

Aristotle, the Market Place, and the Idea of a University[†]

BY GEORGE HUXLEY

When the Classical Society of Ireland did me the honour of choosing me to be the honorary President for 1999, your Secretary Dr. Telford said that the principal task would be to deliver a presidential lecture in Dublin. But he also hinted, in the most tactful way, that other lectures would be welcome, especially if they were to be given outside of Dublin. Accordingly I have spoken at Kilkenny, Limerick, Maynooth, Galway, Belfast, and to the Dublin branch. Next week there is to be a lecture in Cork. These activities are mentioned in order to plead for your benevolence, since what follows is an exhortation, or protreptic, rather than a lecture.

The purpose of the protreptic is to ask you to think, with the help of Aristotle, about the nature of the society in which we live and to enquire what is the purpose of universities in it. For many years the universities of western Europe, and especially those of the United Kingdom, have witnessed a damaging erosion of their autonomy because their political paymasters have treated them as instruments of social, economic, and political engineering, with the result that the primary duty of universities – to discover, to perpetuate, and to extend the love of learning for its own sake – has become obscured. It comes as no joy to have to tell you that, foreseeing what was imminent, I retired myself from the United Kingdom's university system at the age of fifty. It would be sad if in Ireland – where respect for disinterested academic knowledge is still strong despite the economic vulnerability of higher education here – we were, through intellectual laziness, to regard a repetition of British errors as inevitable also in the Republic. The treason of clerks can be stopped, and courage to defend science and scholarship is not

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lacking. But there are signs of ill omen. In one institution inspections of departments are introduced by persons euphemistically called ‘facilitators’ – thirty years ago we would have called them busybodies – and in another distinguished scholars are lumped together as ‘human resources’ in a crassly reductive managerial dirigisme. It is, however, reassuring that Trinity College, University College Dublin, and several other leading institutions have at their heads persons of intellectual distinction and a sound academic background. In particular it is comforting that, as President W. S. Smyth of NUI Maynooth has pointed out, uniquely within the corpus of university legislation in Europe the Irish Universities Act of 1997, Section 14, contains a definition of academic freedom.

In asking ‘what is a university for?’ it is proper that here in University College, we should remember John Henry Newman. In an increasingly secular age his vision of a Catholic university, at any rate in these islands, seems farther than ever, but Newman’s *The Idea of a University* has the merit of prompting thought, even if we cannot always accept his conclusions – he underestimates, for example, the pedagogical value of research in universities as distinct from research in institutes and academies. Some of the best lectures I have ever heard came from profound researchers who had at the time published little in print. Many such persons are now targets for ‘downsizing’ by the managers of British universities, who presume to measure the work of scholars by counting items in bibliographies.

It is Newman’s emphasis upon the need for enlargement of the mind that is so striking in our age of increasing specialisation. ‘The enlargement’, he writes, ‘consists, not merely of the passive reception into the mind of a number of ideas hitherto unknown to it, but in the mind’s energetic and simultaneous action upon and towards and among those new ideas which are rushing in upon it.’ Later he states that intellect ‘possesses the knowledge, not only of things, but also of their mutual and true relations, knowledge not merely considered as acquirement, but as philosophy’. One of Newman’s greatest strengths as an educator was his insistence upon the continuing pertinence of Aristotle to all who teach and all who study. ‘In many subject matters,’ he asserted, ‘to think correctly is

to think like Aristotle, and we are his disciples whether we will or no, though we may not know it.' To Aristotle, then, let us turn.

In exhorting I lay no claim to the possession of wisdom. It is clear to me that I am no better or wiser now, in word or deed, than I was half a century ago; however, like the Athenian lawgiver Solon, who without doubt *was* a wise man, 'I grow old for ever learning many things.' Therefore perhaps I now understand a little more than I did. Plato in the *Republic* thought that aged and time-expired Guardians should devote themselves to philosophy, but Aristotle was more severe. He criticizes the Spartans for allowing their Elders, the Gerontes, to exercise judicial authority until death (*διὰ βίον*) because, he says, there is a senility of intellect, as of body, in old age – the expression he uses is *διανοίας γήρας*. I must leave you to decide whether the present discourse is genuinely philosophical or, rather, evidence of intellectual senility. Aristotle in his sketch of an ideal city state assigned the oldest of the seniors – those who are tired by time – to the priesthoods. I cannot conduct presidential burnt sacrifice on your behalf, but I can perhaps pray that in Ireland the love of disinterested knowledge will survive amidst the overwhelming emphasis upon profit, quantification, and utility in our acquisitive society.

But, it may be objected, how can Aristotle's notions concerning politics in Greek city states have any relevance to the vast populations engaged in modern political economies? It is not always noticed that Aristotle does contemplate the possibility of polities larger than the typical Greek city state. The problem is one of communication rather than of population. He asks, 'Who can be a general in an excessively populous state? And who can give it orders, unless he has Stentor's voice?' Stentor in Homer (*E* 785–6), you recall, had a brazen voice and could shout as loudly as fifty men together – with good reason was an early brand of loudspeaker called a Stentor. For better and for worse our leaders and rulers can address us over long distances, so that political connectivity is not lost – even if in Greek terms the arrangements are essentially oligarchic.

