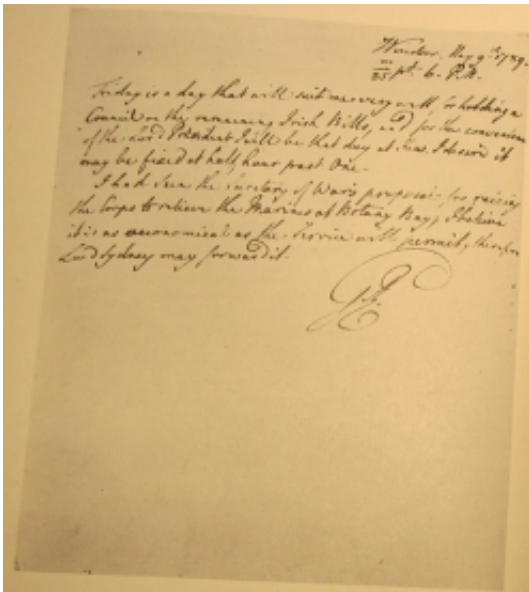# New methods to unveil the truth about the madness of King George

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(Phys.org)—Investigations into the nature of King George III's illness will reopen this year. Neuroscientists will pore over thousands of 18th century letters to and from the monarch, well known for his bizarre behaviour and wild outbursts, searching for clues to his mental state.

The question of whether King George III, who reigned in Britain between 1760 and 1820, was mad or misunderstood has been mused about since his outbursts were first documented in the late 18th century.

In King George's time, his ravings were treated as insanity; to control his outbursts the King was bound in a straitjacket and chained to a chair. Conclusions from more recent reappraisals of the historical evidence have included the inherited metabolic disorder porphyria and the psychiatric condition mania.

Researchers from St George's, University of London hope to shed more light on the conundrum by getting inside the mind of the troubled King, through an analysis of his written word.

Lead researcher Dr Peter Garrard said: "Language is seen and heard everywhere, as people communicate with one another in spoken and written format, apparently without effort. Ease of use, however, belies the complexity of the tasks of combining letters or sounds into words, words into grammatical sentences, and sentences into coherent discourse.

"Because using language involves so many interacting aspects of brain function, the study of spoken or written language has shown it to be a reliable marker of brain malfunction."

Later this year the researchers will begin the task of trawling through 10,000 letters, varying in length from a few lines to 300 words, between the King and the prime ministers of the time, approximately half of which were written by the King. By contrasting letters penned before and after known periods of mood derangement, the researchers will identify textual characteristics associated with mental ill health, such as abnormalities of structure, organisation or coherence in language.

These characteristics will be measured using a specially designed computer programme that creates a statistical model of word and sentence meaning. The model is used to specify the similarity or difference between pairs of words or phrases – the representation of words with similar meanings (such as 'king' and 'monarch') will be close

together, while those that differ in meaning (such as 'king' and 'cabbage') will be far apart.

Dr Garrard said: "Large volumes of correspondence between King George III and senior parliamentarians still exist today. Gaps in the correspondence correlate with known periods of mental derangement, but letters immediately preceding these intervals and those in the early weeks and months after writing resumed may shed light on the occurrence, and perhaps eventually the nature, of the King's mental ill health."

In a preliminary analysis, Dr Garrard and colleagues compared the coherence of sequential series of letters, written before and after a well-documented period of illness in 1788-89. Early results suggested that the King's letters became less similar in the months before the onset of psychiatric symptoms, while those of his correspondent (William Pitt the Younger, the Prime Minister of the day) remained thematically consistent.

To create a more accurate picture of how language was used in the 18th century, as well as a benchmark for the analysis of the King's writings, the research team will construct a database from samples of English written during this period. This database will be publically available and will help historians shed light on the mental processes of other figures from the same period.

The study, which is funded by the Leverhulme Trust, will be the first time a computer-based technique has been used to analyse words from the 18th century with a view to providing insight into the writer's mental health.

Dr Garrard explains that analysing the written word is, however, more than a tool for historical analysis and also has practical implications on

the treatment of mental health patients today. He said: "A similar use of words has been seen in patients with severe mental illness, and could have practical applications for patient monitoring or as an early warning signal of relapse."

Provided by St. George's University of London

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