

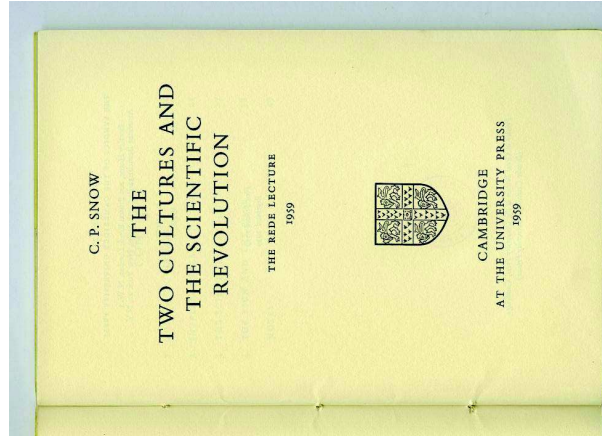
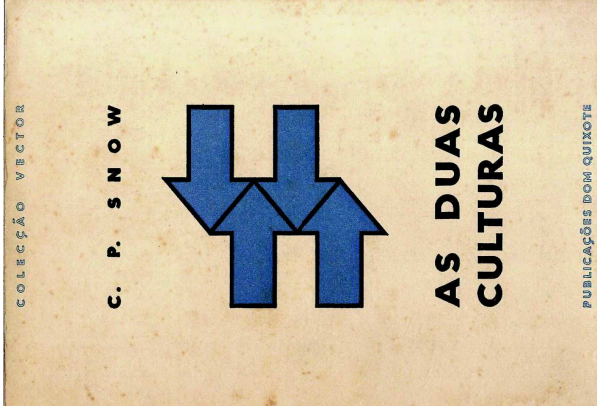
“Strangers and brothers”: Revisiting the two cultures

Carlos Fiolhais
University of Coimbra, Portugal

University of Porto, 27/10/2017

Charles P. Snow (1905-1980)





C.P. Snow, “The Two Cultures” 1

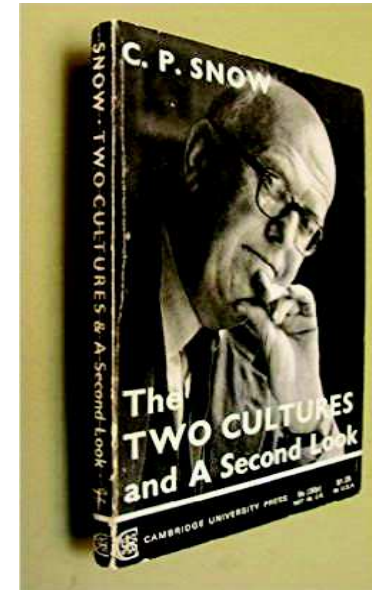
- "They are impoverished too —perhaps more seriously, because they are vainer about it. *They still like to pretend that the traditional culture is the whole of 'culture', as though the natural order didn't exist.* As though the exploration of the natural order was of no interest either in its own value or its consequences. As though the scientific edifice of the physical world was not, in its intellectual depth, complexity and articulation, the most beautiful and wonderful collective work of the mind of man. Yet most non-scientists have no conception of that edifice at all. Even if they want to have it, they can't. It is rather as though, over an immense range of intellectual experience, a whole group was tone-deaf. Except that this tone-deafness doesn't come by nature, but by training, or rather the absence of training."