Another possible objection to seeing our world in Aristotelian terms concerns the notion in the *Politics* of the patriarchal household as the fundamental unit of society. Emphasis upon personal

freedom and individualism in Western society has, since the 1960s, brought much happiness, but there has been an accompanying lessening of social cohesion, and this is a problem to which we are having difficulty in finding palliatives. At the extreme, the individualist can be like an isolated piece on the board of a game of draughts: the person will be ἀζυξ, ‘un-yoked’. Aristotle is quite prepared to contemplate different familial arrangements – he thinks about the reproductive system in Plato’s *Republic*; but among the many difficulties he finds in Plato’s state would be a watery kind of friendship in which children would suffer because family bonds are eliminated.

There is also the problem of natural slavery. Aristotle’s treatment of the subject is confused and confusing; he seems to be trying to offer a philosophical justification for a phenomenon so endemic that it has to be treated as part of the order of nature, but he admits that a person who is enslaved may not justly be a slave – for example the war in which he or she was captured may not have been a just war; he also admits that no-one can be really a slave who does not deserve to be a slave. Yet, even with the ascendancy of Christianity, slavery was accepted as part of the natural order – a rare critic of the sin of slave-owning was Gregory of Nyssa, who regarded it as akin to the sin of pride. If a human being is made in the image of God, then it must be a sin to assert ownership of the image of God. Lest we be too proud, let us remember that market fundamentalists will, when pressed, concede that cheap labour is necessary to the maximisation of profit. We may not speak of slavery, but I suggest to you that, for example, the Chinese women who have been lured to clothing sweatshops in United States territory in Saipan; who are compelled to have abortions there if they become pregnant; who are denied a social life outside the company’s land; and who cannot afford to pay their fares home; I suggest that such persons are slaves of the market place. Let us therefore not be too eager to point the finger at Aristotle in the matter of slavery.

Aristotle’s social realism, at a time when we are being told that the class war is over as the bland lead the bland into the salespitch at New Labour Party conferences by the seaside, is vividly helpful. If the war is over, who lost? The women of Saipan could answer ‘we did’. In a fundamental distinction in the *Politics* Aristotle

remarks that the real ground for the difference between democracy and oligarchy is poverty and riches; the distinction does not necessarily depend upon numbers of rich and poor – the rich may be many and the poor few. But if so, the polity would still be oligarchic. Thus Aristotle would regard the pursuit of higher and higher standards of material life for as many persons as possible (a professed aim of most modern states) as essentially oligarchic because there will still be a few poor and the poor will lack power. He remarks also that even when the poor have no access to honours they are willing to keep quiet if nobody bullies or robs them. However, that is not easy since the politically powerful are not always gracious; they lack *χάρις*. Grace is not the most prominent feature of free market capitalism. Consider the Thatcherite attempt to introduce a poll tax weighing most heavily on the poor. We speak much of democracy because we have elections and a wide franchise for women and men. But an ancient Greek democrat would with reason question our assumption that we are democrats. We emphasize elections, but we take too little thought for the quality of our elected rulers. Unlike the Athenians of the fifth and fourth centuries BC, we do not subject office holders to adequate scrutiny. There is no *δοκιμασία* before they take up office and there is little or no *εἴθυνα* or accounting afterwards. Some effective scrutiny is to be seen in the activities of Congressional Enquiries in the United States; House of Commons committees are toothless by comparison; there is little scrutiny of European Commissioners; and, as we have seen in Ireland, judicial enquiries, made necessary because elected representatives fail to police themselves, are for the most part tardy, cumbersome, expensive, and inconclusive. An attempt at moving towards *εἴθυνα* was made in Britain with the introduction of the Parliamentary Commissioner for Administration, the ‘Ombudsman’, but that Commissioner has no power to investigate policy, and an elected Member of Parliament can refuse to forward a grievance of a constituent. Also conspicuously oligarchic are the powers exercised under the British Official Secrets Act. The oligarchic establishment of the self-describing ‘great and good’ knows how to use the law to defend itself. An Athenian, therefore, would question our democratic credentials and Aristotle, who yet had grave doubts about radical democracy,

would have agreed with him: the millions of dollars required to secure election to the Presidency of the United States, or the close connexion between British politicians of all parties and business interests, or the ability of powerful persons here in the Ansbacher polity to circumvent the law, are all oligarchic features. Let us remember that, for an ancient Greek, *ἐὐνομία* is not necessarily a condition in which the laws are good; it is one in which the laws are obeyed, and if they are not good, they can be changed, but they must not be circumvented. How then would an ancient Greek, having read Aristotle's *Politics*, classify most Western polities? He or she would not call them democracies. They are, rather, oligarchies interrupted by elections with low turnouts.

