Only connect…

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Synthesize and conclude: this is the brief which I was given in relation to the foregoing proceedings. A fascinating, though daunting, task. To synthesize inevitably involves a degree of subjectivity and, as Flaubert [1] sagely adumbrated, to conclude is folly. On the supposition that all of our hypotheses are working hypotheses, I shall make the following observations, in the hope that they may attract others and that the on-going debate may be enhanced and carried forward.

We live in a world which has the illusion of having fulfilled the dream of the Enlightenment. The wonders of technology have opened amazingly new horizons, but our 'brave, new world' is neither as 'brave' nor as 'new' as it is often presented. 'Interdisciplinarity' has become a buzz-word for administrators as well as for academic planners, eager to economize by letting an entire subject-area drop off the table without being noticed, blithely ignoring the fact that countless others before us were polymaths and that the universal learning of the Renaissance man has for centuries been the bedrock of Western civilization. Nor is this new technological world all that 'brave', containing, as we shall see, various threats to democracy.

For me, the transition from 'information', through 'knowledge' and on to 'wisdom' ('IKW') is all about power. It has led to the undermining of traditional hierarchies, in ways which are both dynamic and potentially sinister. Education, as Pierre Bourdieu [2–4] has clearly shown, was used, up to the recent past, and in many cases still is, to perpetuate the ruling classes, as a means of enabling the masses to contribute to society while 'knowing their place' and 'never getting above their station'. Now, in the developed countries of the world, we have a more 'upwardly mobile' society and the proportion of school leavers going to university has vastly increased. Furthermore, recent years have seen the rise of a cohort of highly motivated adult learners. But, beware! Universities are being used by politicians as instruments of social engineering. Although the overall benefits of opening up all levels of education to an ever-expanding proportion of the community are clear and obvious, in the wrong hands such measures are potentially detrimental to disinterested learning and fundamental research. Government leaders have pledged by 2012 to have 50% of the cohort of school-leavers graduate with a university degree. Ideally, they would hope that these would mostly opt for science-based subjects. In reality, however, students, in many countries, vote massively with their feet and sign on, in big numbers, for the humanities and social sciences. There, with the steady erosion of already poor staff/student ratios, they will receive far

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less individual attention than before, in courses increasingly superficial in content, before graduating to ever-dwindling employment opportunities and creating a future source of systemic discontent within society. The worm will turn!

Again, revealed wisdom is being undermined, in ways which are both thrilling and stimulating. When the Magi visit the infant Jesus, in *L'Enfance du Christ*, the oratorio for which Berlioz, unusually for a musician, wrote his own libretto, we hear is: "*Il a sagesse et il apprendra*". These words, "He has wisdom and he will learn", are an almost exact reversal of the 'IKW' paradigm, implying that the infant Jesus is born with inherent wisdom and will learn to apply it to the particular circumstances of his environment. Nowadays, we are enjoined to build up new wisdom, via information and knowledge. But, again, beware! It is not as easy as it is made to seem. Instant gratification occults the need for effort. The structures of knowledge are changing: we are drifting away from source materials to a world in which the old idea of the unity of knowledge has lost its point. All too frequently, the merits of the British Royal Air Force motto '*Ad astra*' ('To the Stars') are vaunted, without the concomitant '*Per ardua*' ('Through Strenuous Efforts'). And yet, one of the most significant changes that I have witnessed in my lifetime has been the encouragement of boundless effort in such performative activities as sport, music, dance and theatre, making ever more superhuman demands in terms of training and stamina, while, at the same time, advocating a corresponding diminution of effort in traditional school programmes, at both primary and secondary levels, thus weakening fatally the starting position for the commencement of third-level studies. The current post-modern offering of pick-and-mix courses leads inevitably to kinky options and less focused training, engendering a consequential lack of trust and a corresponding dependence on certification over competence. Interestingly, in professional areas, such as medicine, engineering and law, where there are licensing authorities outside the university system, grade inflation has not occurred to any significant extent. In the humanities, however, where there is no external regulatory interest group, the political pressure to turn in an increasing number of high-grade results has undermined the validity of traditional academic qualifications. The promise of knowledge without cumbersome learning efforts heralds a dumbing-down of educational systems in general, as shown in the tellingly entitled two-hour U.S. PBS (Public Broadcasting Service) documentary, *Declining by Degrees* [5]. Worse, by short-circuiting the process of contemplation and understanding, it threatens the suppression of time and space in the dominion of simultaneity (see Chapter 3).

