CJD, ACD, JB, and a one-in-million find: Reflections on a scholarly journey with the creator and inspiration of Sherlock Holmes

(This is the academic script for a multimedia presentation that will include images of my grandmother, Edinburgh, and correspondence between Dr. Joseph Bell and Dr. John Shaw Billings)

"When you have eliminated the impossible, whatever remains, however improbable, must be the truth." – Sherlock Holmes

As I end my undergraduate collegiate career and begin to plan my next chapter, I think about the role that Sherlock Holmes has played on the last four years of my life. When I began my time at Kansas State University in the Fall of 2021, I was enrolled as a Medical Microbiology major on the Pre-Med track. Unbeknownst to me, I was about to be introduced into the world of public health, where the likes of Samuel Crumbine, Joseph Bell, and John Shaw Billings were waiting for me to unearth their stories. Growing up, I had somewhat of an interest in medicine and most definitely an interest in science, so when it came to deciding a major, Medical Microbiology felt right, but I was not exactly sure why. As a freshman in college, I hit the ground running enrolling myself into the "*Hacking the MCAT*" CAT Community; Public & Veterinary Health in the Age of Sherlock Holmes; and Phage Hunters with the intent to foster a degree that would ultimately lead to medical school. These three courses independently and collectively paved the way for what would become four years of intellectual curiosity combined with a consistent confusion surrounding what career pathway I should be on.

The iconic quote stated above belongs to none other than Sherlock Holmes—the master of deduction, logic, and observation. What I had not known at the beginning of my time at Kansas State University, was how much this quote would come to mean to me. During my first semester of college, something *incredibly* improbable happened. My family, and more specifically my grandmother, faced what can only be described as a one-in-a-million diagnosis. What we had preemptively thought to be symptoms of long COVID or early onset dementia, became Creutzfeldt Jakob Disease (CJD). My grandmother walked into the hospital in late October 2021 and passed away from the disease on November 9th. Of the 340 million people living in the United States in 2024, only around 350 faced a CJD diagnosis. CJD is a transmissible spongiform encephalopathy, and similar diseases include Kuru in humans and Scrapie in sheep, all of which are caused by prions. During the late fall of that first semester, the instructor for my *Public Health in the Age of Sherlock Holmes* course had begun teaching us about Kuru and Scrapie. It was only when my mom called to tell me what they thought my grandmother had, that I connected the dots back to that class, remembering and understanding just how devastating CJD and all prion disease are. It was a moment that not only deeply saddened me but struck a match that lit the passion I now have for public health.

Over the next several semesters, I would declare a Gender, Women, and Sexuality Studies minor with the intent to deepen my knowledge in health equity stemming from what I had learned in my CAT Community as well as a certificate In Global Health, Medicine, and Society. I also would go on to become trained to work at Kansas State's Biosecurity Research Institute in a Biosafety Level 3-Ag lab working with African Swine

Fever, stemming from an interest in research I had gained in Phage Hunters. From here I would switch from Pre-Med to Pre-Vet and eventually away from both of those, determining whatever was in front of me was not Medical School or Vet School. The last four years of my life have brought me incredible experiences working with the USDA at the Center for Grain and Animal Health Research and the National Bio and Agro-Defense Facility. All these experiences rooting back to the introduction I got to Public Health that first semester. In the way that Sherlock Holmes consistently finds clues and deduces what his next step should be, I have, through trial and error, solved the case of *Alexa Heseltine's Undergraduate Career*. The connection between public health and Sherlock becomes clear when you look a little deeper into the origin of the mystical detective.

Behind the story of Sherlock Holmes was a very real man: Dr. Joseph Bell, a Scottish surgeon and lecturer in the late 1800s, known not just for his medical skills but for his razor-sharp ability to observe and deduce. He could identify where a person was from, what their profession was, and even details about their lifestyle, just by the way they walked into the room. Born in 1837 in Edinburgh, Scotland he was a Doctor of Medicine, Fellow of the Royal College of Surgeons in Edinburgh and a Justice of the Peace, District Liaison. Bell would go on to teach at the same medical school and become the very dynamic person who would later inspire Arthur Conan Doyle (ACD) and his literary creation of Sherlock Holmes. Doyle enrolled in the medical school in 1876 and was selected to be Bell's clerk. Doyle is quoted saying that,

“I thought of my old teacher Joe Bell, of his eagle face, of his curious ways, and his eerie trick of spotting details. If he were a detective, he would surely reduce this fascinating but disorganised business to something nearer an exact science.”