Our century, as we look back upon it, has been characterised by extremes of death and destruction: the catalogue of evil and woe seems interminable – the massacre of Armenians, the battle of the Somme, the Slump, the Gulag, the bombing of Dresden, Hiroshima, Auschwitz, Vietnam, Ruwanda. Yet we have seen also an astonishing increase in knowledge and a deepened understanding of the vast kosmos around us. Each new physical discovery brings fresh wonders, even if it may also bring greater power to destroy or to pollute; each excavation of antiquities brings a profounder insight into the past; each newly identified species extends our perception of the complexity of living things; each newly published ancient text opens a window of retrospection; and these are discoveries in which we can all, to some extent, delight, since scientists and scholars have been conscientious in explaining what they have been doing. We can all share in the sense of wonder at the idea of the Big Bang, at the thought that we are somehow present at the creation because the noise of the cosmic background radiation can be detected; here indeed is an equivalent of the Pythagoreans' music of the spheres. And is it not wonderful that at Brookhaven in Long Island energies are about to be generated for minute periods of time so large that they may repeat the densities and temperatures of the Big Bang itself?

The notion of wonder was greatly respected by Aristotle. He tells us in *Metaphysics* A how wonder and puzzlement drove Thales and other early thinkers, following the mythological poets of *Theogonies*, to try to explain the motions of heavenly bodies, the seasons, the nature of what there is. This process of enquiry he calls *θεωρία*; it is

both the highest and most delightful of human activities, since all humans desire knowledge. When we engage in the contemplation of knowledge, we exercise the divine element within us. Yet human *θεωρία* is not God's. God contemplates Godhead. Humans can contemplate knowledge by the application of *noûs* after the perplexity has been thought through. In the *Nicomachean Ethics* the happiest life is the contemplation of philosophical truths rather than the seeking of them; but if we lacked perplexity we would be missing the joys of study, and once a piece of knowledge is gained we would not, I suggest, want to contemplate it continuously though we can return to thinking about it again and again. In modern science and scholarship discoveries often produce new perplexities at once, so that one *θεωρία* (though we may return to it) will in due course be followed by another.

Let us look at some twentieth-century examples of *θεωρία*. These are all instances, in the humanities and the sciences, of the pursuit of knowledge for its own sake. Not all of them presuppose the use of expensive electronic or other equipment. Some are elementary, but none is trivial – additions to knowledge are never trivial; and all can be said to bring happiness to the researchers and investigators and contemplators. And they all support Aristotle's contention, made explicit in the *Ethics*, that perfect happiness is a contemplative activity; not only that, but contemplation is a part of a life of goodness. There is, moreover, in doing philosophy, an exquisite pleasure in sitting down to work, as the young Aristotle insisted in the *Protrepticus*, *μεθ' ἡδονῆς ἢ προσεδρεία γίνεται*. The pleasure is open to all, except the destitute, at any time of life. I emphasize 'at any time of life', because universities should make especial efforts to welcome mature students, since they are strongly motivated to obtain knowledge and life has sharpened their judgement.

First, let us take an example embracing both geology and evolutionary biology. In British Columbia the Burgess Shales contain marine fossils of the Cambrian age. These delicate remains were excavated in the early years of this century and kept in the Smithsonian Museum at Washington. The excavator of the finds, C.D. Walcott, published them as far as possible within the then known schemes of taxonomy, but careful work by Whittingham, Conway Morris, and Briggs (the last a Trinity Dublin graduate)

revealed through careful reconstruction a great variety of marvellous creatures, many of which lacked evolutionary descendants. Such a creature was the appropriately named *Hallucigenia*, which may have stood on seven pairs of struts on the sea floor and have spent much of its time stationary. *Wiwaxia* crawled on the sea floor, but it does not fit easily into any extant higher taxon. On the other hand, *Pikaia*, the earliest known chordate, could even be the ancestor of all vertebrates, including ourselves, since it has a rod along its back, though there may well await discovery other chordates in the Cambrian. Since I wrote that last sentence, there has been announced a discovery of two distinct fish-like creatures in China; they are the oldest vertebrates and lived in the Cambrian seas some 540 million years ago. Of the discoveries in the Burgess Shales Stephen Jay Gould wrote that they constitute a new interpretation of life's history. 'This goal, once achieved, brings no earthly benefit. Paleontology has no Nobel prizes. . . The main reward must be satisfaction – the privilege of working on something exciting', 'the internal peace of accomplishment', 'the rare pleasure that your life made a difference'. Gould leads an Aristotelian life of the mind without knowing it, but he is also, unlike Aristotle, a strict evolutionist in that he accepts the unpredictability of the operations of natural selection. I found his book on the Burgess Shales, *Wonderful Life*, profoundly philosophical and not only because of the questions he addresses. We may ask, without hope of answering, so many questions. If in the history of life in the Cambrian epoch such enormous diversity of creatures is possible, can the competition of natural selection be intermittent rather than continuous? What is meant by fittest, if catastrophes – a hit by a comet, mighty earthquakes, exclusion of light by volcanic eruptions – cannot be prepared for by competing creatures? What is selective about near total destructions such as seem to have overcome most of the dinosaurs? Evolutionary selection may provide a complete explanation of losses of taxa found in the Burgess Shales, but is there yet room for providence in the phenomenon? This last may, admittedly, be a theological question – and none the worse for that. Finally, given that recognition of taxa produced in natural selection depends upon taxonomy, what is to be done when taxonomy conflicts with the results of DNA (deoxyribonucleic acid) examination? A striking instance of such a problem is the discovery, thanks to

DNA, that fungi are much closer to the animal kingdom than they are to any kinds of plant. It is clear that while natural selection is a fit subject for *theoria* we have been returned in evolutionary biology to a condition of perplexity and wonder. And that must be for all of us, not for natural scientists only, thoroughly beneficial and a cause of contemplation. But, I must add, if a strict Darwinism may no longer suffice, we are not thereby required to defer to the assertive evangelists of Creationism in any of its forms, political or other.

