

“When a molecule develops strong personality and refuses to submit to the common rule, the organism is dangerously threatened. In an ideal molecular society, each molecule works for the community, that is, for the organism. This is what happens normally. Yet a molecule sometimes decides to get rid of the shackles of a co-ordination, and work for its own profit. As a rule, all sort of molecular diseases are produced. Molecular freedom is a catastrophe.” Andrew Lwoff, Biological Order, MIT Press, 1965 (MIT, 1962), p. 8

Proposed DNA Plot Synopsis

The play reflects the world changing events that took place over 27 months from Jan 1951 until March of 1953, during which scientists in leading laboratories throughout Europe and the United States struggled mightily to understand the structure and purpose of DNA. It was clearly a central question that had captured the minds of leading scientists like Linus Pauling. It also was the center of struggle which caught up:

Rosalind Franklin, age 32, newly hired research scientist at Kings College, London. Raised with a prominent and upper middle class Jewish family, she has just returned to England after great success in France, using X-ray crystallography to study different forms of carbon.

Maurice Wilkins, age 35, assistant director at the King’s College laboratory, conducting research into the structure of DNA, formerly in the service working on the Manhattan Project, and a long-time friend of

Francis Crick, age 35, still working on his PhD on hemoglobin at Cambridge, also formerly in the army. He is enormously intelligent and charismatic, but unfocused. His vitality attracts

James Watson, age 23, newly arrived from the US to begin work as a postdoctoral fellowship at the Cavendish at Cambridge, supposed to be conducting research on RNA.

Raymond Gosling, a PhD candidate under the direction of Maurice Wilkins, who is assigned to work with Franklin on the micro-crystallography by Wilkin’s supervisor, J.T.Randall.

Odile Crick, Francis Crick’s wife, a photographer and artist raised in Paris, a dedicated hostess and bon-vivant

Locations

- Kings College Laboratories in Kings College London
- Cavendish Laboratories at Cambridge
- Francis and Odile Crick’s apartment and studio in Cambridge
- Rosalind Franklin’s small studio apartment
- Podium of Nobel Prize Ceremony, 1962

The action begins in September 1951.

Franklin/Wilkins strand		Watson/Crick strand
1) Rosalind writes to ask for fellowship to photograph proteins in order to determine its role in the basic molecular structure of cells		2) Watson writes for fellowship to go to Cambridge based on his excitement about research about the symmetry of DNA base pairs and the new indications that-- that DNA-- not protein-- "is the transformative principal."
3) Rosalind receives notice she has been hired and she will work on DNA and Raymond Gosling will work for her. She is thrilled she is given her own research and laboratory. She is not told that Wilkins is to be her partner and supervisor.		4) Watson is given fellowship, but is disappointed that he is not being asked to work, on DNA, but on "phages", an early term for viruses.
5) Wilkins comes back from his holiday, discovers Franklin working on a rare and special DNA sample he got from Signer, He assumes she is his assistant, she refuses. 1st row.		6) Watson arrives in Cambridge, finds Francis Crick entertaining the team with tea made over a Bunson burner. Immediate spark of ideas about whether DNA is the building block of life
7) Kings researchers organize to go to the staff dining room. Rosalind prepares to join, but is told she can't go. Wilkins, " So sorry, women not allowed to eat in staff dining room"...No one but her shocked. "Things were equal in France"... "That was France, this is England."		8) Crick holding forth at the pub, telling jokes about staff. Watson starts an insult circle about Rosalind. Great hilarity by all
9) Rosalind and Gosling struggling to get the x-ray technology to work. Obvious radiation of Rosalind holding the camera to get the photo. Frustration.		10) Watson and Crick, leave their assignments and begin furious discussion of chemical structure of molecule. Lots of drawing on paper and enacting of necessary spatial relationships within the molecule.

