

Dementia dichotoma – the ‘two cultures’ delusion

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When scientists want to show how cultured they are, or when academics concerned with ‘arts’ subjects want to show off their open-mindedness, they never fail to refer to the imaginary Mesopotamia – the ‘land of two rivers’ which was introduced by Sir Charles Percy Snow in his 1959 Rede Lecture¹¹. There is no doubt about the existence of the cult of the ‘two cultures’. Is this not in itself sufficient reason for taking seriously the thesis that there are two separate cultures, of the arts and of the sciences – even if its real content is little more than a superficial aperçu, a stimulating but exaggerated observation?

When a slender thesis (barely 50 small pages) about the mental make-up of our scientific civilization – at least in its specifically Anglo-Saxon version – runs through 7 editions in a single year, and stimulates the writing of hundreds of essays and books, should it not be taken seriously as a major event in the history of our thinking¹¹? Can we assume that the ‘two cultures’ are real because the arts and the sciences are incessantly occupied with the concept that they exist? Can we define as scientifically ‘real’ whatever science declares to be real, in spoken words or in writing? When we analyse this line of reasoning we realise that we are actually not considering the content of the ‘two cultures’ thesis but its effects. We will come back to this point later.

It is nevertheless striking that the first publication of so weakly-founded an essay was able to produce literary shock-waves for several decades. How is it possible that year after year innumerable scientific writers and public speakers inevitably cite the ‘two cultures’? How can one explain that so little actual knowledge could lead to such avalanches of quotations? Is this not a perfect example to justify mistrust of bibliographic ‘citation indices’ as a way of measuring the value of a published article?

I have the dark suspicion that only very few of those who cite the ‘two cultures’ have actually read what they quote. People do not always bother to read even the shortest article before they cite it. Who could really, upon sober consideration, take seriously such a comprehensive condemnation of the arts and humanities and their ‘culture’ by such a cultured scornor? Who could agree, today, with the coarse

simplification about the salvation-bringing deeds of the natural and technical sciences, which – according to Snow – have ‘our future in their veins’? Is it not enough to make our blood freeze? Is it not mind-boggling to find Sir Charles firmly stating that the majority of the leading literary figures of his epoch were ultraconservative political right-wingers, whereas most of the leading scientists fought for liberal leftist causes? Such an observation might perhaps appeal to those for whom the horizon of the Cambridge of the thirties already encompassed most of the ‘important’ world. But who really considers that a knowledge of either the Second Law of Thermodynamics or of one of the works of William Shakespeare is a litmus test of competence to make intellectual judgements? And who could seriously argue that the brain’s ability to accommodate both should be the basis of a reform of the educational system?

It is also surprising that what C. P. Snow defines as ‘culture’ remains quite vague: ‘... common attitudes, common standards and patterns of behaviour, common approaches and assumptions ...’^{11a}. If we accept such a definition we have to say that bird-watchers, or professional tennis stars, or Catholic students of international law, or experimental social psychologists, all have their own ‘culture’. With such a rule you can collect almost any imaginable group of people and distinguish them from any other. This has about as much value as classifying flowers by the size of their leaves or their colours – pre-Linnean taxonomy, so to speak.

Since 1959 it has also been explained time and again that the image of the ‘two cultures’ does not in any way describe the real multiplicity and interconnect-edness of the intellectual structures of communication in the arts and the sciences (C. P. Snow was quite aware of this, as he sets forth in *A Second Look*¹² written in 1963). In *Die drei Kulturen* (1985)⁷ Wolf Lepenies argued in much detail that at least three clusters of methods for the scientific probing of our world must be distinguished. I myself sketched out on another occasion (*Wissenschaft: Zur Rede gestellt*, 1989⁸) that the compartmentalisation of scientific disciplines and co-operative division of work

allows the differentiation of many more 'communication and argumentation cultures'. Similar counter-arguments have been put forward by Frank Leavis in his 1962 Richmond Lecture⁶, and by Lionel Trilling¹⁴.

