

THE
NOBEL
PRIZE

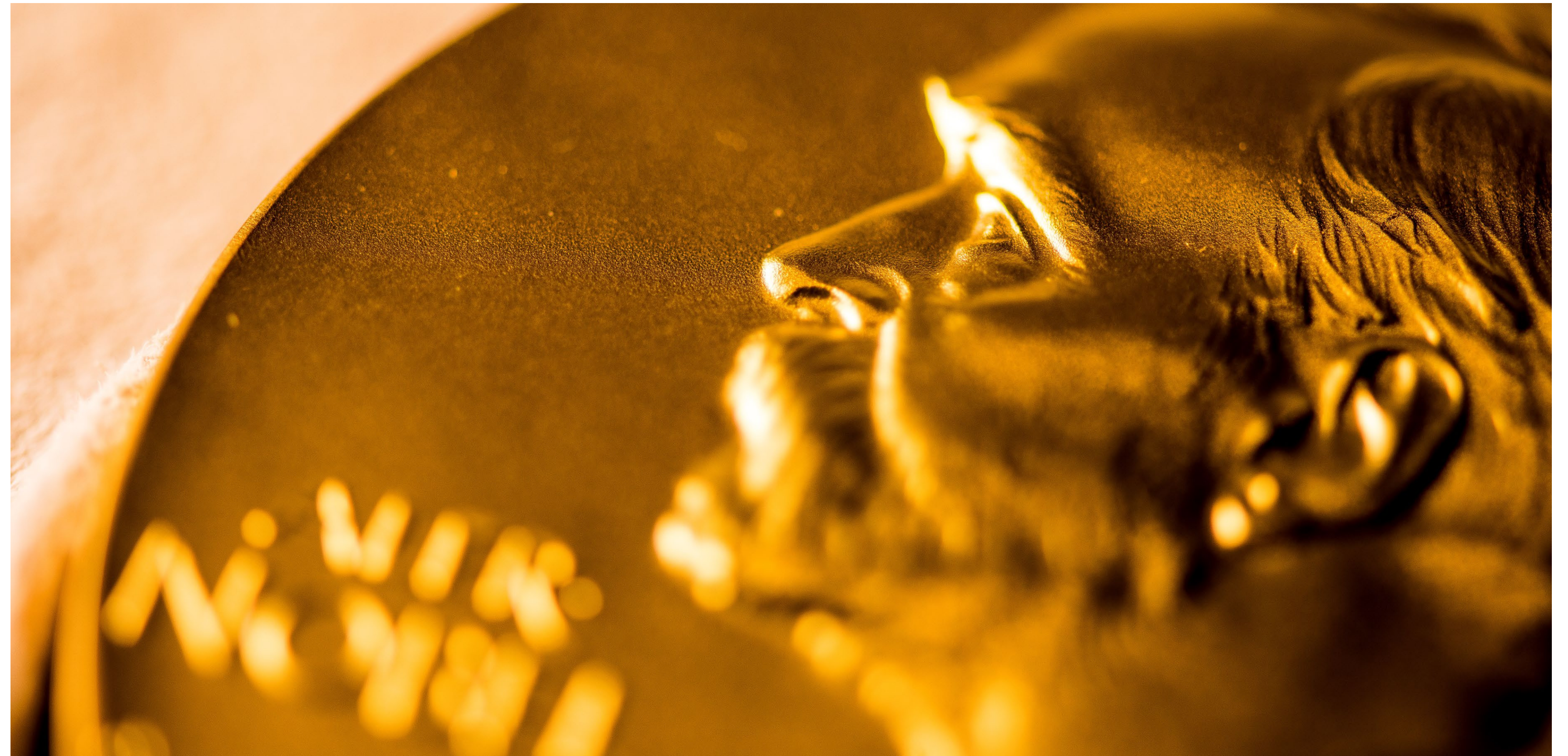
PHYSICS PRIZE 2022

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Research on
quantum mechanics