Franklin/Wilkins strand		Watson/Crick strand
11) Rosalind brings in a drawing of new camera she has designed which will be capable of taking the photos needed. Big fight with Wilkins about budget and authority.		12) Watson and Crick both receive a memo telling them to focus on their own work, instead of spending so much time in discussions on DNA. Chastened, both return to own laboratories.
13) Rosalind, working alone after Gosling has finally left in exhaustion, making notes, making adjustments, getting radiated, begins to get sharp photos of two different forms of the molecule. Both excited and confused by the clarity of the images.		14) Watson and Crick at Crick's house, still discussing DNA, begin using Odile's art supplies to begin creating a model of the molecule: The scene is antic and ridiculous, but exciting
15) Rosalind's presentation on the two forms of DNA, public confrontation between Wilkins and Rosalind.		16) Watson goes to Rosalind's presentation on the two forms of DNA, stares at her, does not take notes.
17) Rosalind returns to her apartment, working alone, struggling with the data. Stops to rub eyes and put photos of her recent mountain climb in the Alps on her mantle, it is clear she wants to return to France.		18) Watson goes back to Crick's house, reports on the Wilkins/Rosalind fight and gives him a wrong assessment of the presentation, which starts them preparing a three strand model of DNA
19) Wilkins demands that Franklin turn over her research results to him. She refuses and Gosling is stuck in the middle. The argument escalates until Franklin physically forces Wilkins from the room. Gosling is appalled.		20) Wilkins goes to Crick to complain about Rosalind; they have much fun at her expense.
21) Franklin and Gosling get photo 51 which clearly indicates helical structure of the wet form of the DNA molecule. Both are at a loss to explain the dry form. Gosling encourages her to publish what they know already. She refuses until she can explain both forms.		22) Crick and Watson earnestly at work building a 3 strand model, with no regard to their supposed assignments

Franklin/Wilkins strand		Watson/Crick strand
23) Rosalind at work in laboratory. No one is speaking to her, her pariah status is blatantly obvious. She receives a letter from Crick and Watson inviting her to Cambridge		24) Crick and Watson show Rosalind their 3 strand helix model with sugars and phosphates on the inside. She arrogantly, but correctly, points out its lack of water and chastises them for not doing experiments, but choosing to play with "TinkerToy models".
25) Franklin returns to laboratory, composes her letter of resignation.		26) Watson and Crick have been told to "cease and desist". "We don't compete with our fellow colleagues from MRC". They are worried because they know that Linus Pauling has just published a paper on the structure of DNA.
27) Rosalind working away on her paper about forms of DNA, positing outside strands and double helix. Careful examination of multiple photos		28) Watson gets a draft of Linus Pauling's paper from his son Paul Pauling that shows that elder Pauling has got it wrong.
29) Watson runs to Kings to tell Wilkins, who is not there. He has a big confrontation with Rosalind. Rosalind leaves. Wilkins shows up at the last minute, Watson/Wilkins complain about Rosalind, Wilkins shows Watson photograph 51 and tell him that Franklin is leaving King. Watson tells Wilkins to get model building: Wilkins: I'll wait to do so until Rosalind is gone. Watson cannot believe they cannot see what they have---proof of two strand helical DNA		30) Watson runs back to Crick tells of photo---two strand helical shape, let's get a move on before they publish their results. Agitated model and math frenzy. Success and great joy when they figure out the necessary opposite pair bonding which makes DNA the engine of reproduction.
31) Franklin packs her bags to leave as she writes the final description of photos, which she sends to Nature as a partial explanation of the module. Clear sense of "not quite there."		Crick and Watson finish paper, with great joy at the beauty of their ideas which have never actually been tested; rush to put the paper in the mail to Nature
33) Epilogue: Nobel Prize ceremony, 1962 Crick asks if Wilkins if he is going to give Rosalind some credit. Wilkins is flustered, but adds a brief mention of her death by ovarian cancer. No		

mention by either Watson or Crick. No mention of her photography.		
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