Furthermore, sociologists writing about the sciences – whether investigating the question theoretically or empirically – have also found little to support Snow's thesis of the 'two cultures'. In *The American University* (1973)¹⁰ Talcott Parsons and G. M. Platt distinguished at least four academic 'cultures': the sciences, reaching for pure knowledge by strictly rational methods; the various disciplines of the arts and humanities, committed to conserving and augmenting general knowledge; the professional disciplines, from economics to engineering and medicine, concerned with the practical application of knowledge; and finally the various disciplines of the social sciences, closely connected to the realm of politics and more or less ideologically imprinted. These authors also stress the manifold overlaps and intersections among their four categories, and the finding that some special fields can be assigned to more than one category. This has led later authors, building on this scheme, to describe even finer levels of differentiation – an almost infinite multiplicity of 'cultures'. Pierre Bourdieu, too, does not see the world of *Homo Academicus* (1984)² as dichotomous in Snow's sense, deteriorating into antagonistic, mutually aggressive camps. In extension of his encompassing *La distinction. Critique sociale du jugement*³ he offers grounds for a three-fold structuring, based on economic, social, or cultural interests. Here again one encounters multifarious difficulties in assigning individual disciplines to their places in the scheme: for example, is medicine influenced more by economic or by social forces? That is a question which each one of us will answer differently, according to our individual experience of the medical profession, how much we have suffered or gained at its hands, and how prone we are to envy its social status.

Empirical studies on the actual conditions within universities – based, for instance, on interviews with students in different departments – also fail to confirm the dissolution into 'two cultures' (Bargel, 1988¹). Without overestimating the significance of such surveys it does seem remarkable that this particular one produced not two, but rather ten different views expressed by young people in different fields of study regarding their expectations and attitudes to their work. In looking at how students saw the guiding principles, the tasks, the demands and the goals of their studies, what is particularly striking is the arbitrariness of the definitions in individual cases, and also the fact that the measurable differences between disciplines formed a continuum, and

they could not be cleanly separated into categories. Real differences did appear, but these were largely an expression of the differentiation of requirements and skills demanded by the division of labour in a complex society. How could this be otherwise in the academic community, the 'brain' of our society? And why should it lead here, of all places, to a bisection? I trust that nobody will imagine that the arts and the sciences are related in the same way as the left side of the brain to the right side (although Snow almost seems to suggest this).

Another seemingly obvious difference, which is clearly a basis for Snow's opinions, is that the sciences investigate natural phenomena and their underlying causes and laws (and make practical use of them wherever possible), whereas the humanities are devoted to the study of the products and effusions of the human mind, and the day-to-day behaviour and creative activities that arise from them (and to making practical use of the insights thus obtained whenever possible). However, the differences that once seemed so clear disappear rapidly when one takes a closer look at the methods used in research in these various fields. For example, in mathematics there is an increasing merging of the disciplines, ranging from pure mathematics to theoretical physics, formal logic and theoretical linguistics to operations research and game theory in economics. Similarly, it is hard to see any real methodological or conceptual differences between the work of geologists, paleontologists and evolutionary biologists on the one hand, and archaeologists or historians using empirical methods on the other. It has become almost impossible to discern a borderline between experimental psychologists, who make use of every possible scientific technique, and neurophysiologists and students of the brain, who rely extensively on introspection and their own personal experience. It even appears that a new discipline, neurophilosophy, has been attempting to establish itself (Churchland, 1986⁴).

Another distinction, which is close to being a further dichotomy, is the one between those disciplines which try to understand problems in an interpretative way, in terms of the expediency of human thought and action, and others which – although they have gone far beyond the illusory explanation of the world in terms of Newtonian mechanics – have not yet ceased to see the world they are studying as something that can be understood; as something which works according to mechanisms which obey laws that can be deduced from causes, effects and existential conditions – even if these laws describe stochastic or non-linear chaotic-dynamic conditions. However, this distinction does not justify a hierarchy of disciplines, much less the existence of two 'cultures'.

