

Noises Off (very, very loud ones)



Atomic debate... Marsh, Burke and Kestelman in Michael Frayn's play about nuclear physics

scientist has the moral right to work on the exploitation of atomic energy. Given today's terrifying headlines about nuclear tests in Pakistan, the question has lost none of its urgency. And, in terms of the drama, Frayn presents us with a fascinating dilemma: was the saintly seeming Bohr, who eventually worked at Los Alamos, morally superior to Heisenberg, whose development of a German bomb was impeded by his failure to apply a crucial diffusion equation to uranium 235? Do we judge people by their motives or the consequences of their actions?

Frayn's play poses endless questions, but its dramatic excitement stems partly from the way it uses science as a source of moral debate. While breaking new ground, the play is also a natural extension of Frayn's previous work for the theatre. He once said that the key philosophical dilemma is that "the world plainly exists independently of us and yet it equally plainly exists only through our consciousness of it". And out of our attempt to impose our ideas upon the world Frayn has created a whole series of philosophical plays. In *Noises Off* we see actors vainly struggling to create order through the complex mechanics of farce: in *Copenhagen* we see physicists seeking to harness the fission properties of uranium isotopes. Significantly, both plays end with an acknowledgement of the power of uncertainty.

Review

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MICHAEL Frayn has always been a philosophical enquirer, and his dazzling new play *Copenhagen* is a logical extension of everything he has done before.

He starts from a fact and an enigma. In 1941 Werner Heisenberg, who was working on the German atomic bomb project, went to visit Niels Bohr, his private father-figure and Europe's leading quantum theorist, in occupied Denmark. What happened between them? What did they talk about? How did it affect the future of mankind? After all, the German project was unsuccessful, whereas Bohr later went to Los Alamos and participated in the development of the atomic bomb.

It's a brilliant starting point for a play and Frayn offers neither a docu-drama nor a definitive answer but an exploration of what Heisenberg calls "the final uncertainty at the core of things". We meet only Heisenberg, Bohr and Bohr's wife, Margrethe, who acts as our representative in that she demands an explanation of scientific

detail in layman's language. What we see are three characters, from the vantage-point of eternity replaying the endless possibilities of the collision between these human particles in wartime Denmark.

What Frayn does superbly is suggest a crucial equation between science and character. Heisenberg is famous for the uncertainty principle: the idea that the more accurately you know the movements of a particle, the less accurately you know its velocity and vice versa. Bohr went on to derive from this the theory of complementarity: that, if I understand it aright, mutually exclusive pairs of measurements are an indispensable part of quantum mechanics.

But the vital point is the dramatic use Frayn makes of this: the two physicists become the embodiment of their theories. Heisenberg's whole position in Denmark is marked by uncertainty: was he there to pick Bohr's brains about nuclear fission, to seek absolutism for his work on the bomb, or to show off to his surrogate father? Equally, Bohr recognises the importance of complementary phenomena: in his productive marriage, in his endless research partnerships, in the fissile tensions of his friendship with Heisenberg.

But nothing in the play is abstract or vague. Behind it lurks the question Heisenberg twice puts to Bohr: whether the

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