My second example of twentieth-century *theoria* is taken from physics. The earlier work on nuclear theory was conducted in a climate of friendly cooperation in many centres of research. Over the enquiries informally presided the genial spirit of Niels Bohr. The character of the research was described by J. Robert Oppenheimer in 1953 in *Science and the Common Understanding*: 'Our understanding of atomic physics, of what we call the quantum theory of atomic systems had its origins at the turn of the century and its great synthesis and resolutions in the 1920s. It was a heroic time. It was not the doing of any one man; it involved the collaboration of scores of scientists from many different lands, though from first to last the deeply creative and subtle and critical spirit of Niels Bohr guided, restrained, deepened, and finally transmuted the enterprise. It was a period of patient work in the laboratory, of crucial experiments and daring action, of many false starts and many untenable conjectures. It was a time of earnest correspondence and hurried conferences, of debate, criticism, and brilliant mathematical improvisation.' Oppenheimer continues, with perhaps too gloomy a view of the possibilities for a sense of the unity of knowledge: 'For those who participated, it was a time of creation; there was terror as well as exaltation in their new insight. It would probably not be recorded very completely as history. As history, its recreation would call for an art as high as the story of Oedipus or the story of Cromwell, yet in a realm of action so remote from our common experience that it is unlikely to be known to any poet or any historian.'

We do indeed need a Lucretius, or at least a new Erasmus Darwin, for the new atomic age to tell us in poetry about the nature of things. As humanists too, we sometimes share with scientists the excitement of the friendly quest for truth – I knew the excitement when we were working on the excavation of the

Minoan site – the earliest known oversea Cretan colony – in the island of Kythera in the sixties and seventies. In a beautiful passage in the *Ethics* Aristotle explains the wondrous delights of the search for wisdom, undertaken by ourselves or in alliance with colleagues. Having remarked that the activity of philosophic wisdom is the most pleasant of virtuous activities, he says that the pursuit of wisdom brings pleasures wonderful both in their purity and long-lastingness. He continues: ‘The philosopher, as an individual, can think about truth, and the wiser the thinker, the better it can be done; but perhaps it is better for the philosopher to have colleagues, even if the individual thinker is the most self-sufficient.’ In physics a fine instance of an individual who worked alone but also with colleagues is Hideki Yukawa. He was a grandson of a samurai and his father was a professor of geology. From the grandfather he learned the Confucian classics – the Confucian sage and the Aristotelian *phronimos* have much in common. In the early 1930s at Osaka University Yukawa worked out that in the nucleus the range of a force varies inversely with the mass of the particle that transmits it. He then argued that the force confined within the nucleus should be conveyed by an as yet unidentified particle having a mass two hundred times that of the electron. This was a courageous hypothesis, since Occam’s razor required that entities should not be multiplied unnecessarily. Soon afterwards C.D. Anderson and his colleagues at Caltech discovered in cloud chambers particles approximating to the particle proposed by Yukawa but they were later shown to be too weak to transmit the very strong nuclear forces. Meanwhile, at Kyoto in miserable conditions during the war, Yukawa’s students and collaborators continued work on nuclear theory. Two of them, Sekata and Inoue, proposed in 1942 that Anderson had seen, not Yukawa’s particle but a particle resulting from the decay of it. The Yukawa particle is now called a pion and the secondary, lighter, particle, the muon. Spectacular verification, at relatively small cost, came from C. F. Powell and his team at Bristol in 1947; they used photographic emulsions to detect charged particles. Grains marked the tracks of particles through the developed emulsion after the plates had been exposed to cosmic rays at high altitude (Anderson’s experiments had been conducted close to sea level).