Modern evolutionary biology since Darwin has convincingly shown the exceedingly well-adapted organisation of living nature, while at the same time it has demonstrated just as convincingly the total absence of pre-planned purpose; the literally 'unconscious' genesis of the evolutionary process. On the other hand, there are many people who see the course of human history and of present-day developments – this stumbling from one doom to the next and from one triumph to the next – as the expression of an equally unconscious, blind and senseless continuation of a natural process, carried out with the superior means provided by mankind's sophisticated cultural abilities. The behaviour of human beings – occasionally, at least – may be guided by the conscious seeking of a goal. This fact may be necessary to explain human history, but it is not sufficient. When history is considered from a long-term, global point of view it becomes difficult to see it as anything other than that which Nature spawns through its untethered primeval powers; happiness and suffering, growth and death – a process replete with both miracles and horrors.

It cannot, of course, be claimed that one kind of academic culture – the humanities – is mainly concerned with the underlying meaning of our existence, while the other – the culture of those whose view of the universe is a reductionist, mechanical one (assuming that they are considered to have a culture at all) – provides merely the necessary manual and calculatory skills. Such a picture would stand C. P. Snow's 'two cultures' thesis on its head, since he insists that the latter, the 'scientific-technical culture', is the one that is concerned with future problems and could solve them – if it were not misunderstood, criticized and hindered by the literati with their backward-looking culture. One may at this point cite Wilhelm Dilthey: 'The sciences explain, the humanities understand!' There is much truth in this, since human beings can only really understand what has emerged from their own minds. But where human behaviour and human history are concerned, there are far too many things that remain incomprehensible even when we can 'explain' them, and this is just as true for human relationships. In contrast, modern behavioural science has given us more and more understanding of the behaviour of animals.

My doubts concerning the validity of the 'two cultures' description of the world of the arts and the sciences were fed not only by the paucity of Snow's evidence, but even more by my own experience of applications for research funds received by multidisciplinary organisations. One is struck by the 'cultures of supporting reasons' revealed in the egoistically-slanted arguments of the various disciplines. Medical scientists do not hesitate to point to suffering hu-

manity in support of their demands; chemists and engineers paint in vivid colours the new energy-saving, ecological and safe products that can be expected; economists incite the economy to flights of global competitiveness by threatening to use their latest mathematical models; philosophers and mathematicians, separately or united, dazzle with the brilliance of pure self-reflecting reason. Some people claim that we must catch up with the advance of Japanese science; others, that we must defend our own leading position. For some, Nature beckons with treasures only waiting to be claimed with the help of scientific staff and a modest budget for buying simple instruments and reagents, while others would never stoop to such testable claims – they find it sufficient to base their demands for funds simply and nobly on the essential importance of their research.

Obviously, there is no lack of rhetorical differentiation between the individual disciplines. Only one thing is missing: the neat division into cultures, facing each other without understanding or communication. Of course we find lack of understanding and unwillingness to communicate between biologists and physicists, philosophers and lawyers, medical scientists and sociologists, and so on. It is true that there are controversies in which physicians, engineers and economists – or psychologists, biologists and biochemists – find themselves collaborating in a natural coalition of scientific action. But it is equally common to find deep trenches between different types of biologists, for example between evolutionary theoreticians and neurophysiologists – and these divisions are often much deeper than those one would find in the 'two cultures' model, separating the former from, say, mathematical economists, and the latter from cognitive psychologists. We simply cannot find the type of 'scientific' world that C. P. Snow and his followers propose when we look at the controversy-laden cosmos in which real research interests and procedures have to be substantiated.

If this criticism of C.P. Snow's short essay has even a grain of truth in it, we do, however, have to ask why the 'two cultures' thesis was such a resounding and long-enduring success.

