The Google Ngram Viewer charts the incidences of words or phrases found in Google’s enormous digitized database of almost 5.2 million books published from 1500 to 2008 in seven

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1 http://books.google.com/ngrams/. Although efforts have been made to make the Ngrams legible to readers of the printed version of the present paper, some readers may prefer to access the full-color pdf version available upon request of the author or at Mises.org.
languages: English, French, Spanish, German, Russian, Chinese, and Hebrew. The horizontal axis measures years and can be set by the researcher, and the vertical axis measures the percentage the searched word or phrase (of up to five words) occurs in the entire corpus of digitized words. Publicly announced by Jean-Baptiste et al. (2011), its creators indicate that Google’s corpus of digitized texts comprise 4 percent of all books ever printed. Although subject to some criticism from scholars, the authors argue that the Ngram Viewer nonetheless serves as an important tool in the area of “culturomics” and they encourage its use in academic research. Austrian economists interested in economic and intellectual history, intellectual movements, the history of economic thought, and the appearance and disappearance of important people and ideas over time may find the Ngram Viewer a valuable research tool. (Most researchers and other interested parties will find procedures for using the Ngram Viewer to be self-explanatory. Nonetheless, its creators provide a link to helpful instructions.)

Use of the Ngram Viewer must be made with certain caveats. It is not known what metric Google used when choosing books to digitize besides attempting to scan all that were available in the public domain or through Creative Commons licenses. Whether the scanned books reflect a statistically accurate sample of all books may be subject to debate. Searches must take into account redundancies such as when a name or term is so general that the Ngram results may prove to be broader than intended by the researcher. For instance, searching for mentions of the economist “Hayek” in the twentieth century can return skewed results reflecting mentions of a popular actress of the same name. (Trying to gauge the influence of a book entitled Human Action also provides skewed results.) Some of the peculiar-sounding Ngram search terms presented in this paper reflect efforts to minimize such instances of skewness; it is left to the reader to determine whether such efforts are effective. The percentage measures on the vertical axis appear very low because the focus on economics itself is miniscule compared to the total corpus of digitized books (500 billion words). It only follows that measures of individual schools of thought or movements within economics will record even smaller percentages.

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With these caveats in mind, the Ngram Viewer can be used to highlight the events, ideas, and people associated with the Austrian School of economics (as well as the events, ideas, and people tangential to it) and to record and gauge the influence of these factors over time. The present paper presents some of the Ngrams that might be of interest to scholars of Austrian economics and others interested in the Austrian and Austro-libertarian tradition. Except when otherwise noted, the following Ngrams reflect the English corpus reflecting all English words.

THE BEGINNING

Economics was in the midst of transition around the time Austrian economics was being developed as a separate school of thought. At a time when the professorate was being developed as a separate class, economists such as Richard T. Ely, Edwin R.A. Seligman, and others who would help shape the Progressive Era were creating economics associations, standardizing curriculums, and developing degree programs that taught economics qua economics in methods that increasingly mimicked the hard sciences. Prior to this time, however, one studied economics within the broader field of the Moral Sciences, a term which reflected the popular justification for education in helping students understand natural laws so they can better follow them and live moral lives. As the chart below indicates, the break between “Economics” and “Moral Sciences” occurred not long after the publication of Carl Menger’s *Principles of Economics* in 1871.

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3 For more on the development of economics as a profession in the 19th century, see Rothbard (1989), especially Section 6, “Economics in Service of the State: The Empiricism of Richard T. Ely.”
As a separate school of thought, Austrian economics began with Menger’s *Principles*, although the actual term “Austrian School” was not coined until over a decade later. One can see Menger’s influence beginning around 1871 to be followed in the 1880s by Gustav von Schmoller, a leading German critic of the emerging Austrian approach. Schmoller exceeded Menger in terms of Ngrams for about 70 years, but Menger surpassed him around the time of the Austrian Revival.\(^4\)

\(^4\) The term “Austrian Revival” refers to the upsurge in interest in the Austrian School beginning in 1974, the instigation of which is generally explained by the economics conference that took place in June of that year in South Royalton, Vermont, and the awarding of the Nobel Prize in economics to F.A. Hayek later that fall.
The name Gustav Schmoller (and Gustav von Schmoller) remains popular in German, relative to mentions of Carl Menger, and while both mentions in French have been largely similar since 1985, mentions of Menger have exceeded those of Schmoller in more recent years.

