, and freedom to engage in voluntary exchange—are suppressed. As theorists like Ludwig von Mises, Friedrich Hayek, and Israel Kirzner have argued, entrepreneurship thrives in environments where individuals can own property, access market signals, and respond to incentives like profit and loss. These factors are virtually impossible in a system that denies private property and replaces market signals with state directives.

1. Lack of Private Property

In a communist system, private property is abolished, and all means of production are owned and controlled by the state. This fundamentally undermines entrepreneurship because private ownership provides the basis for individuals to take risks, make investments, and reap the rewards of their ventures. Without property rights, individuals cannot accumulate capital, innovate, or engage in entrepreneurial activities in the same way they could in a free market system.

Ludwig von Mises, in *Human Action* (1949), emphasized the role of private property in enabling entrepreneurship. He argued that the ability to own and control resources is a prerequisite for economic calculation and for making informed decisions about how to allocate resources efficiently. Without private property, there is no incentive for individuals to act entrepreneurially because they have no ownership stake in the outcomes of their actions.

2. Absence of Market Signals (Hayek)

Friedrich Hayek, in *The Road to Serfdom* (1944) and *The Use of Knowledge in Society* (1945), emphasized that a key component of successful entrepreneurship is the ability to respond to market signals—particularly prices—which communicate valuable information about supply, demand, and resource allocation. In a communist state, the price mechanism is replaced by central planning, and prices are often set arbitrarily by the government. As a result, individuals and firms have no reliable signals to guide their decision-making.

Without prices reflecting the real conditions of supply and demand, entrepreneurs cannot assess the profitability of their ventures or adjust their strate-

gies based on consumer preferences. This prevents the kind of dynamic, decentralized decision-making that is necessary for innovation and economic growth in a republic of entrepreneurs.

3. Central Planning vs. Spontaneous Order

Hayek's theory of spontaneous order highlights the importance of decentralized decision-making and voluntary exchange in creating efficient, innovative economies. In a free market, entrepreneurs respond to market conditions, innovate, and compete with each other, resulting in continuous improvements in products, services, and processes. In contrast, a communist system relies on central planning, where the government attempts to direct economic activity from above.

Central planning, however, is inherently inefficient because it cannot replicate the decentralized, adaptive decision-making process of a market economy. Hayek argued that no central authority can gather and process the vast amount of information required to make effective economic decisions for an entire society. The lack of entrepreneurial freedom in a communist state stifles innovation and leads to stagnation because there is no room for individuals to experiment, take risks, or act on localized knowledge.

4. Incentive Problems

In a republic of entrepreneurs, individuals are driven by the prospect of profit and the fear of loss, which motivates them to innovate, take risks, and improve efficiency. In a communist state, where private property is abolished and rewards are distributed based on need rather than effort or innovation, there is little incentive for individuals to engage in entrepreneurial activities.

Israel Kirzner, in his work on entrepreneurial alertness, emphasized that entrepreneurs play a crucial role in discovering opportunities for profit that others have missed. In a communist system, however, there are no profit opportunities to be discovered because the state controls all economic activity. This leads to a lack of innovation and dynamism in the economy, as individuals have no incentive to go beyond the minimum requirements set by the government.

5. Suppression of Individual Initiative

Communist systems prioritize collective ownership and decision-making, which often leads to the suppression of individual initiative. In a republic of entrepreneurs, individuals are free to pursue their own ideas, take risks, and experiment with new business models. In contrast, a communist state often imposes strict controls on economic activity, limiting the ability of individuals to innovate or deviate from the central plan.

Edmund Phelps, in *Mass Flourishing* (2013), argued that grassroots innovation—driven by ordinary individuals experimenting and improving processes—is essential for economic growth and dynamism. In a communist system, this kind of bottom-up innovation is stifled by the state's control over the economy. The lack of individual freedom and the absence of incentives to innovate prevent the emergence of a vibrant, dynamic economy.

Therefore, in a communist state, the absence of private property, market signals, and individual incentives makes the creation of a republic of entrepreneurs impossible. Entrepreneurship relies on decentralized decision-making, private

ownership, and the ability to respond to market conditions, all of which are absent in a system that prioritizes collective ownership and central planning. Without these key elements, a communist state cannot foster the kind of innovation and economic growth that characterize a market-driven republic of entrepreneurs. Instead, such systems tend toward stagnation, inefficiency, and the suppression of individual initiative.

