

# Computerized Analysis Helps Researchers Define Shakespeare's Work Using 'Literary Fingerprint'

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A team of researchers that includes scholars from the University of Massachusetts Amherst is using computerized analysis of the writing of William Shakespeare to dispel lingering doubts about his authorship of many works and to trace the outlines of his total body of compositions.

Using a method called computational stylistics, the researchers count the frequency of common words, and rare words, to detect Shakespeare's writing style, producing his distinct and unmistakable "literary fingerprint" that can be used to determine if and when there have been collaborations and what exactly Shakespeare wrote. The Shakespeare "fingerprint" also provides strong evidence that he, and not other authors, wrote the works generally believed to be his, because each of the other authors has a unique literary "fingerprint" that is different.

For example, Arthur F. Kinney, director of the Massachusetts Center for Renaissance Studies at UMass Amherst, and one of the lead researchers says, using this method, "I have now proven that Shakespeare is part-author of Arden of Faversham. They guessed that in the 19th century but no one would believe it in the 20th century. Now we know." The methodology will now be used to look into whether Shakespeare revised King Lear or whether he was in the habit of having other authors revise his original works.

The research team is led by Kinney and Hugh Craig director of the

Centre for Linguistic Stylistics at the University of Newcastle in Australia. Craig says computers allow researchers to develop a database of Shakespeare's works in old spelling and a database of the other major playwrights of his time and their works. Comparing the individual "fingerprints" reveals who wrote a particular work as well as cases where there are collaborations.

Kinney says now that Shakespeare's "fingerprint" has been defined by the team, it can now be applied to a large body of works where authorship is unknown or questioned. "I think this will be the next turn in Shakespeare studies." Kinney says.

The team is currently writing a book to be titled, "By Me, William Shakespeare" which will contain the first round of findings. The archive they have created will be made public after publication in early 2007, Kinney says.

Other initial findings that were made public this summer by UMass Amherst graduate students working on the project include:

- \* Philip Palmer at last demonstrated that Shakespeare had nothing to do with the writing of Edmund Ironside, although a recent edition gives him sole authorship.

- \* Kevin Petersen noted that although people think Shakespeare was influenced by Montaigne's skepticism in his work from Richard II through Hamlet to The Tempest, and was the source of his skepticism in parts of many of his plays, in fact there is no indication of any Montaigne – in French or in the popular English translation.

- \* Timothy Watt at last proved that Hand D in the manuscript of a play called The Book of Sir Thomas More is Shakespeare's own handwriting and so extends examples of his writing past the seven signatures which

alone have been attributed to him.

\* Youngjin Chung and K. C. Elliott report that stage properties, such as coins and cups, are associated with particular genres, so that comedies can be distinguished from tragedies, and playwrights writing for a genre had a specific list of props to use and write to.

\* Graham Christian has shown that Shakespeare's most unusual play, *The Merry Wives of Windsor*, heavily influenced a later play by Ben Jonson, *Bartholomew Fair*.

Source: University of Massachusetts Amherst

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