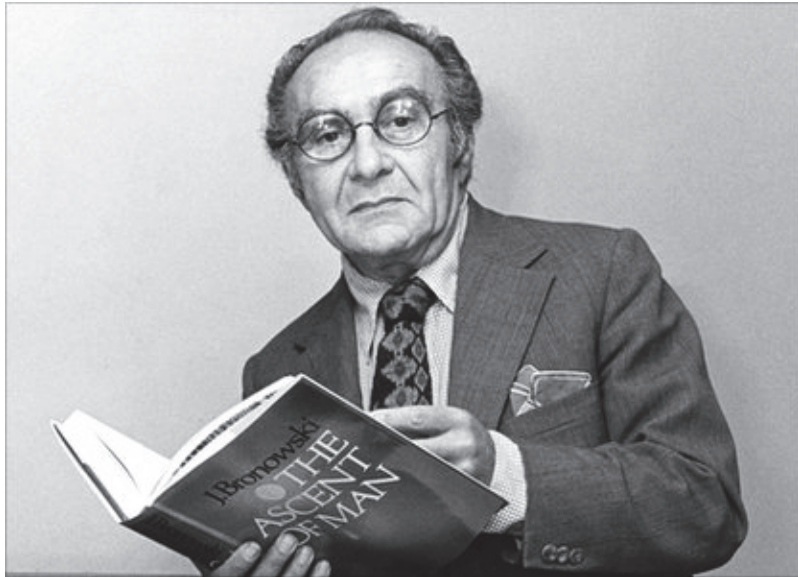
C.P. Snow, “The Two Cultures” 2

- "As with the tone-deaf, they don't know what they miss. They give a pitying chuckle at the news of scientists who have never read a major work of English literature. They dismiss them as ignorant specialists. Yet their own ignorance and their own specialisation is just as startling. A good many times I have been present at gatherings of people who, by the standards of the traditional culture, are thought highly educated and who have with considerable gusto been expressing their incredulity at the illiteracy of scientists. Once or twice I have been provoked and have asked the company how many of them could describe the Second Law of Thermodynamics. The response was cold: it was also negative. Yet I was asking something which is about the scientific equivalent of *Have you read a work of Shakespeare's?*

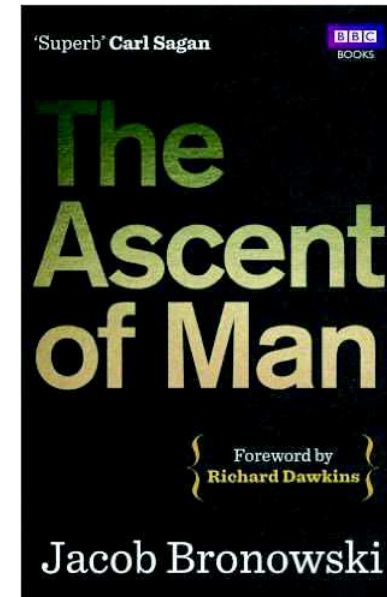
C.P. Snow, “*The Two Cultures*” 3

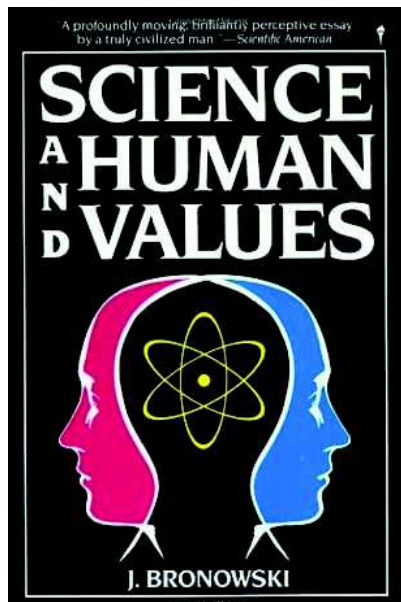
“I now believe that if I had asked an even simpler question —such as, What do you mean by mass, or acceleration, which is the scientific equivalent of saying, *Can you read?* —not more than one in ten of the highly educated would have felt that I was speaking the same language. So the great edifice of modern physics goes up, and the majority of the cleverest people in the western world have about as much insight into it as their neolithic ancestors would have had.”





Jacob Bronowski
(1908-1974)





Samuel Coleridge (1814)



- The most general definition of beauty, therefore, is - that I may fulfil my threat of plaguing my readers with hard words –
Multeity in Unity.”

Jacob Bronowski, *"The Ascent of Man"* 1

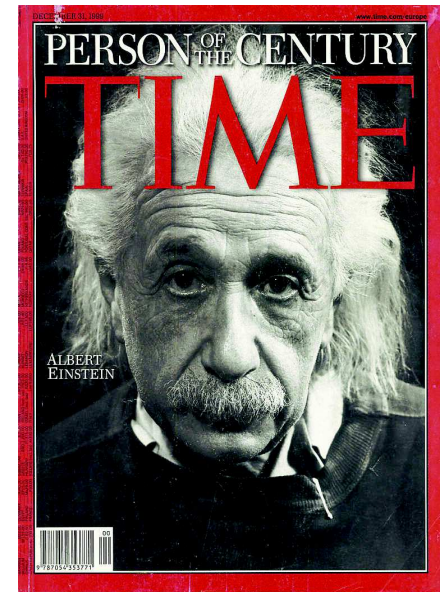
- "When Coleridge tried to define beauty, he returned always to one deep thought: beauty, he said, is 'unity in variety'. Science is nothing else than the search to discover unity in the wild variety of nature - or more exactly, in the variety of our experience. Poetry, painting, the arts are the same search, in Coleridge's phrase, for unity in variety. Each in its own way looks for likenesses under the variety of human experience. What is a poetic image but the seizing and the exploration of a hidden likeness, in holding together two parts of a comparison which are to give more depth each to the other?"