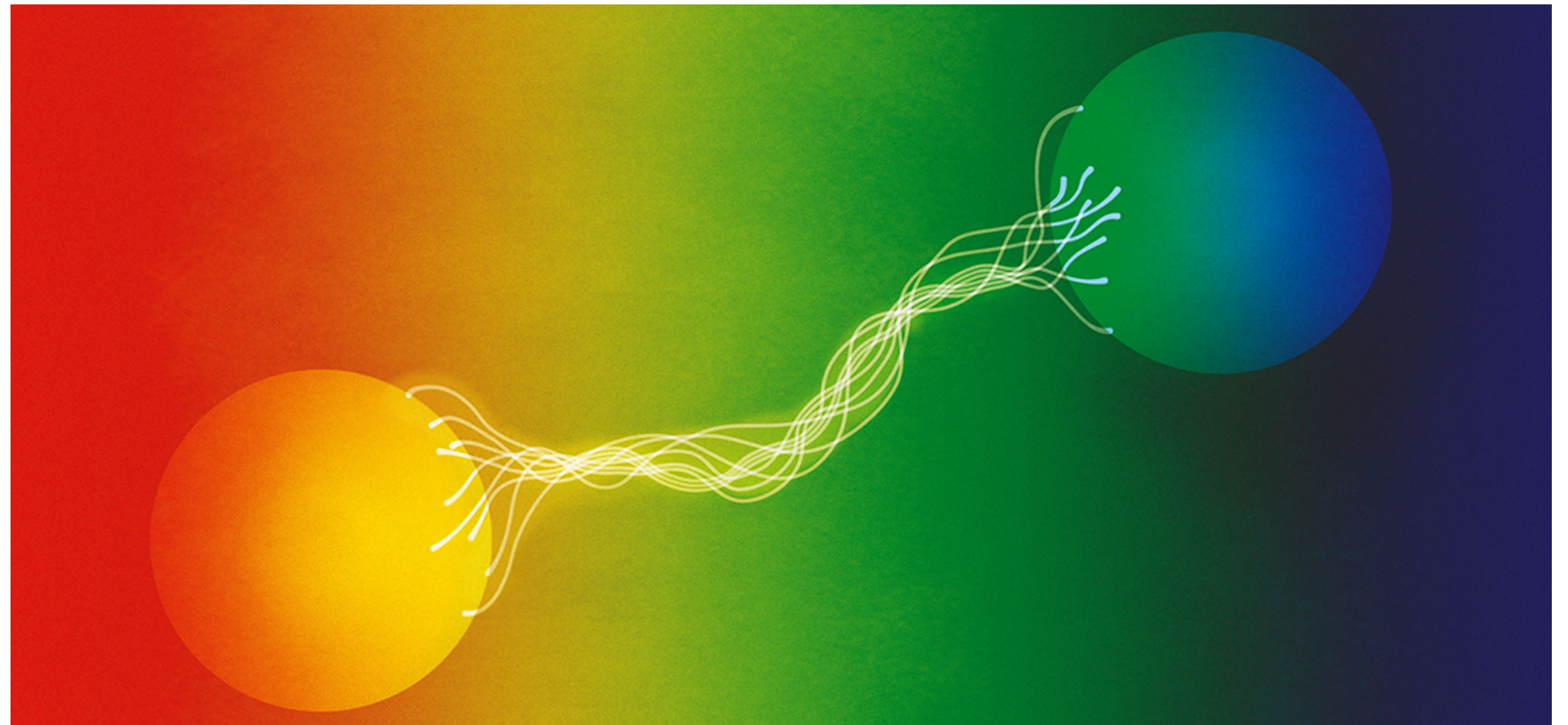
The Nobel Prize in Physics

“to the person who made the most important discovery or invention in the field of physics”



The physics prize 2022

The physics prize 2022 is awarded for experiments that make it possible to investigate and control particles that are entangled through quantum mechanics.