References to the new Austrian School versus the German Historical School differ between the English and German corpus of words, although the influence of the Austrian Revival is still obvious in the latter. Prior to that event, German references to both schools were more closely paired. Following it, references to the Austrians greatly exceeded those of the Historicals.
That the term “German Historical School” (“Historische Schule der Nationalökonomie”) does not show up in the German corpus until after 1895, suggests it was a neologism created to differentiate the approaches of the Historical School and the Austrians. Since the Historical School predates efforts by the younger generation of German scholars (such as Schmoller), it is possible that references simply to the “Historical School” in German are more apt. When capturing this broader reference using the Ngram Viewer, the Historical School dwarfs references to the Austrian School. Of course, the term “Historical School” in German may have a context broader than economics.
Another difference between German and English is reflected in the word “methodenstreit.” In English, this almost always refers to the often acrimonious debate between the Austrians and Germans during Menger’s generation and the one that followed.

It is interesting to note that usage of the word “methodenstreit” in English began to increase some 10 years before the Austrian Revival. One wonders whether “debates over method” have a broader application in German language usages. The following chart compares the German and English instances of the word.
Methodenstreit (English corpus), Methodenstreit (German corpus), since 1880

SOME IMPORTANT PEOPLE

In English, Menger outshines his students, Friedrich von Wieser and Eugen von Böhm-Bawerk.

Carl Menger, Eugen von Böhm-Bawerk, Friedrich von Wieser, since 1880

Menger’s dominance is true in German as well, but a test of Wieser and Böhm-Bawerk alone shows Wieser receiving more references over time. The Google Viewer cannot differentiate between German and Austrian German (as it can for American and British English); it would be interesting to see how well Böhm-Bawerk holds up to Wieser in twentieth century Austria.
Eugen von Böhm-Bawerk, Friedrich von Wieser (German corpus), since 1870

Ludwig von Mises eclipses Wieser in English, German, and French, with his influence as measured in Ngrams has grown since his death in 1973. The English results are reported below.

Ludwig von Mises, Friedrich von Wieser, since 1900

Mises has also received more references than F.A. Hayek, although the relevance of both remains sticky (to use a Keynesian term) following their deaths (in 1973 and 1992, respectively). Note that Mises’s references exceed those of Hayek’s despite the latter’s being awarded the Nobel Prize in Economics in 1974, suggesting that the fruits of the Austrian Revival focus more on Mises. Regardless, Hayek’s upward trend in references began well before his Nobel and continues after at the same rate before leveling off in the mid-1980s. Perhaps due to Hayek’s association with the Thatcher government in
Britain and in British academia a generation earlier, Hayek more or less equals Mises in the British corpus. Meanwhile, Murray N. Rothbard’s influence has remained steady since the mid-1970s (including the period following his death in 1995). Consider the following two graphs, the first showing the American English corpus, and the second the British English corpus.

**Ludwig von Mises, Friedrich Hayek + F.A. Hayek, Murray Rothbard + Murray N. Rothbard (American English corpus), since 1900**

**Ludwig von Mises, Friedrich Hayek + F.A. Hayek, Murray Rothbard + Murray N. Rothbard (British English corpus), since 1900**

Despite that Mises’s first important work dealt with monetary theory and that monetary theory is considered one of his more important contributions to economics in the twentieth century, Irving Fisher is the mainstream monetarist who most influenced
modern monetary theory. Fisher’s mainstream acclaim for much of the twentieth century is evidenced in the Ngram counts. However, since 1990, his influence matches that of Mises.

Ludwig von Mises, Irving Fisher, since 1900

A similar result between Mises and Fisher shows up in the French corpus (not shown). However, within the German corpus, Mises surpassed Fisher in the mid-1970s and exceeds Fisher in influence to the present.

