Analysis of letters written by 'Mad' King George III supports psychiatric diagnosis of mania

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Researchers have concluded that King George III was probably suffering from a mental illness after computer analysis of hundreds of his letters.

When programmed to 'read' historical texts by scanning for certain features, a computer 'learned' to predict the King's mental illness from the characteristics of his writing.

The 1994 film The Madness of King George portrayed aspects of the King's behaviour and researchers now say his letters reveals that the cause of his illness was most likely to be due to a mental health problem rather than a physical disease. In a control condition, the computer found no difference between the language used in circumstances that could also have influenced the King's mental state, such as the different seasons, or periods when the country was at war or in peacetime.

This implied that the differences the computer did identify were specific to mental illness – probably an 'acute mania'- a term used to describe an excitable, hyperactive condition. In today's modern psychiatric terminology this might form part of a diagnosis of bipolar disorder.

The researchers at St George's, University of London had previously argued that the King probably suffered from episodes of 'acute mania', rejecting the once popular notion that his well described periods of strange behaviour were the result of the inherited condition porphyria.

Peter Garrard, Professor of Neurology at St George's, said: "King George wrote very differently when unwell, compared to when he was healthy. In the manic periods we could see that he used less rich vocabulary and fewer adverbs. He repeated words less often and there was a lower degree of redundancy, or wordiness."

Professor Garrard has previously shown how language changes can give clues to the behaviour of other well-known figures, including the onset of dementia in the novelist Iris Murdoch and the development of hubristic tendencies in British Prime Ministers. He concluded: "It would be fascinating to look at how modern patients write during the manic phase of bipolar disorder, as this could create a definite link to King George and possibly other historical cases of the illness.

"The technique could then be applied to the analysis other historical figures' language in periods of health and illness, as well as patterns of language production in contemporary politicians such as the new U.S. President Donald Trump."

  More information: Vassiliki Rentoumi et al. The acute mania of King George III: A computational linguistic analysis, *PLOS ONE* (2017). DOI: 10.1371/journal.pone.0171626

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