10 In a feudal society characterized by rigid hierarchies, the conditions necessary for a republic of entrepreneurs do not exist. The key features of feudalism—land ownership concentrated in the hands of a ruling elite, serfdom or labor tied to the land, and a lack of economic mobility—fundamentally oppose the principles of entrepreneurship as understood by economists like Mises, Hayek, Kirzner, and others. In a republic of entrepreneurs, individuals have the freedom to act, innovate, and take risks within a framework of secure property rights, voluntary exchange, and open competition. These elements are missing in a feudal system.

1. Lack of Private Property and Economic Freedom

In a feudal society, land is the primary economic asset, and it is controlled by a small elite, such as lords or nobles, who hold their power through a system of hereditary rights and privileges. The vast majority of the population, particularly serfs or peasants, are tied to the land and do not have ownership rights over the resources they work with. This absence of private property for the majority of people prevents them from engaging in entrepreneurial activities.

Ludwig von Mises argued that private property is the cornerstone of entrepreneurship. Without ownership rights, individuals cannot control or manage resources to pursue economic opportunities. In feudalism, economic activity is constrained by the lord's control over land and production, and serfs have little incentive or ability to innovate or take risks. The absence of private property undermines the core entrepreneurial function of resource allocation and decision-making.

2. Rigid Social Hierarchy and Lack of Mobility

Feudalism is defined by a strict hierarchical structure, where one's social and economic position is largely determined by birth. This lack of social and economic mobility further stifles entrepreneurship. In a republic of entrepreneurs, individuals are free to move between social and economic classes based on their entrepreneurial success, effort, and innovation. However, in a feudal system, upward mobility is rare, and the class into which one is born often determines their economic opportunities.

Entrepreneurship requires freedom of movement and the ability to rise based on merit and market success. Joseph Schumpeter, in his work on creative destruction, emphasized the role of innovation in disrupting established social orders and creating new industries. Feudal societies, with their rigid hierarchies and emphasis on maintaining traditional power structures, are resistant to this kind of creative destruction, stifling both economic dynamism and entrepreneurship.

3. Centralized Control and Absence of Competition

In a feudal system, economic activity is not determined by market competition but by the relationships between lords and vassals. Lords exercise significant control over the economic activities of those under their authority, dictating what crops are grown, how resources are used, and how production is organized. This centralized control leaves little room for entrepreneurial initiative or competition, which are essential to driving innovation and economic growth.

Friedrich Hayek's concept of spontaneous order highlights the importance of decentralized decision-making in fostering innovation and economic coordination. In a market-based republic of entrepreneurs, competition drives individuals to discover new ways of creating value and meeting consumer demand. In a feudal system, however, competition is largely absent, as the economic system is based on fixed relationships between lords and serfs, rather than open markets. Without competition, there is little incentive for innovation or efficiency.

4. Lack of Incentives for Innovation

Entrepreneurship thrives on incentives, particularly the potential for profit and the ability to accumulate capital. In a feudal system, however, serfs and peasants have little to gain from innovating or improving production techniques, as they do not benefit directly from their labor. The wealth they generate is largely appropriated by the landowning class, leaving them with no economic stake in their work.

Israel Kirzner's theory of entrepreneurial alertness stresses that entrepreneurs are driven by the opportunity to profit from discovering unmet needs or inefficiencies in the market. In a feudal society, this opportunity is severely limited, as the economic system is structured to maintain the status quo and concentrate wealth in the hands of the ruling elite. Without the incentive to profit, the drive to innovate is severely diminished.

5. Limited Exchange and Closed Markets

In a republic of entrepreneurs, free markets allow individuals to engage in voluntary exchange, which is critical for discovering new opportunities and driving innovation. In contrast, feudal societies often feature closed markets and

limited exchange. Trade is restricted by local authorities, and lords may control or monopolize certain industries within their domains. This lack of open markets further stifles entrepreneurship, as individuals are unable to freely exchange goods, services, or ideas across regions.