Ludwig von Mises, Irving Fisher (German corpus), since 1900

Although Mises critiqued many of Fisher’s monetary theories in his *Theory of Money and Credit* and *Human Action*, he also noted in *Human Action* (1998, p. 486) that Fisher’s time preference theory built upon the contributions of Böhm-Bawerk.
One might argue that if the state finances much of the study of economics in the academy (which is certainly true in the twentieth century in the English-speaking world), then out of a desire for self-preservation, it would tend to fund economists who favor it with their research agendas. Perhaps this phenomenon explains Mises’ Ngram comparisons with Milton Friedman (who was quite libertarian in outlook in areas outside of economics) and Paul Krugman (who is a self-described political liberal).

**Ludwig von Mises, Milton Friedman, since 1920**

**Ludwig von Mises, Paul Krugman + Paul R. Krugman, since 1980**
**SOME AUSTRIAN NOMENCLATURE, CONCEPTS, AND IDEAS**

Praxeology is the application of deductive theory to human action, and catallactics is the application of praxeological methods to economics. Although Mises (1998, p. 3) wrote that catallactics was first coined in Whateley (1831) as “the Science of Exchanges,” the term has maintained steady usage since the 1870s. While non-Austrian economists often invoked catallactics prior to Mises—for instance, the neoclassical John Bates Clark (1914, pp. 52-56) discusses the “science of catallactics” in a non-free market context—Mises (1922, 1960 [1933]) discusses catallactics in Austrian terms, and most of its usage thereafter reflects this Misesean context. Praxeology, in contrast, was first coined in 1890 (again, according to Mises [1998, p. 3]), but its use has almost uniformly been identified thereafter with Austrian economics and its usage has exceeded that of catallactics.

Catallactics, praxeology, since 1820

One of Mises’ more popular quotes is from *Bureaucracy* (1944, pp. 74–75):

Louis XIV was very frank and sincere when he said: I am the State. The modern etatist is modest. He says: I am the servant of the State; but, he implies, the State is God. You could revolt against a Bourbon king, and the French did it. This was, of course, a struggle of man against man. But you cannot revolt against the god State....
Here are Ngram measures of statism in English and French.

**Statism + statist (English corpus), étatisme + etatism (French corpus), since 1800**

Related comparisons consider “market economy” and “planned economy” (the former of which does not surpass that latter until the 1960s), as well as “government failure” and “market failure.”

**Market economy, planned economy, since 1900**
Market failure, government failure, since 1910

Since the early 1800s, mentions of capitalism do not again exceed those of communism until the 1980s.

Communism, socialism, capitalism, since 1830

The contrast between the terms “government power” and “market power” in English and English fiction corpuses is striking. In the broader former corpus, market power quickly exceeds government power after the term enters the vernacular in the 1940s. Yet in the narrower latter corpus, the inverse result exists until after 2005. In fact, the term “market power” does not enter the English fiction corpus until the 1970s.
Government power, market power, since 1900

Since the time of the Progressive Era, the focus on income, a flow variable that can fluctuate in the short term, has exceeded that of wealth, a stock variable associated with long-term stability.
**Income, wealth, since 1800**

The Ngram Viewer’s root function counts the number of times a word is the main verb in a sentence. Here are measures for “save” and “spend” as verbs since 1800.

**_ROOT_=>save, _ROOT_=>spend, since 1800**

Here are the same measures with the use of the word “investment” as a noun. One might conclude that the term investment became more relevant as government became more centralized in the twentieth century.
The term “rights of labor” has fallen into disuse as organized labor itself has become less dominant in labor markets in general, following its peak in the 1940s.