Jacob Bronowski, *"The Ascent of Man"* 2

- "The discoveries of science, the works of art are explorations - more, are explosions, of a hidden likeness. The discoverer or the artist presents in them two aspects of nature and fuses them into one. This is the act of creation, in which an original thought is born, and it is the same act in original science or original art."

Jacob Bronowski, *"The Ascent of Man"* 3

- "Poetry is a wonderful theme that we should consider whenever we talk about scientific ideas, because it reminds us that one can communicate a truth of undoubted intellectual value without the need to be complemented by any system of equations."



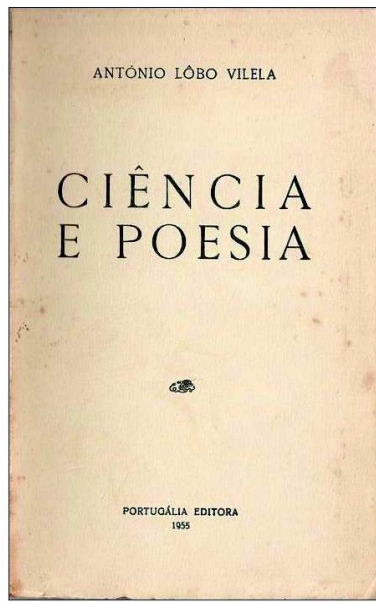
Albert Einstein (1879-1955)

- *"Imagination is more important than knowledge. Knowledge is limited. But imagination embraces the entire world."*
- *"When I examine myself and my methods of thought, I come to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing knowledge itself."*

António Lobo Vilela (1902-1966)

"The conviction long ago took root in my mind that there are close affinities between scholars and poets, contrary to common opinion."

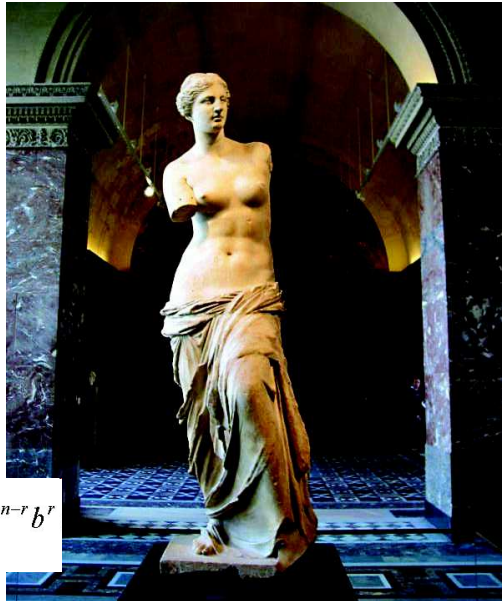




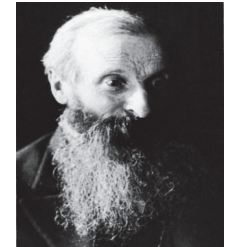
Fernando Pessoa / Álvaro de Campos

"Newton's binomial is as beautiful as the Venus of Milo.
There are but few people who know this."

$$(a+b)^n = \sum_{r=0}^n \binom{n}{r} a^{n-r} b^r$$



Guerra Junqueiro (1874)



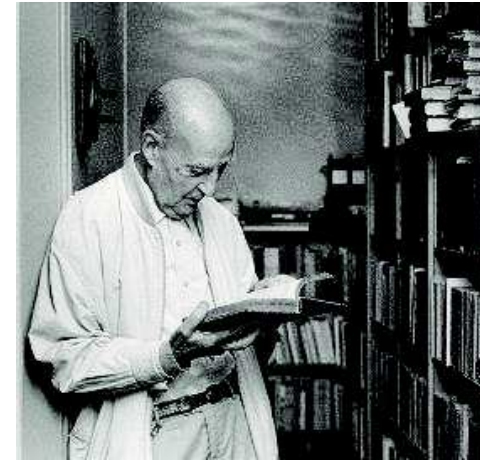
- *"Poetry is truth transformed into feeling. The law discovered by Newton can be explained in a physics book, and sung from a book of verse. The wise man looks at it, demonstrates it, and the poet, starting from this demonstration, draws from the facts all the moral, social and religious consequences, translating them in an emotional way. In this case, science gives us conviction, certainty; poetry gives us emotion, enthusiasm."*