The 2022 physics laureates

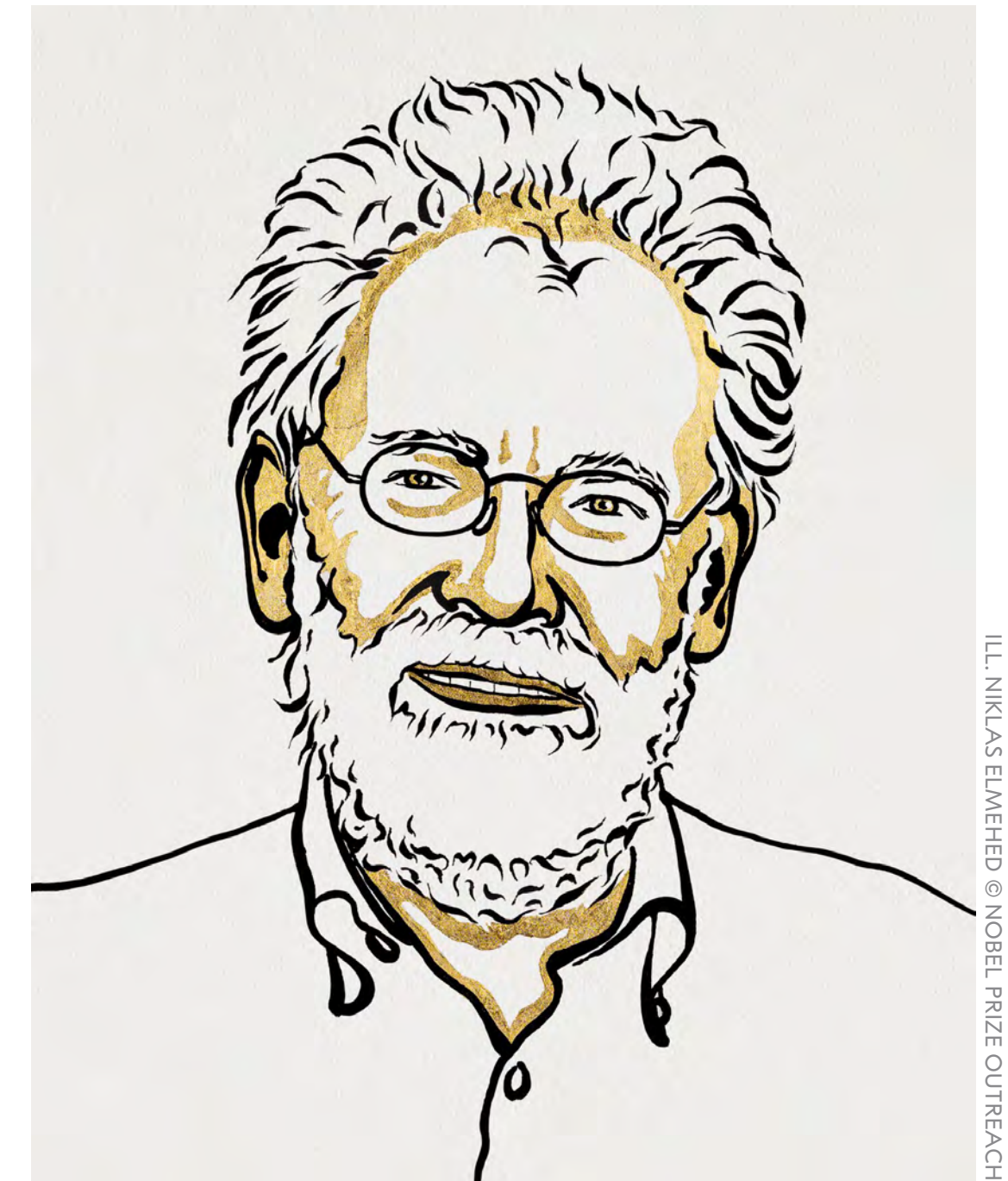
“For experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science”