The traditional definition of inflation to which Austrians adhere is a measure of the increase in the money supply, which contrasts with a more modern but popular definition for inflation as an increase in the price level. Here are the Ngram references for “monetary inflation” and “price inflation” since 1900. They indicate that “price inflation” references significantly departed from monetary inflation not long after the passage of the Gold Reserve Act of 1934, the purpose of which was to significantly increase the money supply (by increasing the dollar-gold ratio). Thereafter, references to inflation are tied to prices and not to money—making it a price phenomenon more than a monetary one—increased significantly.
The Ngrams indicate that while inflation has always exceeded deflation in terms of interest (especially between 1850 and 1910 when industries such as agriculture agitated for more monetary inflation for bring about higher prices and revenues), it was not until the introduction of central banking to the United States in 1914 that inflation became much more prominent. While it became less of a cause for concern during the so-called “Great Moderation” years of the early 1980s to 2008, deflation remains a term of little interest, notwithstanding the importance placed upon it by modern monetarists for justifying increases in the money supply. This suggests that concern over deflation is solely a concern for modern mainstream academic economists as opposed to an issue that concerns the masses.\(^6\)

\(^6\) See Thornton (2003) for a discussion of mainstream economists’ excessive concerns about deflation, of which Thornton labels a phobia (apopliithorismophobia).
Inflation, deflation, since 1800

Inherent in the term “inflation as a tax” is the recognition that inflation is a government-created phenomenon and does not appear until the mid-1930s. The appearance of this term at that time is perhaps also related to the passage of the Gold Reserve Act of 1934.

Inflation as a tax, since 1925

The term “fiat money” is mentioned rarely prior to 1915. It is remarkably correlated with “business cycle” and “gold standard.” (In the second chart below, the measure for fiat money is multiplied 15 times to show the correlation.)
Rothbard (2009 [1977], pp. 802–803) wrote,

“Fraud” is a harsh term, but an accurate one to describe this practice [of inflating the currency through fractional reserve banking], even if not recognized as such in the law, or by those committing it. It is, in fact, difficult to see the economic or moral difference between the issuance of pseudo receipts and the appropriation of someone else’s property or outright embezzlement or, more directly, counterfeiting.

To the degree that printing money is a synonym for inflating, it is remarkable (i) how the terms for printing and stealing money are correlated and (ii) that terms for “printing money” exceeded those for “stealing money” for about a 15-year period beginning in the late 1970s.
The terms “Hayekian Triangles” and “Economic Calculation Debate” do not appear until the time of the Austrian Revival. They are highly correlated.

The adjectives “Misesean,” “Hayekian,” “Rothbardian,” and “Friedmanite” are also compared. In the two charted iterations below, Hayekian is the most common modifier.
Ngram references for "Keynesian Economics" have always exceeded "Austrian Economics," (the latter term of which does not appear in significant numbers until the Austrian Revival). Nonetheless, the differential between the two schools of thought have been decreasing in recent years.
Austrian economics, Keynesian economics, since 1930

![Graph showing the popularity of Austrian and Keynesian economics from 1930 to 1990.](image)

**FIVE BOOKS**

Ngram comparisons of Mises’ *Human Action* barely register when compared to John Maynard Keynes’ *General Theory*, highlighting the heterodox state of Austrian economics. In the two charts below, however, Mises’ *Theory of Money and Credit* and Rothbard’s popular *Case Against the Fed* and *What Has Government Done to Our Money* are analyzed. The first chart compares *Theory of Money and Credit* in German and English and shows the book being very popular in the German corpus relative to the English corpus (its English translation was published in 1934). Caveat: the Ngram Viewer searches up to five-word phrases, so the first word of the German title (Theorie) was dropped.
Rothbard’s *What Has Government Done to Our Money* has traditionally exceeded in influence *The Case Against the Fed*, but beginning in the 2000s, the two books have equaled each other in this regard.

Finally, one of Hayek’s signature books appears to have maintained greater long-run influence than Friedman’s.
NGRAMS OF INTEREST TO MODERN AUSTRINIANS

Rothbard’s references remains dominant compared to other contemporary Austrians…

Murray Rothbard, Israel Kirzner, Walter Block, Hans-Hermann Hoppe, since 1950

…while Roger Garrison’s influence has remained steady since 1980, George Selgin’s and Peter Boettke’s influence has risen.
Austrians Peter G. Klein’s and Joseph T. Salerno’s influence has been positively correlated since the mid-1990s.