Deirdre McCloskey, in *Bourgeois Dignity*, emphasized the role of open markets and cultural values that respect innovation and trade in fostering economic growth. Feudal societies, by contrast, typically lack both the open markets and the cultural respect for innovation that are necessary to create a vibrant entrepreneurial environment.

6. Dependence on Tradition Rather than Innovation

Feudal societies are deeply rooted in tradition, with economic activities and social roles dictated by custom rather than innovation. This reliance on traditional methods of production and governance leaves little room for entrepreneurial initiative. Entrepreneurs thrive in environments where they are free to challenge the status quo, experiment with new ideas, and introduce innovative products or services. In a feudal system, however, deviation from established practices is often discouraged, further inhibiting entrepreneurship.

Conclusion: No Republic of Entrepreneurs in a Feudal Society

In summary, a feudal society is fundamentally incompatible with the idea of a republic of entrepreneurs. The lack of private property, economic freedom, social mobility, competition, and incentives for innovation all serve to stifle the entrepreneurial spirit that drives economic growth in more open, market-based systems. While a republic of entrepreneurs fosters decentralized decision-making, market competition, and innovation, a feudal society is based on centralized control, rigid hierarchies, and adherence to tradition, all of which prevent the emergence of widespread entrepreneurship.

- 11 The notion that the republics of letters, science, and entrepreneurs continuously generate the beginning of history and the first man stands in direct contrast to Francis Fukuyama's thesis of an "end of history". Fukuyama argued that with the universalization of Western liberal democracy, humanity had reached a point where there were no further ideological evolutions—what he called the "end of history." However, this perspective fails to acknowledge the dynamic, ever-evolving nature of societies, knowledge, and human creativity. In the republics of letters, sciences, and entrepreneurs, innovation and discovery are ceaseless, making history a continuous process, perpetually renewing itself and giving rise to the "first man"—the pioneer, the creator, the innovator—who leads humanity into new frontiers.

The Republic of Letters, a term used to describe the intellectual community of scholars, philosophers, and writers, existed primarily during the Enlightenment but continues in modern times through global scholarly networks. It represents a collective that thrives on discourse, debate, and intellectual progress. New ideas, emerging from the work of thinkers like John Locke, Voltaire, and David Hume, were never static. Each generation built upon the ideas of the last, sometimes breaking away, sometimes expanding on them. This constant exchange of ideas symbolizes the beginning of history with each new thinker, as they challenge the established order and push the boundaries of human understanding. In this republic, there is never an "end"—new thought, new critiques, and new visions arise, sparking a continual renewal of the intellectual landscape.

Similarly, the Republic of Science, exemplified by the likes of Isaac Newton, Charles Darwin, Albert Einstein, and others, illustrates that science is always evolving. Scientific knowledge never reaches an absolute conclusion; rather, it is constantly revised, expanded, and, at times, completely redefined by new discoveries. For instance, Newton's classical mechanics were long considered definitive until Einstein's theory of relativity fundamentally altered the understanding of

space, time, and gravity. Every scientist or researcher, in their quest to uncover truths, represents the first man—the one who steps into uncharted territory to unveil hidden realities. Like the intellectual world, the scientific world cannot have an “end” because every answer generates new questions, leading to continuous exploration and discovery.

The Republic of Entrepreneurs operates under the same principles of endless innovation and progress. Joseph Schumpeter’s theory of creative destruction highlights how entrepreneurs and innovators are constantly creating new industries, technologies, and ways of doing business, even as they render existing ones obsolete. Every innovation represents a new beginning, disrupting the established order and introducing a new wave of economic and social change. Entrepreneurs like Steve Jobs, Elon Musk, and Jeff Bezos are modern examples of individuals who, much like scientists and intellectuals, drive forward new paradigms that redefine industries and human possibilities. In the world of entrepreneurship, there is never an end to the possibilities for innovation and disruption. The market is a battlefield of ideas, where failure and success co-exist, and where each new wave of technological progress or market disruption represents the beginning of a new chapter in human history.