In December of 2024, with Arthur Conan Doyle and Joseph Bell in mind, I prepared myself for the opportunity to travel to the National Library of Medicine (NLM) at the National Institutes of Health in Washington, D.C. with the intent of examining first person correspondence between the library’s founder, Dr. John Shaw Billings (JB), and various public health officials from the period. John Shaw Billings was a towering figure in 19th-century American public health; while he had many accomplishments, arguably his largest was collecting and assorting medical documents from all over the world creating what is now the world’s largest repository of biomedical knowledge—the National Library of Medicine.

It was on this trip to the NLM that I would have my second instance of improbability combined with a one-in-a-million experience. The NLM holds over seven million books, journals, reports, photographs and more, so to say I was excited to uncover what I did, is an understatement. With guidance from a mentor, I went through varying folders from the time of John Shaw Billings, meticulously reading and taking in a fraction of 19th century history. Late in the day, I opened MS C 81, picking up the date Feb 1-16, 1877. This specific folder contained a letter marked Feb. 1, 1887. The letter’s header (i.e., return address) was Melville Crescent—the very residence of Dr. Joe Bell. Indeed, it contained correspondence between Dr. Bell and Dr. Billings. At this point in time, Billings was about 12 years into his journey of collecting artifacts for this new library. Having been summoned by the Army to

take over the collection at twenty-seven years of age, the challenge had become the center of his life. In the letter, Bell describes that he has asked one of his family members to travel to his father's library. He goes on to mention that he has marked "B. [Benjamin] Bell" in Billing's catalogue, noting that "MacClellan" would send them to Billings. While Bell's father was not Benjamin, his great-grandfather was. Since Benjamin was known as Scotland's first scientific surgeon, it is not a surprise that his medical library would have been of use to Billings for the NLM. In the letter, Bell also urges Billings to put an advertisement into the *Edinburgh Medical Journal*, noting that it would have only cost him £5, wondering to Billings whether the United States government would cover the cost.

The historical value of this find is extraordinary. Being able to hold first person correspondence that helped create the largest repository of medical documents in the world is an amazing find. It illustrates the importance of transcontinental communication then—and now. Bell's emphasis on promoting material in the *Edinburgh Medical Journal* and his suggestion to advertise key works for a small government-sanctioned fee reflect an understanding that the spread of accurate medical information is a cornerstone of public health. In 1877, as now, public knowledge could be a matter of life or death. Today, the stakes have only intensified: modern public health faces a rapidly evolving media landscape, where misinformation about vaccines, treatments, and diseases spreads across digital platforms faster than peer-reviewed research can counter it. Bell's approach, strategic, timely, and rooted in reputable publication, serves as an early model for what we now call health communication and health literacy. His letters show that even in the 19th

century, medical professionals were thinking proactively about how to effectively reach audiences with trustworthy knowledge.

Moreover, Bell's transatlantic gesture, sending his father's medical volumes to Billings in the U.S., represents one of the many building blocks of the National Library of Medicine. This act was not simply charitable; it was strategic. It was a recognition that robust public health systems are built on strong knowledge networks. Today, those networks are digital and global: data-sharing across countries, cross-institutional research collaborations, and open-access repositories are vital in managing emerging threats like COVID-19, antimicrobial resistance, and chronic disease burdens. The Bell-Billings correspondence underscores the foundational importance of inter-institutional trust and academic generosity in achieving large-scale health impact.

Additionally, Bell's direct question, "Would your government sanction such an expense?", demonstrates a tension that is still unresolved today: how much should governments invest in health infrastructure that supports prevention, education, and long-term capacity? Public health departments today struggle to secure sustainable funding for exactly the same kind of dissemination Bell was advocating. His appeal for modest, proactive investment offers a lesson: even small-scale interventions, such as strategic journal advertising, can have a ripple effect on public awareness and professional development.

These letters also provide a powerful reminder that public health is fundamentally relational. Behind the policies and programs are people engaging in knowledge exchange, persuasion, and shared commitment to improving population well-being. Today, as trust in

institutions fluctuates and the healthcare workforce navigates burnout, polarization, and funding constraints, returning to this kind of personalized, mission-driven communication can serve as a model for restoring credibility and purpose within the field.