The next two charts indicate the Austrian politician and thinker Ron Paul relative to the two most recent chairmen of the Federal Reserve, with whom he has provoked some public debate. While Paul’s influence mirrors that of Ben Bernanke, it remains quite small relative to Alan Greenspan. Unfortunately, the Google database currently runs to 2008, so it is not known how Paul’s influence relative to these two men changed in the five-year period that followed.
Ron Paul, Ben Bernanke, since 1970

Ron Paul, Alan Greenspan, since 1960

Finally, to further gauge the influence of Hayek and Friedman, “Hayek’s Nobel” and “Friedman’s Nobel” are charted. Note that the mentions of “Friedman’s Nobel” began about four years before it was officially awarded to Friedman in 1976.
NGRAMS OF WAR AND PEACE, REPUBLIC AND EMPIRE

Mises (1998, p. 149) called government “the social apparatus of compulsion and coercion,” and he considered modern warfare the ultimate failure of civilization compared to the advances that were possible through the peaceful and wealth-producing outcomes made possible through voluntary trade and the division of labor. As a result, Austrian analyses of the state are often more trenchant than the mainstream schools which often analyze government as one economic actor among many or as an extra-market force necessary to correct for inherent market shortcomings. It follows that Austrians are generally more concerned about “the state of the State” over time and the implications of state growth on classical liberal society. Three concluding Ngrams reflecting some of these issues follow.

Although Mises was quite realistic about the shortcomings of representative democracy, he had a sanguine opinion about it. He noted in Bureaucracy (1944, p. 81) this form of government “cannot subsist if a great part of voters are on the government payroll. If the members of parliament no longer consider themselves mandatories of the taxpayers but deputies of those receiving salaries, wages, subsidies, doles, and other benefits from the treasury, democracy is

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7 Mises (1998, p. 809): “The market economy involves peaceful cooperation. It bursts asunder when the citizens turn into warriors and, instead of exchanging commodities and services, fight one another.”
done for.” He warned (1944, p. 121), “Democracy is not a good that people can enjoy without trouble. It is, on the contrary, a treasure that must be defended and conquered anew by strenuous effort.” Some seven decades later, it is hard to find Austrians who are as sanguine about democracy as a form of government.8

However, Mises’s lifespan corresponded with the rise of a new democratic order in the West, something that is illustrated by the relationship between the concepts “republic” and “democracy” over time.

Republic, democracy, since 1740

Austrians have long noted the role of war in promoting government growth and control in society. For instance, Mises (1983 [1919], p. 106) argues that “[w]hoever wishes peace among peoples must fight statism,” a theme that he expanded on throughout his life. Higgs (2006, 2012), Rothbard (2007), and Raico (2010) note the relationship between the rise of the modern state and the wars of the twentieth century. In terms of Ngram references, terms for “terrorism” and “Cold War” have often moved in the same direction, although since 2000 it appears that terrorism is supplanting the Cold War in terms of justification for state growth.

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The focus on war is not new. The first half of the 18th century—during the height of the Enlightenment—was the last time “peace” exceeded “war” in Ngram counts.

Perhaps the Enlightenment served to remove constraints that have made war more likely up to today. On this point, Mises (1998, p. 860) notes that the social philosophy of the Enlightenment failed to see the dangers that the prevalence of unsound ideas could engender. The objections customarily raised against the rationalism of the classical economists and the utilitarian thinkers are vain. But there was one deficiency in their doctrines. They blithely assumed that what is reasonable will carry on merely on account of its reasonableness. They never gave a thought to the possibility that public opinion could favor spurious
ideologies whose realization would harm welfare and well-being and disintegrate social cooperation.

Austrian economics is often utilized to defend human welfare and well-being by providing theoretical and logical support for social cooperation in light of public opinion that opposes it. As an economic school of thought with Aristotelian roots long predating the Enlightenment, it often stands athwart the extreme scientism the Enlightenment helped nurture while refocusing the basis of economic theory on the actions of the human person. The Google Ngram Viewer provides a useful way to chronicle its influence.

REFERENCES


