

Carl Djerassi

(1923–2015)

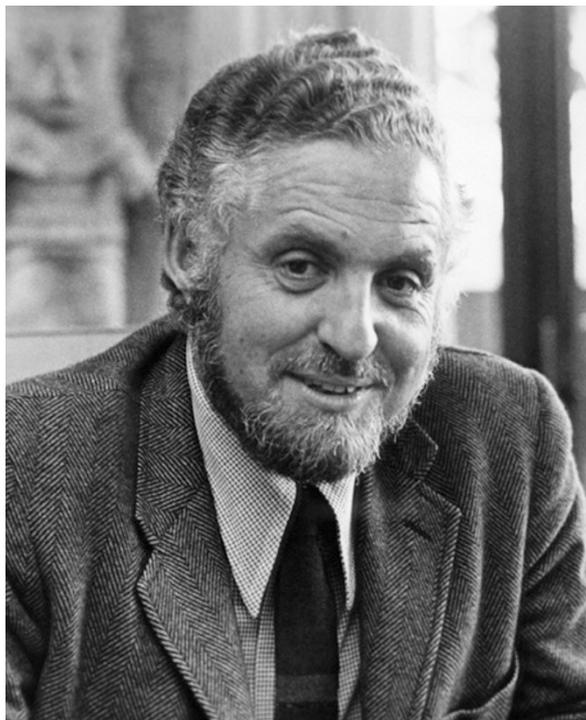
Chemist, writer and contraceptive-pill pioneer.

Few scientists have changed society as much as Carl Djerassi did. By chemically synthesizing a steroid mimic of the hormone progesterone, Djerassi paved the way for the oral contraceptive pill, allowing women for the first time reliably to take control of their own reproductive choices. Djerassi's conviction that 'the pill' made the sexual liberalization of the 1960s possible is widely shared, and chemical control of the fertility cycle was a key ingredient in subsequent advances in reproductive technologies, beginning with *in vitro* fertilization (IVF) in the late 1960s.

This alone would have warranted Djerassi's acclaim as a scientist. But he also made important contributions to the synthesis of antihistamines and other natural products, pest control using hormone derivatives, mass spectrometry and computerized methods for the determination of complex molecular structures. He spoke and wrote extensively about the role of science in society and the ethical dilemmas it brings up. He also wrote fiction and plays. Calling himself an "intellectual polygamist", he showed how science could and should make its presence felt outside the laboratory.

Djerassi, who died on 30 January aged 91, was born to Jewish parents in Vienna in 1923. His parents separated in the late 1930s, and in 1939, following the Nazi annexation of Austria, he left with his mother for the United States. His PhD at the University of Wisconsin–Madison concerned the chemical transformation of human male and female sex hormones. In 1942, he joined the pharmaceutical company Ciba in New Jersey, where he took out a patent on one of the first synthetic antihistamines.

Djerassi started working at the small pharmaceutical company Syntex in Mexico City in 1949. There he established how to synthesize cortisone from a natural product derived from the Mexican yam. He then found that the same starting compound could yield norethisterone, a mimic of progesterone, which controls the female menstrual cycle. The discovery was developed in the late 1950s by biologist Gregory Pincus and gynaecologist John Rock, both of whom had conducted early work on IVF,



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to create a commercial contraceptive pill. Such pills were first approved in the United States in 1960.

The previous year, Djerassi had joined the chemistry department at Stanford University in California, where he stayed until he retired in 2002. His connection with the Syntex Corporation, of which he became director in 1960, and with the insect-control company Zoecon, which he founded in 1968, made him rich. Numerous awards followed.

Whereas many would have rested on their laurels, in his seventh decade Djerassi began a career as a writer and playwright, starting with the novel *Cantor's Dilemma* (1989). He styled himself an "intellectual smuggler", bringing science, under the guise of entertainment (which he called science-in-fiction), to audiences who might normally have recoiled from it.

His most successful play, *Oxygen* (2001), written with chemistry Nobel laureate Roald Hoffmann, explored the deliberations of a Nobel committee deciding whether to award a retrospective prize for the element's discovery to Antoine Lavoisier, Carl Wilhelm Scheele or Joseph Priestley. Like several of Djerassi's other works, it examined how scientific credit is

awarded and the personal dynamics of research. The work of which he was most proud, however, was *Foreplay* (2011), which explored the sexual intrigues between a quartet of early-twentieth-century German intellectuals. His investment in the arts was profound and literal. Motivated by the suicide of his artist daughter Pamela in 1978, he founded an artists' colony in Woodside, California, which has hosted more than 2,000 residencies.

Even when Carl was forced to use a walking stick, it was easy to imagine that he had simply forbidden old age to plague him. "I had regaled my wife [Stanford professor of English Diane Middlebrook] for years with macho pride that I intended ... to become the first non-retired centenarian professor at Stanford," he wrote. "I always allowed the barest of smiles to cross my face whenever I bragged in that fashion." That was Djerassi all over: proud to the point of arrogance, but at the same time mocking his own bombast.

No one who knew Carl would deny that there were prickly aspects to his character. He did not aspire to modesty and was quick to perceive slights. But his determination to grasp and grapple with what it means to be human in the modern age was admirable. His passion for the communication of scientific ideas was coupled with a profound aesthetic sensibility, as shown by his deep appreciation for the artist Paul Klee, several of whose works he owned.

Incredulity that Carl was never awarded a Nobel Prize was widely shared among his peers, and quite possibly by Carl himself. And his ambitions in writing and communication were not always welcomed even in his own institution, where he was once told that "in recent years your interests have been far removed from those most highly valued by your department".

Hopefully academia is more ready now to recognize the value, indeed necessity, of professional scientists who turn their energies to public engagement and to embedding science in its social context. Few have tried harder to do that than Carl Djerassi. ■

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