Was the success due to the personality of the author? It may well have been. Charles Percy Snow was certainly not a nobody in the intellectual and political life of Great Britain over the past 50 years. His curriculum vitae is impressive. Born in Leicester in 1905, he studied physics there and in Cambridge. As a Fellow of Christ's College from 1930 to 1950 he worked in the field of molecular physics. Quite soon he extended his activities outside purely academic circles. From 1940 onwards he was assigned increasingly important duties in science politics. His bril-

liant rise came under the post-war governments: from 1947 to 1964 he was Director of the state-owned English Electric Company, and from 1964 to 1966 held a very senior post in the Ministry of Technology. He died in 1980, the recipient of numerous honours and some two dozen honorary degrees. He had been raised to the nobility in 1957 and sat as Baron of Leicester in the House of Lords. In addition to all that, he gained literary fame through his many novels and essays, written from the 1930s onwards, among them the famous series of eleven volumes *Strangers and Brothers*¹³.

Does all this not mean that he begins to appear as an intellectual Colossus of Rhodes – perhaps the one individual able to bridge the bottomless chasm of lack of understanding between the two cultures, that of the sciences and engineering on one hand and that of the arts and humanities on the other? At home in both cultures, was he not uniquely suited to condemn their separation and to demand their unification?

It might seem so – but then again, it might not. For what C. P. Snow really has to say about the so-called traditional, literary and political ruling culture of modern Britain mainly amounts to a dressing-down, loaded with so many preconceived ideas, and so overflowing with scientific conceit, that one finds it hard to understand how the chasm is to be bridged and not deepened by his words. From this point of view the 'two cultures' diatribe reads like the preaching of a confirmed scientific fundamentalist against a heathen literary rabble. At this point it is clear that caution is needed. Was C. P. Snow really in full possession of the truth of both worlds, as he claimed to be? Let me cite from a review in *Nature*⁵ of the latest book about him, John de la Mothe's *C. P. Snow and the Struggle of Modernity*⁹:

'Snow claims for scientists unique access to a wordly wisdom that few would arrogate to themselves (let alone their colleagues). They have, he asserted, "the future in their bones", a faculty denied by implication to members of other professions. To my mind, he was a poor spokesman for our trade. As a novelist he was pretty good for a scientist, as a scientist better at least than most novelists and as a politician merely, by all accounts, a failure . . . Snow was first and last an *arriviste*, whose interest was not in the journey, only in the goal. His own research . . . was an almost unbroken succession of boners, the consequence most often of intellectual delinquency or wanton carelessness. The climax came with the publication by Snow and Bowden . . . on the spectroscopic identification and supposed photochemical generation of vitamin A. Their claims were brutally atomized by Ian Heilbron and R. A. Morton. In particular, and not for the first time, Snow had made

a fool of himself by his ignorance of the literature; he was probably already too busy with his other ambitions to bother with reading journals.'

Is the thesis of the two cultures thus really only a fancy that does not correspond to the reality of our intellectual life: 'dementia dichotoma', the 'two-cultures delusion'? It does indeed seem so. Of course, there are scientists who look at the literary pages of their daily paper only when they are on a long train journey and there is nothing else left to read, and who would prefer to sleep rather than to read poetry. We are also well aware of the existence of people who enjoy a high literary culture, but who not only do not know what a pH-value is, but who also boast of knowing only one thing about gene technology – that they are against it. But, on the other hand, there are also philosophers who have studied the theory of relativity more thoroughly than most physicists, and biochemists such as Erwin Chargaff and Carl Djerassi who are well known for their wide and profound knowledge of literature and arts.

What, then, is the point of classifying mankind into groups – indeed into isolated 'cultures' unable to communicate with each other – when on all sides we find living examples contradicting this concept: the brightest minds in both 'cultures' who cannot be classified into this dichotomy? And what is the meaning of the statement that one group has the future in its bones, whereas the other has only the past? Does the dynamic principle of the sciences really represent progress, while that of the arts and humanities merely symbolizes the past? Tell us, then, to whom do we owe the Utopian visions which give direction to this progress?