Alain Aspect
Born: 1947, France



John F. Clauser
Born: 1942, USA



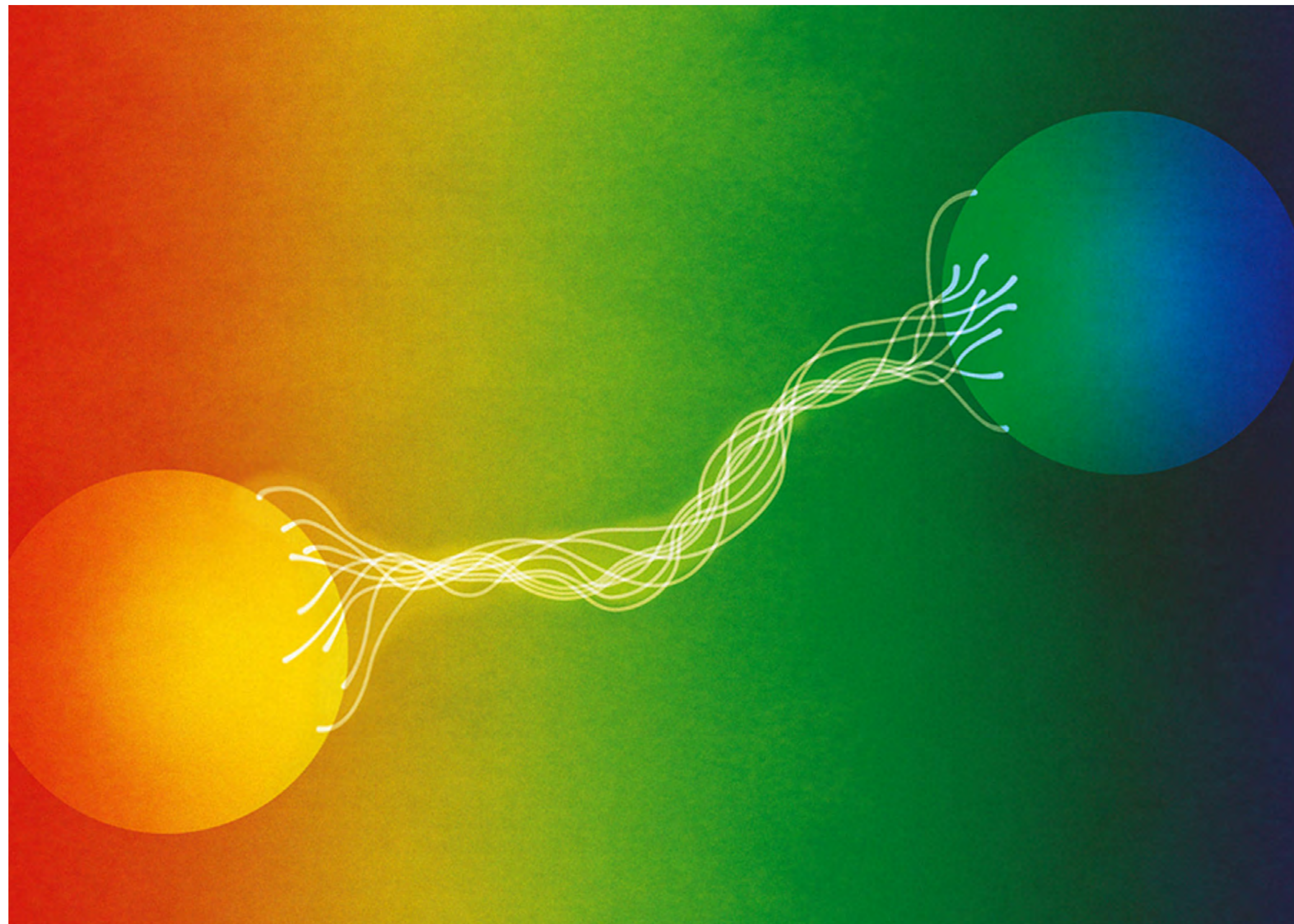
Anton Zeilinger
Born: 1945, Austria

Quantum mechanics



Is the world fundamentally governed by chance? Niels Bohr and Albert Einstein had different views of quantum mechanics.