Powell and his group identified primary and secondary mesons, that is to say pions and muons, the former when stopped in their tracks decayed into the latter. The pion was Yukawa's particle and it was 273 times the mass of the electron as against the predicted 200 times. As Chen Ning Yang remarked in his Princeton lectures on elementary particles, 'The beautiful and timely work of Powell's group, revealing this unexpected hierarchy of mesons, is another illustration of (the) fact . . . that advances in our knowledge in physics are facilitated, and at times often only made possible, by the development and improvement of experimental techniques.' One may add that Powell's careful experiments cost a fraction of the bill for the massive, and massively expensive, cyclotron then being built at Birmingham, as Freeman Dyson pointed out in a piquant essay. The results from the cyclotron were slight in comparison with those from Powell's emulsions. The moral is that big science is not necessarily the best science. Yet administrators in British universities at any rate tend nowadays to like expensive undertakings because they can charge a percentage of grants to administrative expenses. The result is that inexpensive work on *θεωρία* may suffer. It should be obvious that in such distorting circumstances the Humanities are especially vulnerable. As an example of a low-cost undertaking with high theoretical yield, we need look no further than the fine work being done in University College Dublin by Professor David Fegan and his colleagues on gamma rays emanating from the edges of Black Holes. Here and in the shared observatory in Arizona, theory, observation, and experiment progress together. Compare the advances made by Yukawa, Anderson, and Powell. To suggest that they or indeed Professor Fegan should have been subjected to the humiliation of Research Assessment Exercises or Teaching Quality Assessments would have been impertinent. Yet when I wrote to the British Secretary of State for Education to complain that the assessments were corrupting and demoralizing, I was told that the taxpayer needed to have value for money. It is not clear that taxpayers were ever consulted, but one may conjecture that taxpayers are far more interested in having their offspring or themselves taught well by persons who can be trusted to give of their best both as teachers and seekers after truth. The growth of

managerialism in British universities is a symptom of the most serious loss from them in the past twenty years – the loss of trust. Instances of corruption caused by the linkage of grants to bibliographies are both the tendency to recruit visitors with long lists of writings for the period of the assessment and the continuance of payment to departed members of staff so that their lists may be submitted. Not only is the ambience corrupt; it is also corrupting since it promotes the excessive multiplication of insubstantial items, some unread, some unreadable, in periodicals.

Let us move to some examples of *θεωρία* in scholarship. Here too, though there may be less public acclaim than in Science, the wonderful pleasures described by Aristotle are to be found. Such pleasures are the solving of a chronological problem, or the finding of the reason why by a historian, or the emendation of a corrupt text by a philologist, or the gaining of insight into the mind of a poet or a dramatist. There is a certain joy in recognising a name in an apparatus criticus, and there is a kind of immortality if a competent editor accepts the conjecture into the text. Rarely do the Muses smile, but when they do, the delight in a scholar can be intense. There is something wonderful in being able to see, for oneself or with the help of others, what an author wrote hundreds or thousands of years ago, though the extant manuscripts or tablets are defective and far removed in time from the autographs. Such conjectures are analogous to the postulation of elementary particles, and the intellectual demands, since there is no mathematical guidance, may perhaps be almost as great. To suggest that such tasks as textual criticism or the establishment of dates can be quantified or graded in Research Assessment Exercises or the like is absurd; it has been depressing to see how weak the resistance of British academics has been to these managerial bullyings. Much of the blame is to be directed to the Committee of Vice-Chancellors and Principals. The British oligarchies are adept at rewarding conformity, and at defusing criticism, with honours: throughout history oligarchs have known how strong is the force of human vanity. These managerial interferences are not only offensive: they reveal an endemic philistinism, an insistence upon grading or quantifying the qualitative and the non-numerical. They are symptoms of a failure of intellect in the highest reaches of

government. As so often, Aristotle has some pertinent insights: in the *Nicomachean Ethics* he states that it is the sign of an educated person to look for accuracy in each kind of thing in so far as the nature of the subject matter allows. It would be as mistaken to accept probable reasoning from a mathematician as to demand logical demonstrations from a rhetorician. By inflicting procrustean tests upon university teachers and researchers, the managers and their academic allies, who should know better, are attempting to quantify the unquantifiable. The British school system is now overcrowded with tests, examinations, assessments from nursery school onwards, with the result that teaching to think is giving way to teaching to pass examinations. Modular systems in three- and four-year full-time degree courses are having the same effect in universities, as final examinations, which used to test both memory and digestion of knowledge, become less significant. The cult of technique thus drives out reflective thought, with the consequence that some of our graduates when confronted with the unfamiliar or the unexpected may prove to be less versatile and adaptable than their predecessors.

Reflective thought is a kind of *θεωρία* to which, with the Humanities in mind, we may now return. One of the gifts to Ireland of the mathematician Éamon de Valera was the setting-up of the Institute for Advanced Studies and the bringing to it of the outstanding theoretical physicist Erwin Schrödinger. At University College Dublin Schrödinger delivered a series of lectures on early Greek thought, and a revised version of them was given at University College London. They appeared in a book *Nature and the Greeks*, published in Cambridge in 1954. The book is an admirable introduction to Presocratic philosophy, especially in its mathematical aspects. Concerning Pythagorean cosmologies Schrödinger wrote: 'One of the early Pythagoreans, Petron, contended that there were altogether 183 worlds, arranged in a triangle, though by the way this is not a triangular number. Is it very irreverent to remember on this occasion that we were recently told by one eminent scientist that the total number of elementary particles in the world was $16 \times 17 \times 2^{256}$, where 256 is the square of the square of the square of 2?' Schrödinger did not resolve the problem of Petron's triangle, but an examination of Plutarch's

account of the Petronian worlds shows that his triangle was not a Euclidean triangular number. A Euclidean triangular number has the units arranged thus:



so that the sequence is 3, 6, 10. But Petron's triangles are defined by the perimeter only:



the sequence being 3, 6, 9. Petron's 183 worlds were arranged in an equilateral triangle having a side of 62 dots. Thus we learn that there were two kinds of Pythagorean triangle, and no doubt there were also Pythagorean squares enumerated by the lengths of their perimeters only. This result, elementary but not trivial, is, I submit, an addition to knowledge and worthy of contemplation, but it has, so far as I can see, no relevance whatsoever to the Celtic tiger or to gross national product, active though all Irish universities have a duty to be in promoting both. My argument, after all, is not that we must shun the market place – none can survive in isolation from it – but that we must not allow it to dominate us or be unduly cooperative with the functionaries who assume that it should dominate us.