These three republics are united by their dynamism, their constant pushing of boundaries, and the pursuit of excellence. Each is driven by a desire for honor, prestige, and recognition, just as the Republic of Letters saw philosophers and thinkers compete for intellectual dominance and recognition, and the Republic of Science saw scientists strive for priority in groundbreaking discoveries. In the world of entrepreneurship, the quest for market dominance, innovation, and customer satisfaction mirrors the same competitive ethos. Whether it is the priority disputes between Newton and Leibniz over the invention of calculus, or the market rivalry between Tesla and Edison, the core motivation in each republic remains the same: the desire to achieve something new, something transformative, and in the process, be acknowledged and celebrated.

Thus, the idea of the end of history is inherently flawed when applied to the human capacity for invention, discovery, and creation. History is not linear nor does it culminate in a final, perfected state. Instead, history is cyclical, with each new idea, invention, or discovery marking the beginning of a new era, a new chapter in the story of human progress. The first man is born in every generation—whether that be a philosopher, a scientist, or an entrepreneur—and each of these republics ensures that humanity continues to progress, driven by the unbounded potential of individuals to create, innovate, and challenge the status quo.

What ties these three republics together is their belief in the individual as the engine of progress. In the Republic of Letters, it is the philosopher or intellectual who pushes forward moral and social progress. In the Republic of Science, it is the researcher who pushes forward technological and scientific discovery. In the Republic of Entrepreneurs, it is the innovator who pushes forward economic and commercial development. These individuals—the first men of their domains—are never content with the world as it is; they see the world as it could be, and their daring and pioneering spirit keep history in motion, ensuring that there is

no final form, no “end of history”.

In conclusion, the republics of letters, science, and entrepreneurs ensure that history is an ongoing process, one that can never reach an end because human creativity and ambition are endless. Every day is, in essence, the beginning of history for the first man who steps forward to challenge, innovate, or discover. These republics will forever be fueled by the restless drive of individuals who push humanity to new heights, ensuring that there will never be a last man, but always a new beginning.

12 The concept that republics of letters, science, entrepreneurs, and politicians can evolve into authoritarian regimes is rooted in the complex and dynamic nature of human societies. While these republics are meant to be arenas of free exchange, creativity, and innovation, the very forces that drive liberal democracies can, under certain conditions, contribute to the rise of authoritarianism. This outcome is a result of the spontaneous evolution of institutions, human behaviors, and power dynamics, as explained by thinkers like Hayek, Mises, Popper, and others.

1. The Fragility of Liberal Democracies

Liberal democracies thrive on the principles of freedom, equality, and rule of law, but these systems are inherently fragile. As thinkers such as Friedrich Hayek and Ludwig von Mises have noted, freedom is not free—it requires constant vigilance, and when individuals or institutions no longer value freedom, it can be easily lost. Hayek famously warned of the “road to serfdom,” arguing that even well-meaning attempts to centralize control or manage economies could lead to the gradual erosion of personal freedoms and the rise of authoritarianism. This process of centralizing power can emerge within the republics of letters, science, entrepreneurs, and even politicians, if individuals or groups seek to consolidate control under the guise of efficiency or stability.

In the realm of politics, liberal democracies are not immune to spontaneous drift toward authoritarianism. As scholars like Francis Fukuyama have noted, democratic institutions can decay over time when they fail to meet the needs of the populace or become corrupted by cronyism and inequality. Politicians, as members of this evolving republic, may begin with good intentions but often

fall into power-seeking behaviors. As political institutions evolve, they may prioritize stability and order over freedom, leading to the concentration of power in the hands of a few individuals or political elites.

2. The Republic of Letters and the Risk of Authoritarianism

Historically, the republic of letters served as a forum for philosophers, writers, and intellectuals to exchange ideas freely. However, intellectual movements have, at times, also contributed to the rise of authoritarian regimes. For example, the French Enlightenment, which produced many progressive ideals about human rights and governance, also led to the French Revolution, which culminated in the Reign of Terror and the rise of Napoleon Bonaparte as a dictator. Here, we see how intellectual movements meant to liberate society can take unexpected turns, with strongman leaders emerging from chaotic or revolutionary contexts.

Jean-Jacques Rousseau, whose ideas on the general will and the sovereignty of the people inspired revolutionary ideals, is often criticized for inadvertently laying intellectual groundwork for authoritarian regimes. His ideas were interpreted by later thinkers and leaders to justify the suppression of individual liberties in the name of collective good, an interpretation that played into the rise of authoritarian figures like Robespierre and, later, Napoleon. The evolution of intellectual discourse in the republic of letters thus holds the potential to create conditions for authoritarian drift when individuals or groups claim absolute moral authority over society.