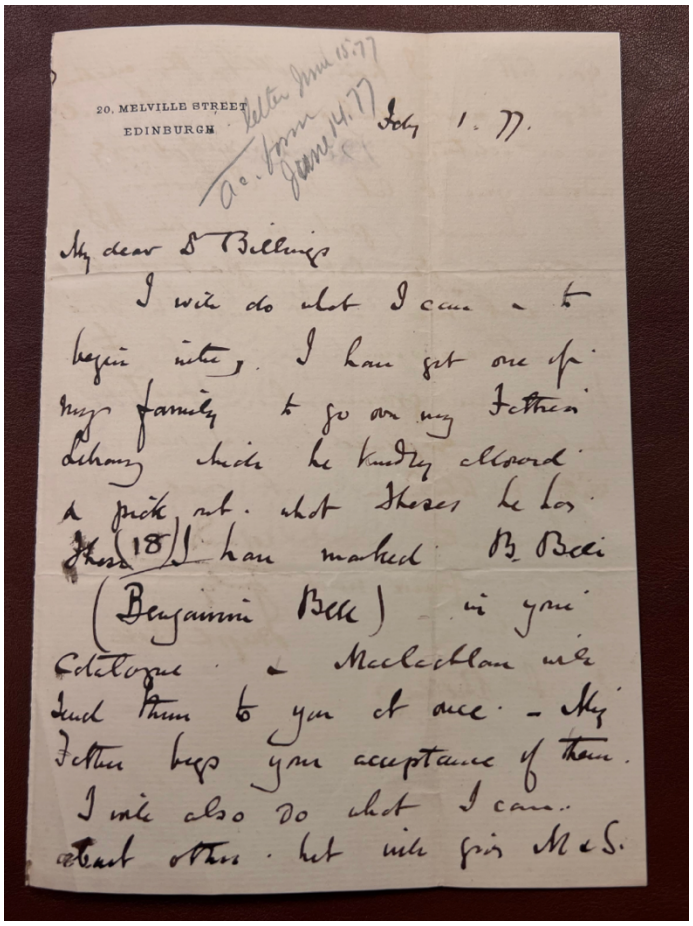
When I first walked into my introductory public health class, I never imagined that a fictional detective, a rare neurodegenerative disease, and a dusty letter from 1877 would each leave such a lasting imprint on my life. But just like Holmes sifting through clues others overlooked, I've come to recognize that public health, too, is about noticing the connections between people, between systems, between past and present. What began as a tragedy in my own life became the catalyst for a professional calling, and what started as an interest in science became a passion for service, policy, and prevention. In the stories of Joseph Bell and John Shaw Billings, I've found an intellectual lineage that grounds the work I want to do building systems that empower, inform, and protect people—especially those most vulnerable. Their letters, tucked away in the archives of the National Library of Medicine, are more than correspondence; they are blueprints for what thoughtful, coordinated public health efforts can look like, even across oceans. Bell's quiet offer of a family library, his push for outreach, and his recognition of the value of shared knowledge all remind us that public health is not built on dramatic breakthroughs alone. Sometimes, it is built on a five-pound advertisement and a well-timed letter.

As I graduate and move onto the next part of my education, I bring with me a set of values shaped by both science and story. I've learned that mystery and medicine are not so different—both require patience, observation, and a willingness to question what seems

obvious. And like Holmes, I've come to trust that even the most improbable path might be the right one if it's grounded in truth and pursued with curiosity.

The case of my undergraduate years is now closed. But the work of solving bigger, more complex puzzles in public health is just beginning, and thanks to the one-in-a-million experiences that have brought me here, I know exactly where to start looking.

Supplementary Photos



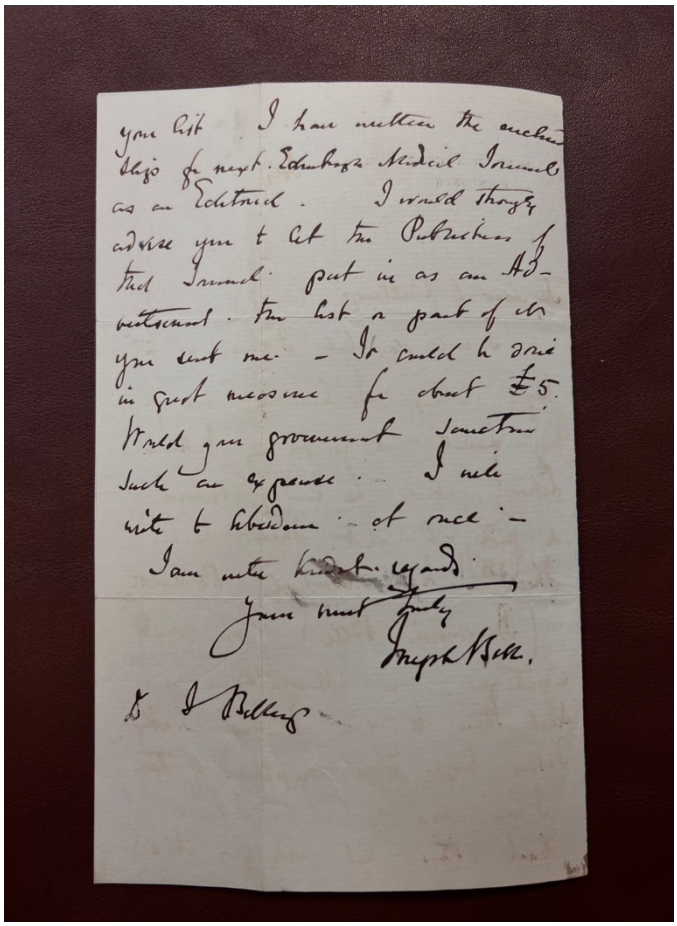
20. MELVILLE STREET
EDINBURGH

Letter from 15.7.77
Ac. from 14.7.77

July 1. 77.

