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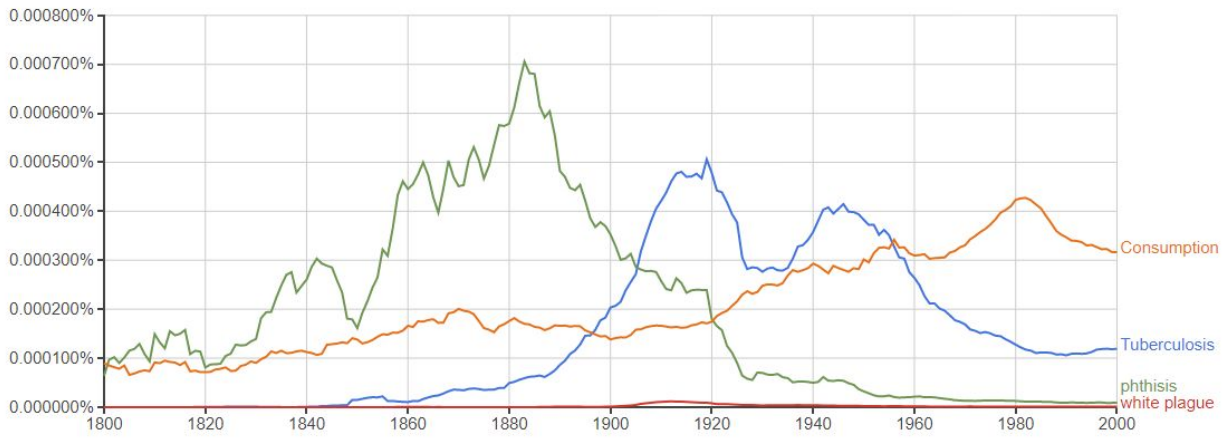
A disease with many names: Tuberculosis.
What Google's Ngram Viewer can tell us about the evolution of Epidemiology.

Tuberculosis is a disease that has been around for quite some time. Researchers have theorized that the first humans to contract the disease were born five-thousand years ago in Africa, and the bacterium responsible for the disease (*Mycobacterium tuberculosis)* has been found in bison dating back *seventeen-thousand* years ago. Over Tuberculosis' long history in the Anthropocene, we have given it many, many names: "White Plague", "Consumption", " Phthisis", and eventually, "Tuberculosis" being ones used with the highest frequency. Our use of these words, their etymology, and their frequency in printed text tell us a lot about our understanding of diseases -- from how they spread to how they directly impact the body. And a good tool to use when discussing the way words can form our understanding of our environment is the Google Ngram Viewer (GNV).

GNV is a product of Google Books, a service from Google that searches the full text of books and magazines that Google has scanned, converted to text using optical character recognition, and stored in its database. When search queries are inputted into GNV's interface, it takes the user-inputted string and searches across its database of scanned books and finds the instances where the string was mentioned. GNV then takes the number of books where the string appears, compares it to the total amount of scanned books in the database for that year, returns the frequency of mentions of that particular term in a year, and plots out the data for a given period in a nice graph. When multiple queries are inputted, the graphs are superimposed on each other, making for a good comparison tool.



Graph 1: The frequency graph of the phrases “Consumption”, “phthisis”, “white plague”, and “Tuberculosis” in printed text from 1800 to 2000.

The above graph, (which I will be referring to in this paper as Graph 1), shows the frequency of the phrases “Consumption”, “phthisis”, “ white plague”, and “Tuberculosis” in printed text from the years 1800 to 2000. As for general trends we can see from the onset of our exploration into these terms, the term “phthisis” sees massive popularity in printed text from the early-to-mid 1800s to the beginning of the 20th century, while “Tuberculosis” sees a meteoric rise starting in the late 19th century and stays more relevant than “phthisis” all the way into the modern era. This can be attributed to the discovery of the Mycobacterium tuberculosis and standardization of medical terminology in the early 20th century. But what we want to look into in this paper is why these words in particular put our understanding of Tuberculosis on display, starting with the most antiquated of these terms, phthisis

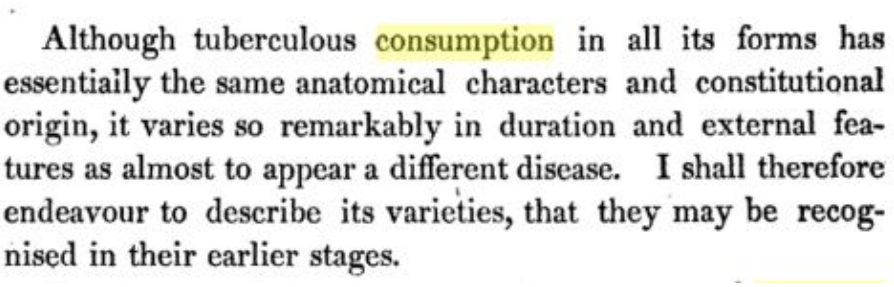
Phthisis’ etymological roots are ancient Greek, φθίσις (phthísis) which comes from the ancient Greek word, φθιω (phthíō), which means “to waste away.” Which is a fairly accurate description of our understanding of the disease. In the 19th century, the concept of “preventable diseases” did not exist. Before modern medicine, if you got ill, you plotted your final days on the earth. Which is why TB at the time was known by some as the “romantic disease.” The slow

progress of the disease compared to other prevalent diseases at the time was seen to give the sick person a chance for a "good death" where one could arrange their affairs. Linguistic relativity, (also known as the Sapir-Whorf hypothesis) is a principle in linguistics that says that language has a direct influence on our thoughts and decisions. The widespread use of phthisis in the 1800s is a clear demonstration of linguistic relativity. During this time, if you caught Tuberculosis, all one could do was waste away, and in turn, the use of "Phthisis" asserted that belief.

