

# THE ELIZABETHANS

[by John H. Lienhard](#)

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Today, we visit a 400-year-old revolution. The University of Houston's College of Engineering presents this series about the machines that make our civilization run, and the people whose ingenuity created them.

**J**acob Bronowski and Bruce Mazlish paint an intriguing picture of the Elizabethan age. When we think about the Renaissance, we usually think about its origins in Italy. But they tell us how, in England, it finally died of Elizabethan excesses.

For me, the quintessential English renaissance man was Sir Walter Raleigh -- skilled poet, seaman, warrior, explorer, politician, and courtier. He captured the essence of a violent age, filled with duplicity and the struggle to find a philosophical center.

Renaissance humanism had mired into egocentricity. Renaissance alchemy was being overshadowed by the new sciences. Renaissance literature was trying to leave its vocabulary of coded allusions so it could regain some measure of directness and clarity.

Anyone who's ever sung Elizabethan madrigals has eventually learned their secret innuendoes and snickered at them. The language reflected the times, filled with intrigue and double meaning.

Shakespeare has survived so long because he rebuilt English into a language that could be understood by everyone. What Shakespeare began, a committee set up by Elizabeth's successor, King James, finished. They translated the Bible into English so direct and readable as to be a model of style until only recently.

Elizabeth died in 1603 and Shakespeare in 1616. The King James Bible was published in between -- in 1611. Meanwhile, the excesses of the Renaissance were collapsing.

Within the queen's court, the alchemist John Dee had read her fortunes in the stars, while her physician William Gilbert wrote a modern science of magnetism in modern terms. Two years after Dee died, Shakespeare mocked him (in a kindly way) as Prospero in *The Tempest*. That same year Ben Jonson's play, *The Alchemist*, simply ridiculed him. Science was to be a decisive battleground between old thinking and the new.

In 1609, Raleigh's tutor, Thomas Hariot, bought a new Dutch telescope and used it to view the rough surface of the moon and spots on the sun. Five months later, Galileo did the same thing in Italy and began his own scientific and religious revolution.

Like Galileo, Harriot had contradicted the old ideas about perfect planets. And like Galileo he also called for a new cosmology. When he wrote, "Out of nothing you can make nothing," he told us we'd have to go beyond the Biblical account to find our origins.

So an era closed down in the early 1600s. Only a few people saw the magnitude of the change coming. [John Donne](#) was one. The same year the King James Bible came out, he wrote:

*The new Philosophy calls all in doubt  
the element of fire is quite put out;  
The sun is lost, and the earth, and no man's wit  
Can well direct him where to look for it.*

I'm John Lienhard, at the University of Houston, where we're interested in the way inventive minds work.

(Theme music)

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Bronowski, J., and Mazlish, B., *The Western Intellectual Tradition: From Leonardo to Hegel*. New York: Barnes & Noble, 1960.

I am grateful to Catherine Patterson, UH History Department, for her counsel and expertise on this episode.

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