My dear Dr Billings

I will do what I can – to begin with, I have got one of my family to go on my Father's Library which he kindly allowed a peep at. what Theses he has (18) I have marked B. Bell (Benjamin Bell) in your Catalogue – Macfarlan will send them to you at once. – My Father begs your acceptance of them. I will also do what I can about others. but with his M.D.

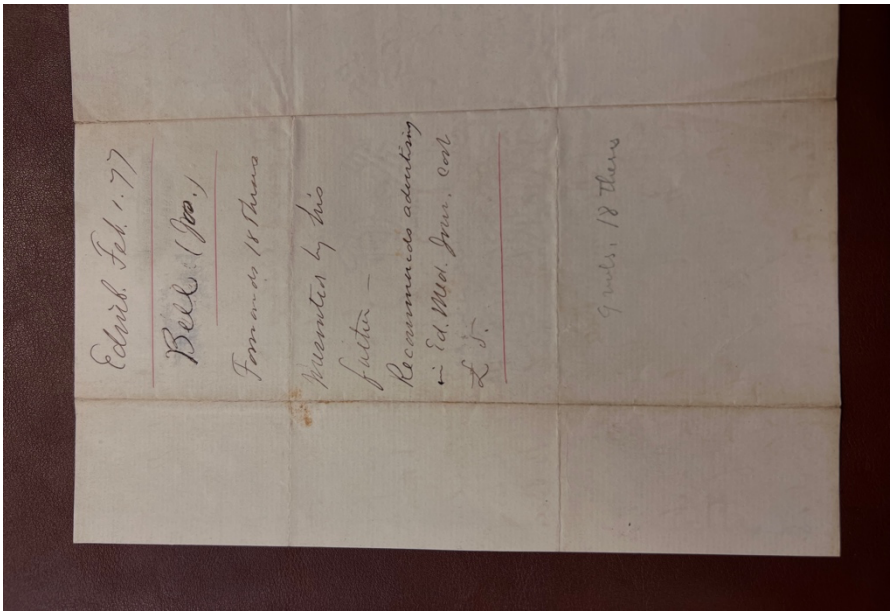


your list I have written the enclosed slip for next Edinburgh Medical Journal as an Editorial. I would thought address you to let the Publishers of that Journal put in as an Advertisement. the list a part of that you sent me. – It could be done in great measure for about £5. Would your government sometime such an expense. I will write to Aberdeen – at once. –

I am ever kindest regards.

Yours most truly
Joseph Bell.

Dr J. Billings.



Edinb. Feb. 1. 77

Bell (Jos.)

Forwards 18 Theses

Presented by his

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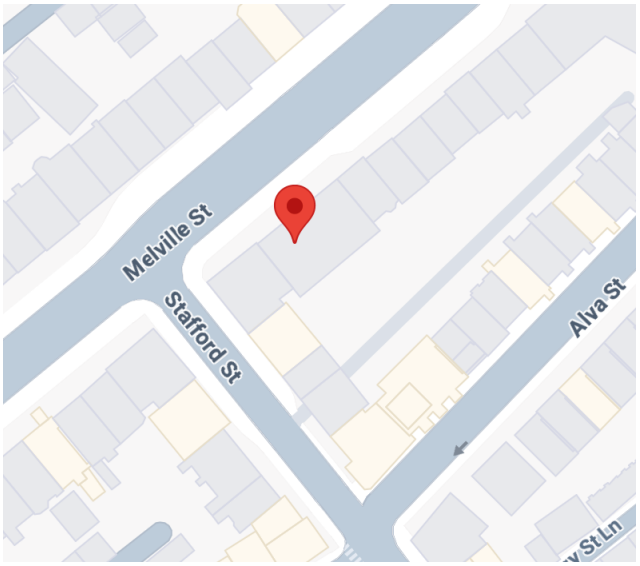
Factor –

Recommends advertising

in Ed. Med. Journ. cost

£ 5.

Grants, 18 Theses


Melville St
Stafford St
Alva St