Computer experts at the University of St Andrews have joined forces with international historians to shed light on one of the 19th century's great social transformations... How Britain gave up coffee to become a nation of tea drinkers.

Professor Aaron Quigley of the St Andrews School of Computer Science has helped design bespoke software enabling researchers to trawl historic trade documents that provide insights into the changing habit, which was accelerated by a failure of the Ceylon coffee crop.

Experts used a software technique called text mining to allow historians to pore over details of commodity movements between Britain and Ceylon, which became modern-day Sri Lanka.

Their discovery offers fresh perspectives into the tea trade, which stepped up after the outbreak of a fungus called coffee rust in Ceylon in the 1860s.

Ceylon's plantations switched their focus to tea growing and coffee production moved east to Indonesia – which is why coffee is sometimes known as java. Tea continued its rise as the hot drink of choice in British homes.

Although it was already known that the coffee rust outbreak impacted on British tastes, this new project enables researchers to build a clearer picture of how the process evolved.

The project is part of a wider initiative called Trading Consequences, which charts the commercial growth of the British Empire. It details the economic and environmental impact of shipping valuable commodities such as building materials, tea, fruit and spices.

Researchers used text mining – which is faster than manual reading – to survey thousands of digitised documents. Sources included British and Canadian Government documents, newspapers from around the world, books and journals.

Eleven million pages of text were processed, resulting in a 150 gigabyte database. Project users can access interactive graphics, generated from data, which help to make the findings more accessible.

The project has been led by the University of Edinburgh in collaboration with the Universities of St Andrews and Saskatchewan and York University, Canada. The EDINA national data centre at University of Edinburgh has stored information garnered in the study.

The two-year project forms part of Digging into Data, a wider initiative by Jisc, the UK's digital information body.

Professor Aaron Quigley, of the University of St Andrews, said: "The ability to explore the text mined data in various visualisations allows scholars to think about their research and inquiries in new ways. As a result we can expect new and unexpected insights opening new avenues of historical inquiry."

Dr Beatrice Alex, of the University of Edinburgh, said: "It is essential that the mined data is accessible and usable. Our text mining work is combined with engaging visualisations, which really bring the data from the historical document collections to life."

Dr Jim Clifford, of the University of Saskatchewan, said: "We have created a giant new database that allows us to explore the process of globalisation – already well underway during the nineteenth century – from a different perspective than that of previous studies."

More information: To find out more, please go to: http://tradingconsequences.blogs.edina.ac.uk/