An anecdote recounted by Aristotle about Thales is to the point here. Having been told that he was poor because philosophy was useless, he employed his meteorological knowledge to discover that there would be a good crop of olives next season; he therefore hired all the olive presses in Miletus and Chios. When there was a strong demand for the presses, he let them at a high charge and made a profit. Thus, says Aristotle, Thales showed that philosophers can become rich, but they have other business in mind. With Thales we can compare Tim Berners-Lee; when he was working at CERN in Geneva, he devised the World Wide Web and created its lingua franca, the hypertext mark-up language. From 1991 onwards the Web has grown rapidly, but Berners-Lee chose not to take the path of profit, since, with rare idealism, he holds that technology must

first respect and serve human needs. Such idealism is urgently needed in universities, since the practice in sponsoring companies of requiring all results of applicable research to be patented is restricting the free exchange of knowledge.

My next example is taken from Near Eastern cuneiform studies. In the early years of this century German excavators working at Boghazköy, the Hittite capital Hattušaš, in central Turkey unearthed hundreds of cuneiform tablets written in the second millennium BC in an unknown language. Akkadian and Babylonian signs were recognisable, and it was clear that the writers of the tablets inherited Mesopotamian scribal traditions. Prevailing opinion among scholars was that the language of the Hittites of Hattušaš was not Indo-European. One of the scholars who worked on the tablets was a Czech, Dr. Bedrich (Friedrich) Hrozný, who served during the First World War in the Austro-Hungarian army. Hrozný, though in uniform, was enabled to continue his studies through the tolerance of a Lieutenant A. Kammergruber, who deserves a lasting memorial in the footnotes to the history of scholarship. Among the sentences pondered by Hrozný was this one (in simplified transcription): *nu NINDA-an ezzatteni vâdar-ma ekutteni*. The only recognisable word here was a Sumerian ideogram *NINDA*- meaning 'bread'. Bread is for eating, and Indo-European cognates for the word 'eat' 'essen' are of the form *ed-* or *et-* (for example, Latin *edo*, 'I eat', or Old High German *etan*, Sanskrit *ad-*, Greek *ἐδ-*, Irish *ith-* or *eth-*). The next word, *vâdar*, was instantly comparable with English *water*, or Russian *vodá*, or the reconstructed Indo-European **wod-*. Hrozný therefore interpreted the sentence to mean 'Now you (plural) will eat bread, moreover you will drink water.' (Better would be 'either . . . , or . . .'). Hrozný lectured on the Indo-European character of Hittite to the German Orient Society in Berlin on November 24, 1915, and his results were published as 'Die Lösung des Hethitischen Problems' in the *Mitteilungen* of the Society of the same year. It was some time before the result was accepted, partly because Hrozný's subsequent book relied upon some doubtful etymologies, but disciplined work by the strict philologist Friedrich Sommer brought rigour, and by 1940, with the publication of the *Hethitisches Elementarbuch*, of Johannes Friedrich,

the character of the language was well understood. The Indo-European character of Hittite had in fact been suggested as early as 1902 by the Norwegian scholar Knudtzon, but the notion had not been well received. As for Hrozný, he added greatly to knowledge by the exercise of his *noûs*. He too has a kind of immortality, but it cannot be said that he contributed much to the Austro-Hungarian war effort.

The next instance of *θεωρία* links in a remarkable way Near Eastern Studies with English literature. Dr. Stephanie Dalley of Oxford is a scholar of cuneiform and an editor and translator of Mesopotamian mythical texts. Recently she put to me a problem in an essay of Sir Thomas Browne, the seventeenth-century author of *Religio Medici* and *Urn Burial*. The essay is the charming work entitled *The Garden of Cyrus*, to which Dr. Dalley had been drawn by her studies in the archaeological and written evidence for the Hanging Gardens of Babylon. Concerning the Gardens, Browne says: 'Nebuchodonosor, whom some will have to be the famous Syrian king of Diodorus, beautifully repaired that city; and so magnificently built his hanging gardens; that from succeeding Writers he had the honour of the first' – that is to say, of being the first to have built the gardens at Babylon. Later, however, Browne writes concerning Cyrus the elder, who was a Persian, not a Babylonian: 'Cyrus the elder brought up in Woods and Mountains, when time and power enabled, pursued the dictate of his education, and brought the treasures of the field into rule and circumscription. So nobly beautifying the hanging Gardens of Babylon, that he was thought to be the author thereof.' Dr. Dalley was understandably puzzled by the second passage, because she could find no source for Browne's statement that Cyrus was the creator of the Hanging Gardens of Babylon. The statement, however, has a certain plausibility because Paradise, which came to mean 'garden', was, as Browne knew, a word of Persian origin, and the Persians took Babylon. The solution to Dr. Dalley's problem is to be found in Diodorus Siculus, whom Browne quoted. There, in Book II, 10.1, a Syrian king is indeed mentioned; he is said to have built the gardens for a Persian concubine who longed for the mountain meadows of her native land. Browne's reference to Cyrus comes from a text in which KYPOY, 'Cyrus', replaced CYPOY, 'Syrian'. The text was either a