A further element driving this downward spiral is the question of patronage. Western society has moved from feudal and royal support to state support, which, however, is now running out and needs to be bolstered by corporate support: state universities in California are currently taking an effective 8% salary cut, in the form of 8% days of enforced furlough without pay per annum. Jennifer Washburn, in *University Inc.: The Corporate Corruption of Higher Education* [6], showed the origins of this trend to lie in the 1980s, when the U.S. pharmaceutical industries sought to outsource their research work and found willing takers in the universities. But, again, beware! Help of this kind comes with a price tag. Funders who pay the piper will also want to call the tune. Expensive disciplines will come to be more highly valued than inexpensive ones. The humanities, falling into the latter

category, will be treated with such superficiality as to become relatively worthless, at a huge cost for society. Higher education, at the present time, is in danger of becoming a commodity rather than a public good, with universities being run as businesses, along strictly commercial and managerial lines, the students becoming 'customers' in a consumer-driven society. In the words of the Boulton and Lucas report:

"*To confine universities to such a mechanical place in the progress of society is to diminish them; it invites doomed efforts to measure intangible effects by unyielding metrics; it offers only eventual disillusion.*" [7]

English higher education has recently been placed under the Department for Business, Innovation and Skills, and the new 'Research Excellence Framework', which will drive the Higher Education Funding Council for England's allocation of the research block grant, will, for the first time, implicitly assess the 'impact' of past research on the economy and society. Only those institutions capable of demonstrating a track record of delivering 'impact' and 'outcomes' from their research will be rewarded, with "potentially disastrous" [8] consequences for the humanities.

Ironically, technology, though a life-giving force to universities, could, through excessive dependence on commercialization, lead to their ultimate financial decline. The Open Courseware Consortium, started by the Massachusetts Institute of Technology, has enlisted universities around the world, from the University of the Western Cape in South Africa to the University of Tokyo, to post courses online free, including professors' notes, videos and examinations. The portal iTunes offers lectures from Berkeley and Oxford. The new University of the People, founded by an Israeli entrepreneur, provides tuition-free bachelor-level degrees through what it calls 'peer-to-peer teaching', students learning, not from teachers, but from each other, trading questions and answers. This puts the consumer, as opposed to the supplier, in charge. Such a technologically tinted vision is both friendly and hostile to university teachers. It provides a challenge which the brilliant will relish, but which will scare the daylights out of middling professors in middling universities, wrongly so, in this latter case, as such a simplistic evaluation of their worth leaves out of the account their potential gifts as one-on-one exponents of the art of teaching. For the universities, however, this scenario is still more threatening. They run the risk of having their profitable introductory courses taken away from them by low-cost competitors and thereby finding themselves in danger of being unable to afford their more expensive and labour-intensive specialized courses. The long-term future of universities may thus be put in question, in relation to the maintenance of costly laboratories, the retention of free-thinking tenured faculty and the preservation of the campus environment itself, which, through 'mission creep', might become akin to that of a glorified vocational school.

My own approach to research and teaching was through the study of the relationship between word and image, an interdisciplinary study, if ever there was. The first 'page' was probably an icon scratched on stone. From that, there developed Sumerian symbols and Egyptian hieroglyphics, the predecessors of our alphabets, though the transition from the Semitic language of the Phoenicians to the Indo-European language of the Greeks involved the crucial mutation from a visual

to a phonetic code. This led to a system involving vowels as well as consonants, with blanks between words, which had to be *read* as well as *seen*. In the Middle Ages, the Gospel was preached through images. For Pope Gregory the Great, at the beginning of the 7th Century, painting communicated to the illiterate what the learned could access from reading, though, two centuries later, the authors appointed by Charlemagne opined, in the *Libri carolini*, that the erudition of spiritual logic could be found, not in images, but in books. The Reformation, with its emphasis on iconoclasm, dealt a severe blow to the function of the image. The link between word and image was further impaired when Descartes sought to rely exclusively on reason as a philosophical tool, to the exclusion of the evidence of the senses, thus according to the word a position of almost total dominance in the post-Gutenberg print library. This usurpation was eroded, in 19th Century France, by the poet Mallarmé, with his disposition of the characters on the printed page in the shape of a galaxy of stars, in 'Un coup de dé' ('A Throw of the Dice'), heralding the phenomenon of the painter's book and the incursion of the image into everyday modern life. Icons have reasserted themselves and have replaced words internationally in manuals explaining the use of appliances. Compare magazines and newspapers of today with their counterparts of thirty or forty years ago and you will be struck by the way in which the image has invaded the printed page. Marshall McLuhan's dictum, "The medium is the message" [9–11], is as apt today as when it was first proclaimed. Form and content are inextricably intertwined. In this respect, the e-book or hypertext takes the reader on a virtual walk through a house with many mansions, just as Quintilian proposed in his training of the memory (*Institutio Oratoria*, Book XI), where different aspects of a given topic could be called to mind as visual features of the interconnecting rooms in an imaginary dwelling. In this way, the Art of Memory (*Ars memorativa*) was cultivated, a rhetorical skill which had its origins in a legend dating to the 6th Century BCE. The poet, Simonides of Ceos, was able to identify the remains of guests at a banquet, from which he was temporarily absent, by recalling where each one of them had been seated before the roof caved in and obliterated them beyond recognition. The rhetoricians drew two lessons from this example: first, that, for the purposes of remembering a discourse, it is helpful to visualize topics spatially, like going from area to area in Quintilian's house; secondly, that it is useful to think of a given topic figuratively, as, for example, picturing an anchor at the entrance to the imaginary house, a reminder that the discourse was to begin with a consideration of the topic of navigation. Sadly, the art of memory is being down-graded in currently fashionable educational theories, which fail to distinguish between the parrot-like aspects of learning by rote, on the one hand, and, on the other, building up the store-house of the mind from earliest infancy (see Chapter 9). Memory needs to operate visually as well as verbally, thus recreating the concomitant elements in perception and cognition, as encapsulated, famously, in Chinese ideograms. The hypertext focuses on networks for the future, where Quintilian's art of memory focuses on networks from the past. Both are necessary. They complement each other, organically.