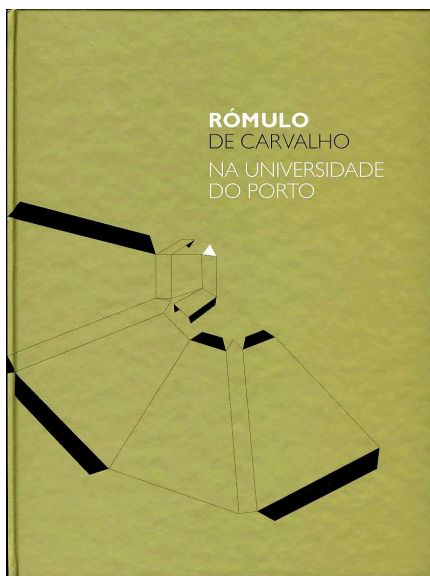
Antero de Quental



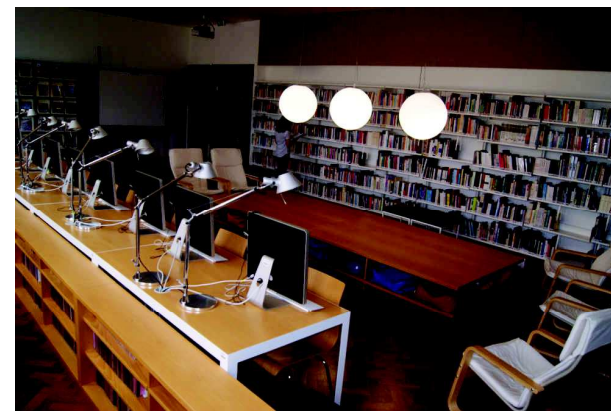
- "The ground on which today's *certainty* rests was formed by successive waves of ancient *intuition*. What now is science was once poetry: the sage was once a singer, the legislator a poet; and the evidence, a riddle, a brave *guess*, whose profound conclusions are amazement and perhaps despair of the strictest philosophies. And if today we bathe in the full light of reason, it was poetry, that gentle hand, which guided us through the pale twilight of ancient dreams. Ancient? No: eternal dreams!" .

Rómulo de Carvalho (1906-1997)





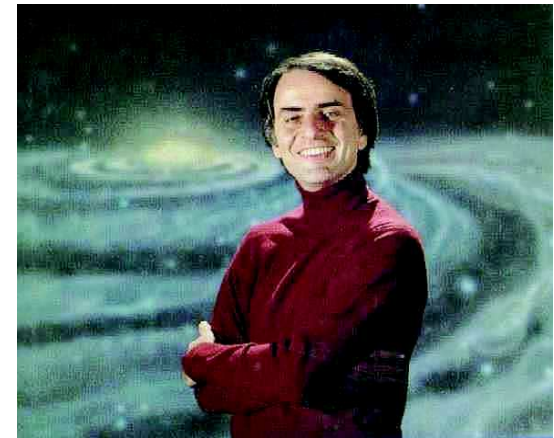
Rómulo- Centro Ciência Viva da Universidade de Coimbra



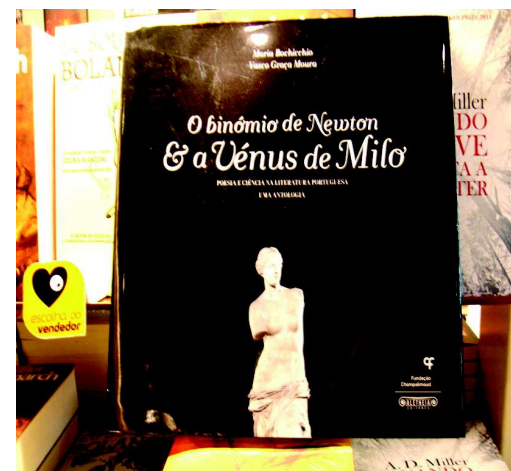
José Mariano Gago (1948-2015)



Carl Sagan (1934-1996)



Vasco Graça Moura (1942-2014)



Paulo Cunha e Silva (1962-2015)