manuscript (Browne was a scholar, and quite capable of reading the passage in manuscript) or a printed edition in which KYPOY was given. It is interesting that in modern editions of Diodorus, at least in those I have inspected, the variant KYPOY does not appear – for example, it is absent from Vogel’s Teubner Diodorus of 1888. Here, too, then is a small addition to knowledge. Cyrus was not said to have built the Gardens, but there were variant texts in which they were said to have been his work. I do not think that this minute instance of contemplative scholarship is worthless, even if it has nothing to do with market forces. We have recovered a fact, an unimportant one perhaps; but as the philosopher J.L. Austin once remarked: ‘Importance is not important, facts are.’

Our next example takes us to a more distant past than the epoch of the Hanging Gardens. In a brilliant article in *Celtica*, Volume 6, Professor Calvert Watkins of Harvard studied proverbial metres in Old Irish, Slavonic, Vedic, Greek, and other languages. He concluded that some proverbial expressions in these texts preserved a primitive Indo-European verse form. That proverbs contain early thought was well understood by Aristotle, who saw them as remnants of ancient philosophy preserved through catastrophes in the past owing to their wit (*δεξιότης*) and brevity (*συντομία*). (In our time of linguistic obfuscation by spin-doctors, proverbs are, owing to their laconic precision, more to be cherished than ever.) The antiquity and philosophical content of proverbs were discussed by Aristotle in the early work *De Philosophia*.

The archaism of some proverbs in Greece is confirmed by their frequent presence in early Greek literature. They are found in Homer and in Hesiod, and the paroemiac or proverbial metre is easily adapted to the hexameters of Greek epic. Hesiod’s didactic poem *The Works and Days* includes many proverbs. A typically Hesiodic precept is ‘keep due measure; fitness is best in all things’ (line 694). Here the second sentence is in paroemiac form: *καιρὸς δ’ ἐπὶ πᾶσιν ἄριστος*. In lines 217–18 Hesiod has three paroemiacs in succession. ‘Justice beats Insolence when she comes out to the finishing-line; only when he has suffered does the fool understand this.’ The expression ‘coming out to the finishing-line’ appears in our manuscripts as *ἐς τέλος ἐξελθοῦσα* and so lacks the characteristic closure $- \cup \cup | - \times$ of a paroemiac. Yet the proverb, long before

the coming of the Phoenician script to Greece, would have had a paroemiacal ending: ἐς τέλος *ἔξελυθούσα. In Greek the aorist indicative ἦλυθον, 'I went', is primary and ἦλθον, lacking the short upsilon, is derivative. The short upsilon is lost from all but the indicative mood of the aorist, but it was there originally. Old Irish *luid*, 'he went', confirms the presence of the *ū*. Thus Hesiod gives three proverbs in succession in the proverbial metre and evidence in them of a simple moral philosophy. Here, *θεωροῦντες*, we are enabled to see far into the past of human thought.

In Ireland, too, proverbs help us to see into the past. Some of you may know the Irish proverb 'Ba é chéad bhia ar an sliogán do, na scéalta sin' said of someone brought up on old stories. It is to be found in Gabriel Rosenstock's recent collection. The literal meaning is 'The first food on the shell for him was those tales.' The words take us into the past, when shells were used for spoons.

A last example of knowledge for its own sake comes from a text familiar to most of us. St. Matthew's Gospel 6:28–9 has the words – in the translation of the Revised Standard Version – 'And why do you worry about clothing? Consider the lilies of the field, how they grow; they neither toil nor spin, yet I tell you, even Solomon in all his glory was not clothed like one of these.' It comes as a surprise to learn that these words of Christ are insecurely reported, though one may note that we are being told to consider the glorious flowering of the lilies, not their growing. The words 'how they grow' are in Greek uncials ΠΩΣΑΥΞΑΝΟΥΣΙ or ΠΩΣΑΥΞΑΝΕΙ, singular or plural. The singular after the neuter plural τὰ κρίνα, 'the lilies', would be more classical. In 1938 Dr. T. C. Skeat discovered in the British Museum that the text of the Codex Sinaiticus did not give, in the first hand, πῶς αὐξάνουσι, 'how they grow', but πῶς οὐ ζαίνουσι. This is, Paul Maas claimed in his book *Textual Criticism*, as surprising as it is convincing. *ζαίνειν* is to card wool. Our Lord's instruction thus may well have been much more vivid and consistent. 'Consider the lilies; they card not, neither do they spin.' The variant *is* indeed surprising, but it reminds us that we do not always know what we think we know; and that surely is the beginning of Socratic wisdom.