But, again, beware! Things have moved on since the time of Marshall McLuhan. The media have been taken over by powerful corporate interests and mirror only themselves. In the process, they have become hugely manipulative,

as, for example in the recent management of the swine-flu crisis (see Chapter 12) and the installation of hand-washing facilities at all strategic points, complete with four-stage explanations of how to wash one's hands. In that they seek to develop more compliant and less critical members of society, however, the long-term effects of the modern media are far more menacing and could eventually lead to a scenario comparable with that of Germany in the 1930s.

So much for the triumphs and pitfalls of the new technology. Now, for a possible agenda for action:

- Above all, steer a middle course between the amazingly liberating forces of modern communication and the potential threats that they pose for the liberty of the individual. The challenge will be to develop the critical mind, to train creative sceptics.
- Welcome online instruction for its benefits in widening access to education, enabling people in remote communities or in challenging social circumstances to have access to the world of learning. When the Open University was inaugurated in the 1960s in the U.K., the prophets of gloom said that it would endanger the model of university lecturing, but their fears proved to be without foundation. Then, as now, the two approaches could be cultivated simultaneously, the one enriching the other.
- Do not lose sight of the individual in fostering group involvement. Collective authorship constitutes an inherent threat, if introduced as a teaching tool, bolstering the confidence of the weakest members of a group, it is true, but obscuring the input of the individual, which, on the contrary, should be highlighted and fostered.
- Attempt, as far as possible, to make objective evaluations of teaching performance, but remember that no amount of bean-counting or ticking boxes can replace the outstandingly gifted teacher whom most of us can recall in the course of our formative years.
- Go for digitization, but be sure to do more than transcribe. Cultivate critical awareness as well.
- Consult 'Mr' Google and his associates every day, but beware of the insidious effects of plagiarism. The lion, as Paul Valéry properly observed [12], is made up of devoured sheep, but proper digestion is essential for complete assimilation.
- Embrace electronic publishing and open access, but do so with rigorous peer-review and beware discipline-skewed bibliometrics.
- Acknowledge that linear teaching programmes do not relate to all disciplines, but beware the eclecticism that characterizes many restructured programmes; it may produce future teachers long on presentational skills and short on content. There is a real danger in seeing primary and secondary teaching as an entertainment function, when the pupils receiving this teaching are at the most receptive phase of human development and are well able to engage with challenging issues.

The democratization of higher education must be welcomed. Its long-term benefits are not in doubt and it may, eventually, cause populations to be

led less easily by the nose into futile wars. But, beware of the threat to specialized research elites. They cannot represent more than 15% of the whole, in reality far less, but the *realpolitik* of academic life makes them vulnerable to being swamped and outvoted by a populist majority (see Chapter 6).

E.M. Forster's novel of 1910, *Howard's End* [13], though set in the Edwardian era, could be seen as even more suited to our present period of mistrust, dysfunction and frenetic communications. The novel's motto, "Only connect...", seeks to reconcile the open-ended intellectuality of one family with the practical economy of another, in the class struggles characteristic of early 20th Century England. In a wider context, the novel's advice has a new relevance one century later, when the undoubted wonders of technology have the capacity to transform the human condition, while the post-modern fragmentation of society perversely risks undermining this remarkable scientific potential.

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