This 'Morbus Snow', this 'splitting' of knowledge – the 'Snow of yesterday' as Harald Weinrich put it so well; this idea of two cultures into which our entire state of mind is divided; this imaginary disease; this figment of the imagination – is only one aspect of the phenomenon I have called 'dementia dichotoma'. In truth, it is merely one small hypothesis without weight; a literary-scientific footnote; one of the many word-games with which scientists manage to create work for themselves.

However, we still have to ask why this amusing little, not very original idea of C. P. Snow's met with such a resounding success. What is it that pushes so many of us actually to use this pseudo-scientific classification of mankind, this way of segregating or integrating human beings, as an instrument of argumentation? What is this strange craze that forces us to find an affirmative proposition in so short-winded a thesis? Why is the dichotomy, the separation into two categories, so much more convincing to us than many better-founded patterns of differentiation, as Snow himself once wrote? It appears that we have a

fatal inclination to assign the immense richness of the phenomena we observe in the world around us to two categories, to two classes, in one of which we include ourselves – naturally the better, higher-standing, more privileged one (vide C. P. Snow). It is this inclination of ours that I wish to consider as a disposition to 'dementia dichotoma', an important phenomenon, of which the 'two cultures' hypothesis is merely one minor example.

I cannot prove in detail here that a strong urge to social dichotomy belongs to the fundamental structures of our mental make-up. Others have provided this proof (see for example Pierre Bourdieu). But it seems to me to be worthwhile to point out here, by presenting a short list, how frequently we subject the world around us to such a classification, and to suggest where the evolutionary origin of the 'classification urge' might be found – and why the urge to produce dichotomous classifications can so easily result in a mania for scientific discrimination.

The urge to bisect what is only too clearly linked in a multiplicity of ways entices us into using the binary logic of Aristotle – is it A or is it not A? 'tertium non datur' (there is no third possibility). The psychologist studying perception uses it in tasks involving the recognition of contrast (figure vs. background, subject vs. object); the student of cognition reduces the complications of the body/soul problem in this way, and the psychologist concerned with the will works with the pair of opposites 'free' and 'determined'. Evolutionary biologists and psychologists have been battling over the unholy and absurd dichotomies 'congenital/acquired', 'inherited/learned', and 'nature/nurture' for generations. 'Alternation mania' pursues us in our daily habits and fashions. As soon as Bill Clinton was elected President of the United States, the latest listings appeared giving the new 'in' places, occupations, foods, clothes and figures of speech, which were all different from those under his predecessor George Bush. For instance, homosexuals were now 'in', family values were 'out'.

In wide areas of the sciences we find abysses, if not whole worlds, separating those who believe they can attack a problem only by theoretical-mathematical methods from those who swear by empirical-experimental means. This is already quite close to a 'two cultures' situation. And which self-respecting religion or theology can do without good and evil, heaven and hell, God and Devil?

This craze for the dichotomous reaches new heights when we turn to the sphere of social structures, and the tendency to see them in 'black and white'. At the heart of this particular problem we find the basic differentiation between 'own' and 'strange', inside and outside, belonging and excluded, proper and deviant. From the biological point of view the deep-

est roots of this problem can be found in the basic tenet of immunology, that every single cell, every biological structure must be able in some way to discriminate between the 'self' of the individual and 'non-self', materials such as foreign proteins or genes.

