

## Honorary doctorate acceptance speech by Robbert Dijkgraaf

Leiden, 8 February 2019

Honourable Rector Magnificus, your Excellencies, esteemed Honorary Supervisor and Dean, ladies and gentlemen,

Let me begin by saying how grateful I am to my dear Leiden colleagues for this unique honour, which means more to me than I can express in these few words here. This special moment in time and space ties together at least three important paths in my life.

The first of these, of course, is Leiden as the first university in the Netherlands, for centuries a steadfast bastion and symbol of academic freedom and excellence, and the upward spiral that the felicitous combination of these two virtues can bring. It is also an institution with a pleasing sense of the human dimension, and in spirit, 444 years young. In the words of Francis Bacon: *Antiquitas saeculi juvenus mundi*. This oldest knowledge institution grew up during the adolescence of science and has been successful in maintaining its youth.

The second is Dutch physics, as a discipline an example in terms of global impact and close collegiality. Like many of my colleagues, I have always felt as if I am wearing the orange strip of the Dutch football team – even though I am playing for a foreign club. But now it will be with the addition of the beautiful blue Leiden hood.

The third is science in all its diversity: a grand adventure for everyone, nourished by curiosity and imagination.

Today, I feel even more indebted to the renaissance of Dutch physics that began here in Leiden, with big names such as Kamerlingh Onnes, Van der Waals, Zeeman, De Sitter, Ehrenfest and, of course, my hero Hendrik Lorentz – role model and close friend of Albert Einstein, who himself was so fond of this city and university. Given this history, there was nowhere else that this path could lead but to my current place of work, Princeton. Physics at Leiden has always been strikingly broad-minded and international. As Einstein said: ‘Lorentz cannot be praised highly enough for having conquered his inner doubt and scepticism, those characteristically European diseases.’

I would also like to express my gratitude to my immediate colleagues with whom I have been fortunate enough to enjoy a long working relationship: in particular Edward Witten, Cumrum Vafa and, last but not least, Erik and Herman Verlinder. As PhD candidates in Utrecht, we soon learnt how to keep afloat after

we had been thrown in at the deep end by my supervisor – another shining example – Gerard 't Hooft, with the words: ‘You can work on anything you want, as long as it’s not what I’m doing.’ This gang of rebels at Princetonplein is best summed up in the words of a grumpy professor: ‘It all looks like nonsense to me, but I have to admit you lot seem to be having a whale of a time.’

As a scientist, you have no off switch, which is why, rather than banishing work from family life, you try instead to incorporate family life in your work. The personal support that I have received in the past, present and future is here today in the shape of my mother, my wife and partner in crime, Pia, and our oldest son Jurriaan. Thank you all for not having sent me packing long ago!

Finally, I would like to thank Mother Nature herself – according to Einstein, ‘subtle, but not malicious’ – who so willingly lets herself be captured in formulae. Thirty years ago I visited the Institute for Advanced Study in Princeton for the first time to work with my role model (and now my immediate colleague) Edward Witten on topological theories. It was a disappointing experience initially. Instead of probing discussions on the mysteries of the cosmos, we spent two whole weeks deliberating on a single minus sign. A lump in the carpet that we could not smooth out. Now 30 years later, this lump proves to explain certain states of matter. That you can capture something of reality in a chaotic scribble in a notebook is a miracle that fascinates me every day.

However, the world can be encapsulated not only in formulae but also in concepts, ideas, words, metaphors, images, data, devices, computer simulations and, of course, books. These reflect the enormous diversity of researchers and their interests. That is why science is also an adventure of, by and for everyone. As scientists we lead a privileged life and it is our duty to inform, involve, listen to and thank society.

I would like to quote Robert Louis Stevenson: ‘The world is so full of a number of things, I’m sure we should all be as happy as kings.’ As a scientist I get to feel happy as a king every day, and today I feel that bit happier again. Thank you, Leiden University.