3. The Republic of Science and the Risks of Technocratic Authoritarianism

Similarly, the republic of science, where scientists collaborate in the pursuit of knowledge, can also lead to unintended authoritarian consequences. As noted by Michael Polanyi in his concept of the Republic of Science, scientific inquiry is fundamentally a spontaneous order, where independent initiatives are coordinated toward collective goals. However, when scientific elites begin to consolidate political power, science can become a tool for control rather than progress.

Historically, scientific elitism has been used to justify authoritarian regimes. Eugenics movements in the early 20th century, for example, were driven by misguided scientific ideologies that were co-opted by authoritarian leaders like Hitler. This misuse of science shows how the republic of science, when unchecked, can devolve into technocratic authoritarianism, where a scientific elite exerts control over society, claiming expertise as a justification for centralizing power. In contemporary settings, this risk is present when technocratic governance, promoted by figures in science and technology, begins to undermine democratic processes, favoring rule by experts over the will of the people.

4. The Republic of Entrepreneurs and the Drift Toward Crony Capitalism

In the republic of entrepreneurs, competition and innovation drive progress, yet the marketplace is also a battlefield, as Israel Kirzner emphasized in his discussion of entrepreneurial alertness. Entrepreneurs must navigate risks and uncertainties, with some rising to success while others face failure. However, when entrepreneurs use their success to consolidate political power and manipulate regulatory environments, they can create conditions for crony capitalism—an economic system where private businesses collude with the government to

maintain monopolies, crush competition, and undermine free markets.

Joseph Schumpeter's theory of creative destruction underscores the dynamic nature of the economy, but Schumpeter also warned that capitalism could give rise to its own form of authoritarianism, with successful entrepreneurs turning into oligarchs who suppress innovation to protect their own interests. In such cases, entrepreneurial success leads not to the flourishing of free markets but to market manipulation and the consolidation of power in the hands of economic elites.

5. The Role of Spontaneous Order and the Knowledge Problem

Underlying these spontaneous evolutions toward authoritarianism is the knowledge problem, articulated by thinkers like Hayek, Mises, Popper, and Polanyi. According to this view, no single actor or institution can possess the knowledge required to control the spontaneous order of a society. When central planners or authoritarian leaders attempt to direct economic or political systems, they inevitably fail because knowledge is dispersed among millions of individuals, and no central authority can fully comprehend the complexities of human societies.

In a republic of entrepreneurs, for instance, market forces are driven by countless individual decisions that cannot be predicted or directed from above. Attempts to centralize economic control result in inefficiencies, corruption, and ultimately economic decay. Similarly, in the republics of letters and science, no centralized authority can control the flow of ideas or discoveries without stifling the very creativity and innovation that these republics rely on.

6. The Shift from Liberal Democracies to Authoritarian Regimes

Liberal democracies can, under certain circumstances, evolve into authoritarian regimes. This shift often occurs when elites in these republics seek to consolidate power—whether they be intellectuals, scientists, entrepreneurs, or politicians. As Mises and Hayek warned, when societies embrace centralized planning or economic interventionism, they lay the groundwork for authoritarian control. The spontaneous order that sustains liberal democracies is fragile, and when freedom is no longer defended, societies risk sliding into authoritarianism.

7. The Eternal Vigilance for Liberty

Ultimately, the republics of letters, science, entrepreneurs, and politicians serve as engines of progress and innovation, but they must be carefully managed to avoid devolving into tools of authoritarian control. Each republic requires eternal vigilance to protect liberty and equality. As history shows, authoritarian regimes can emerge from any sphere of society when freedom is neglected or undermined by power-hungry elites.

In conclusion, while the republics of letters, science, entrepreneurs, and politicians are vital for the growth of knowledge, innovation, and progress, they also carry within them the seeds of authoritarian drift. It is only by safeguarding freedom, democracy, and the rule of law that societies can prevent this spontaneous evolution into authoritarianism. Each day is a new beginning in the struggle for liberty, and there is no end of history where the work of preserving freedom can stop.