The more popular term for Tuberculosis during the 19th century and into the 20th was "consumption." It was called consumption because victims of TB would experience massive weight loss as the disease seemed to "consume" its host. The use of this term in particular shows us how little we knew of the disease and how it infected its host. While the term "consumption" was prevalent in common parlance, we had no concept of how Tuberculosis killed someone, and so in our best efforts to describe it, we used terms that described what we could see from the outside. The effects of Tuberculosis took its place as the namesake of the disease. Advancements in science in the late 19th century such as Robert Koch's discovery of the *tubercle bacilli* did lead to the eventual rise of the term "Tuberculosis" as an accurate means to describe the disease, but we do need to return to Graph 1 for a second.

When looking at the frequency graph for "Consumption", one would expect to see high frequency in the 19th century, and indeed, it does see much use in that period, but what is unexpected is that the phrase "consumption" actually *rises* in popularity from the 20th century and into the 2000s. After consumption was replaced by the more scientifically accurate tuberculosis, its use in printed media saw massive drop off, except in the cases where authors would write about its infamy as a term used to inaccurately describe the disease. This

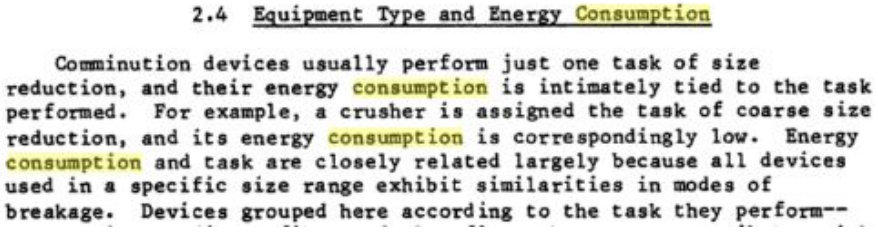
discrepancy points out a flaw in the GNV. GNV allows the user to actually see the pages of the books where the search term is mentioned. When we look at the mentions of consumption of books from the early 19th century, we do in fact see consumption being used as a term for Tuberculosis frequently.



Although tuberculous consumption in all its forms has essentially the same anatomical characters and constitutional origin, it varies so remarkably in duration and external features as almost to appear a different disease. I shall therefore endeavour to describe its varieties, that they may be recognised in their earlier stages.

From *A Treatise on Pulmonary Consumption. Published 1835.*

But when one looks at the mentions of "Consumption" in printed text during the 1980s for example, we see consumption being used as a general term for a myriad of topics ranging from energy to food surveys.



2.4 Equipment Type and Energy Consumption

Comminution devices usually perform just one task of size reduction, and their energy consumption is intimately tied to the task performed. For example, a crusher is assigned the task of coarse size reduction, and its energy consumption is correspondingly low. Energy consumption and task are closely related largely because all devices used in a specific size range exhibit similarities in modes of breakage. Devices grouped here according to the task they perform--

From Comminution and Energy Consumption. Published 1981.

Because of this, Graph 1 doesn't tell us the entire story. "Consumption" did in fact become an antiquated term for Tuberculosis that has long been estranged by the scientific community.

The rise of "Tuberculosis" came with the discovery of the Tuberculosis bacterium and invention of X-Rays by Wilhelm Roentgen in 1895. Roentgen's X-Rays were essential in the diagnosis of TB before symptoms became physically apparent, and we started to isolate the

infected from the general populous. Once the scientific community knew about the cause of TB, more research was put into how to prevent the disease, until 1928 when the first antibiotic (penicillin) was discovered by Alexander Fleming. And it is that year exactly when the term "Tuberculosis" starts to fall off in relevancy in printed text. When we were now able to cure people of the disease, no one was writing about it anymore. From 1928 onwards mentions of "Tuberculosis", "Consumption", and "Phthisis" are nothing but down. Except for a small period from 1934 to 1945 where the mentions of "Tuberculosis" actually rise in printed text. This is because a lot of Epidemiology literature was written during this time where Tuberculosis was used as a case-study.

The many terms we used to describe the disease like Tuberculosis show us how the words we use display the extent of the knowledge we have about the world around us. And their changing frequency in printed text show us how throughout history our knowledge of the world has increased leading us to have words that describe our environment precisely and accurately. Lord Byron once said to his friend, Lord Sligo, "I should like, I think, to die of consumption." When Lord Sligo asked why, Byron replied, "Because then all the women would say 'See that poor Byron – how interesting he looks in dying.'" I don't think Lord Byron would be the best role model in the 21st century, knowing what we know now about Tuberculosis.

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