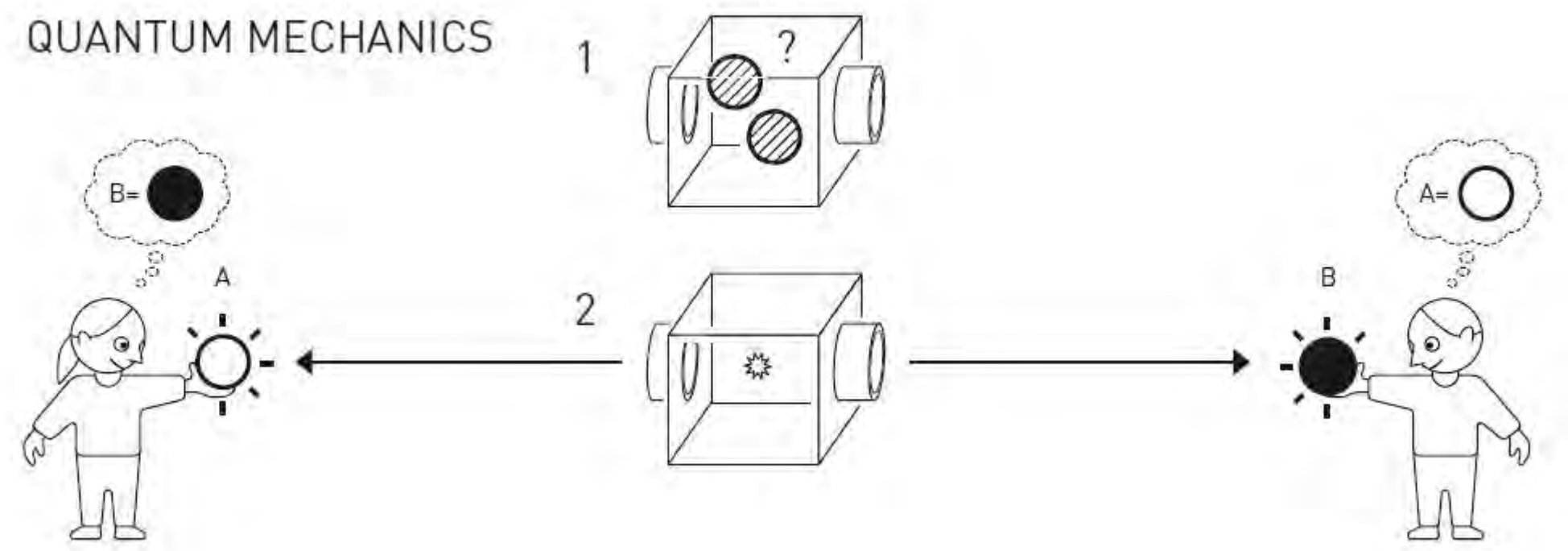
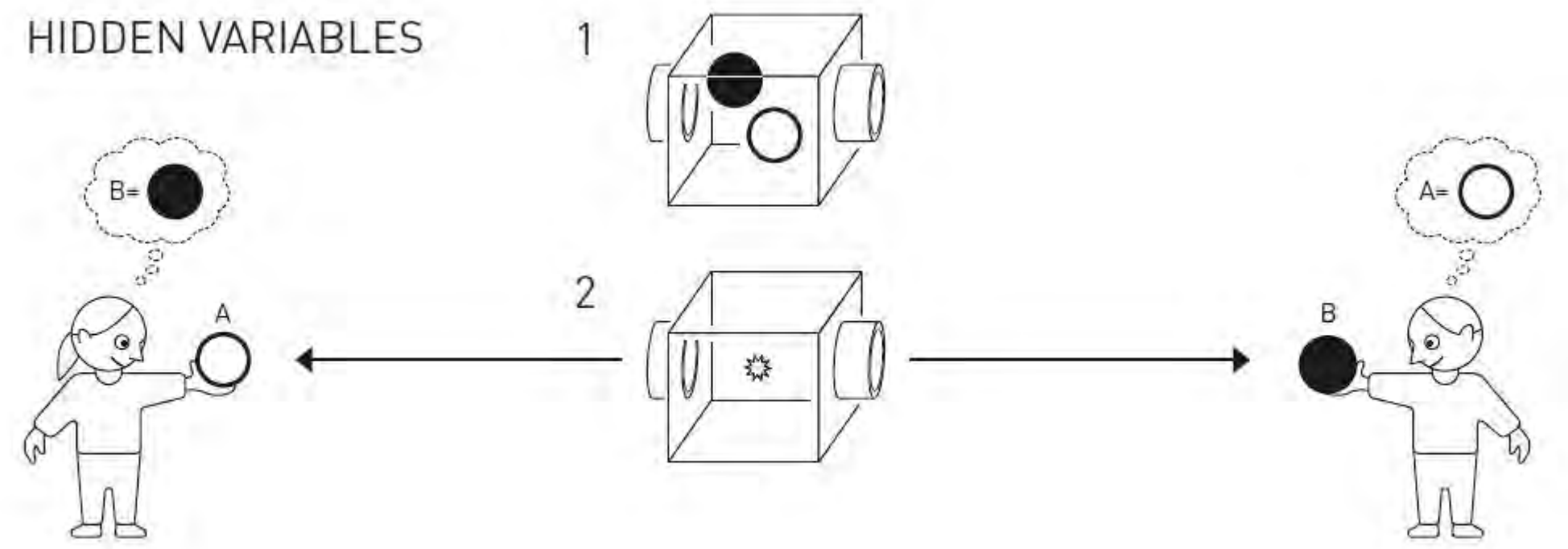
Entanglement



Can particles be connected across great distances?