We know of no functioning complex social system of animals that is not constantly forced to make this decision between 'self' and 'non-self', between 'own' and 'strange' – the simplest example being the raising of the 'own' brood as opposed to 'strange' offspring. There are many good reasons for assuming that this fundamental distinction also played an important role in the development of the human being into an organism living in highly structured societies. It may even have played a decisive role in the development of the specific type of social intelligence possessed by humans, since it is highly probable that the cooperation/selection procedures involved constantly required decisions to be made on whether individuals were 'related/unrelated' or 'known/unknown'. One can even find arguments supporting the view that this also led to our characteristic inclination to use our ability to talk, so excellently suited for communication, to identify those not belonging to 'our' group by showing up their 'outsider' status in the very first attempt at communication. Speech, which is so appropriate for establishing communication, can actually serve just as well for 'discommunication', for the disqualification of every 'stranger': the Greeks called all peoples of different tongues 'Barbaros' – 'those unable to speak'.

We and the others; friend or foe; male or female; young or old; believer or non-believer; rich or poor; healthy or ill; them up above and us down below – these are examples of our readiness to dichotomize to the point of denouncing the other party as being of the Devil. Our creation of dichotomies is always preceded by the urge to discriminate, in spite of all the obvious and clearly-visible continuous transitions underlying each and every fissure. All this reveals our dexterous – or fatal – ability to divide whatever meets our eye in the world around us, particularly in the world of human society into two parts of unequal weight, using the well-honed blade of our powers of discrimination. There is one part with which we associate ourselves, and the other to which 'the others' belong: 'tertium non datur'. 'He that is not with me is against me'; 'let your yea be yea and your nay be nay'. Anything else, in particular anything in between, is evil.

From the point of view of social psychology this would seem to be the necessary price of a treasure that means so much to each one of us – the consciousness of safely belonging to a clearly determined group of people; our social identity. The stranger,

the other – that is the humpbacked shadow of our consciousness of social identity, and we ourselves are always ‘the other’ to the others, the ‘stranger’ to the strangers. This is not a natural inevitable constraint, but nevertheless it unmistakably conforms with the spontaneous inclinations and tendencies that we all possess.

Looked at in this way, the thesis of the two irreconcilable cultures, unable to come to an understanding, appears in a new light, as a new attack of Manichean splitting, this time in the world of the arts and the sciences. It is a division which we are strongly inclined to make – which is reason enough to distrust it and to take therapeutic measures.

Can we not find a conciliatory ending? Is there no alternative to the continuing discord between the academic disciplines? Is it not fitting to see the university, this centre of the universality of knowledge, as the clinic for the treatment of delirium-inducing dichotomies; a guardian of the arts and the sciences against the ‘two cultures’ delusion? Conflict may be profitable, but if it is to be so, the two parties must struggle with each other, even while they struggle against each other. Argument has one important requirement: a genuine desire to search for agreement across all lines of demarcation, through the common use of a common language. Can we think of another place in our society, apart from the university, where the freedom to debate, the basic condition for success in this venture, is so enshrined in its constitution?

These days there are far too many people who can find nothing to be gained from the unity of the arts and the sciences. Needless to say, there is of course no such thing as a single unified picture of the world – no uniform scientific ideology. Such a thing cannot be, now or in the future. But at a lower level there is room enough for understanding. There could be a unity of endeavour to understand and make understood what is still incomprehensible; a unity of discourse about the phenomena and problems recognised as common to all. There could be a unity of methodology in the acquisition of knowledge going beyond the plurality of techniques – the obligation to give proofs for statements; to show facts. Finally

and most importantly, there is a unity of reasoning power. The arts and the sciences can agree very well on what is meant by substantiation, by fact, by observation, by refutation, beyond all differences in research methods and epistemology. This agreement exists between all humanistic and scientific cultures, whether there be two, three, four, ten, or more. The unity of all arts and sciences relies on there being a community whose members can communicate with each other. To provide such a community is the primary role of the university, the nurturer of all knowledge. This may well be a vision of Utopia – but it is one which gives us a clear goal and encourages us to reach for it, and one which does not show the goal to be inaccessible a priori. Here lies the fundamental significance of the university. It is the home of unity in research and teaching, and not the battleground of two cultures.

Translated from the German by H.P. von Hahn and J.M. Jenkins.

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