



K O N I N K L I J K E N E D E R L A N D S E  
A K A D E M I E V A N W E T E N S C H A P P E N

**The Dr A.H. Heineken Prize for Cognitive Science awarded to John Duncan**

Ladies and gentlemen,

John Duncan was born in 1955, the same year as Bill Gates and Steve Jobs. The latter two constructed rather intelligent machines, but John Duncan followed a different path. He deciphered the most intelligent machine on the planet: the human brain.

From the start, John Duncan was fascinated by the work of Donald Broadbent, one of his predecessors at the Medical Research Council in Cambridge.

Broadbent compared the brain to computers to help us understand how it works. Our brain collects new information through the senses, he explained, relates it to information in memory, and then creates output in the form of behaviour.

There was a problem, however. Research into the brain's hardware – that is nerve cells and chemistry – was virtually independent of research into the brain's software – that is behaviour and psychology. Here is where John Duncan came in.

Unlike others, Duncan reached over the walls that separated biologists and psychologists. He worked with both, using every new technique that he could find. By combining brain anatomy, brain physiology, and behaviour, he built bridges that young scientists can cross today.

Thanks to John Duncan's work, we have a better understanding of what happens in the brain when our eyes and ears compete, so-called 'selective attention'. And we have a better understanding of how the brain exploits and builds 'intelligence' in interaction with the contexts around us.

John Duncan demonstrated these processes not only in colourful brain scans, but also in the chemistry of individual brain cells and in behavioural experiments.

Two years ago, he wrote a best-selling book called *How intelligence happens*. In it he takes readers on a fascinating journey through cognitive science. Intelligence, Duncan keeps telling his audience, is something one can see at work in the brain. Another message is that we can help develop intelligence, not just in children but also in patients with serious brain disorders. The creation of intelligence is a continuing theme in his research endeavours.

Ladies and gentlemen, please join me in a warm round of applause for John Duncan, winner of the 2012 Heineken Prize for Cognitive Science.