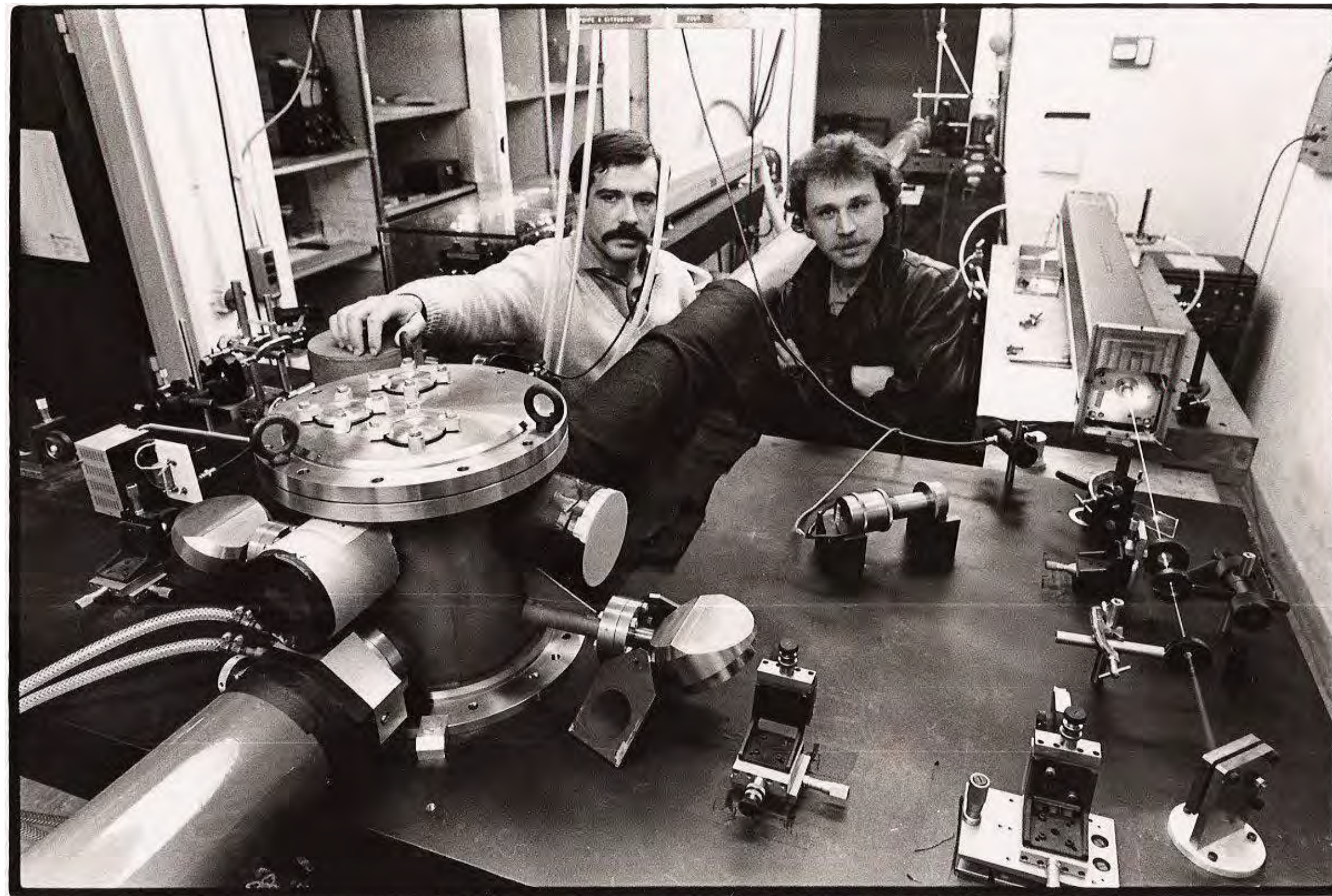
Thought experiment

Does colour exist when no one is looking?



Real experiments

The experiments prove: quantum mechanics is correct!



ALAIN ASPECT IN THE LABORATORY, 1981. © COLLECTIONS, ECOLE POLYTECHNIQUE

Quantum technology



Quantum encryption, quantum information and quantum computation.



PHOTO: JOHN DUKAT

“I was having fun. It was a challenging experiment. I thought it was important at the time, even though everybody told me I was crazy and was going to ruin my career by doing it.”

John F. Clauser, 2022 physics laureate

THE
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PRIZE

FOR THE GREATEST
BENEFIT TO
HUMANKIND

Nobel Prize Lessons