

Visualising Complexity: Exhibiting Science and Statistics in the Mid Twentieth Century

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Artist John Ernest constructing Polystyrene tobacco mosaic virus (TMV) model based on Aaron Klug and Rosalind Franklin's research in 1958 at Birkbeck College for the International Science Pavilion, Brussels World Exhibition, 1958. © John Finch/MRC Laboratory of Molecular Biology.

Designing Science: The Display of X-Ray Crystallography in Post-War Britain

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This paper explores how design mediated scientific knowledge and official messages regarding science in post-war Britain, with a focus on public exhibitions. It centres specifically on the science of X-ray crystallography: British X-ray crystallographers produced cutting-edge research in the mid-twentieth century, not least of which was the discovery of the DNA double helix. Their investigations into the structures of matter – of atoms in crystals, molecules, and viruses – were often highly visual. X-ray crystallographers' representations of these structures have long been associated with post-war British design, particularly the 'mid-century modern' style. X-ray crystallography, however, has received little attention in design history.

The historical memory of X-ray crystallography in mid-twentieth-century British design provides a way in to this topic. Today, the period's history of science, and X-ray crystallography specifically, is remembered in part through design: the Brussels Atomium, for instance, and the Festival of Britain's exuberant crystal structure patterns for textiles, wallpapers, metal and more. The historical memory prompts questions about communication, transmissions and historiographical relationships between the worlds of design and science. These include questions about how the representations of a rather complex science, X-ray crystallography, travelled beyond the laboratory and even became emblematic of a kind of 'period design' in historical memory and collecting cultures decades later.

This paper places X-ray crystallography's representations within a broader context of molecular imagery in design emanating from adjacent fields, and zooms in on Britain, where the public display of X-ray crystallography served political goals. It represented a less-threatening 'atomic' than that of the bomb, and, as a home-grown science with prominent researchers in the UK, was ripe for national promotion. Designed molecular and atomic structure forms circulated through public exhibitions, including crystallographic imagery at the Festival of Britain and 1958 Brussels World's Fair. The paper presents new findings on their reception, and identifies design communities as an important 'public' for the science of X-ray crystallography. It concludes with reflections on how a more porous border between histories of design and science can yield new angles on the circulation of scientific knowledge through designed artefacts 'in public'.