Universities need to busy themselves with practical topics and with being useful – from criminal law to clinical medicine, from

welfare economics to petroleum engineering, from sociology to business and media studies, and even to much-needed courses in remedial grammar and syntax. But they betray their true nature if they forget the pursuit of learning and skills for their own sake, without regard to job-finding or profits or commercial competition. We cannot do without what Aristotle called *χρηματιστική*, the manipulation of moneys with a view to interest, but we should not as parents, or teachers, or scientists allow ourselves to be browbeaten into regarding the market place as the chief end in life. Aristotle showed that we all need a comfortable *αὐτάρκεια*, self-sufficiency, to act as good human beings, and in his historical scheme of human progress agriculture, economic activity, craftsmanship, and political organisation are all of them accounted a kind of skill or expertise (*σοφία*). But the highest and historically latest *σοφία* is philosophical in a wide sense, embracing matters divine, and celestial, and unchanging (as in the concepts of mathematics). We can all try to attain to a kind of *σοφία* in our lives if we use our time well, and we must exert ourselves to ensure that obstacles are not put in our way. We must protest when ‘high-quality student entry’ turns out to be admission of a large number of fee-paying, but ill-equipped, students into a softened subject. We must object when small but intellectually distinguished departments are suppressed by tunnel-visionary enumerators – Geology in Belfast comes to mind. Part of a letter of Aristotle survives in which he tells Alexander that small cities are as deserving as great ones, since the Graces will reward benefactions to both equally. The Graces favour small departments also. We must criticize flatulent jargon, examples of which can be seen daily in advertisements for academic appointments. No single act brought home to me the extent to which our rulers have ceased to comprehend the idea of a university than the recent demand of Baroness Blackstone, who speaks for the British Government on Higher Education, that universities treat their students as ‘consumers’. Nothing would be more likely than such crass materialism to corrupt the trust and friendship that should unite teacher and pupil, and colleague with colleague.

We have, as learners and instructors, to be confident in ourselves as humans with minds of our own. The electronic revolution has

brought many blessings, but we need to think calmly and deeply before and after we make use of the vast computational and other powers now at our disposal. Recently I have read theses for universities and typescripts for university presses in which the bibliographies testify to their authors' skill at capture of data; but the texts of those works show, all too often, little evidence of inward digestion of the writings cited. To accumulate is not to think, and a certain maturity is required to be selective, to understand, for example, that the most recent article is not necessarily the most illuminating.

There is a danger, especially in the Humanities, that we may adapt ourselves to the programming rather than think what programme, if any, suits our needs. Let us remember, too, that artificial intelligence is not intelligence; that virtual reality is not reality; that information is not identical with knowledge, though software manufacturers would like us to think that it is. Knowledge is not understanding, and understanding is not wisdom. There is hope that parallel processing will lead to an equivalent to the human capacity for inference, but even if circuitry does acquire that power, there will still be no substitute for creative imagination, for insight, for love, for friendship. In the humanities, within and without universities, all of us who try to think for ourselves, that is all of us who care for the life of the mind, for intellectual friendship, and for the alliances between seekers after truth and civility, must fight against the reductivism of the managerial dogmatists, of the sort of people who, with their hard faces, flinty eyes, and sharp suits, describe conscientious scholars as under-performers; who think how splendid it is to be re-titled Director of Finance instead of Bursar; who monitor incoming telephone calls to make sure that mere academics lift the receiver within twenty seconds; who divert money from scholarship in order to organise touchy-feely bonding seminars for aspiring managers in expensive hotels so that they may learn to recite the latest buzz-words and buzz-phrases uttered by the gurus of business schools.

Here too Aristotle offers comfort in the struggle against administrative intrusion. He remarks that we judge well the things we know; those who have been educated in a subject are good judges of that subject, and those who have received an all-round education are

good judges in general. The technocratic politicians who treat universities as though they were identical with profit-driven corporations persistently demonstrate their own lack of judgement and their deficiencies in all-round education. So also, alas, do the careerists who cooperate with them.

Our academic friendships will continue to be between teacher and taught (as much over cups of coffee as in the lecture-room); between enlightened patron and beneficiaries; between colleague and colleague, both within and between departments. If colleagues do not treat colleagues with friendly decency, in the pursuit of knowledge for its own sake, then the managers will pick them off one by one and department by department. Aristotle, with greater insight than many modern moral philosophers, sees friendship as a binding force in domestic and civil society, as we are shown again and again in the *Eudemian* and *Nicomachean Ethics* and in the *Politics*. If we are to foster friendship in our universities, we need academic freedom, and academic freedom comes from autarky, the self-sufficient control of our own resources. This means in the long run that we have to find moneys not only for specific undertakings but also for capital purposes, and, as is well known, to find capital for the purposes of autarky is the most difficult task for the fundraiser. Capitalisation, as in the leading universities of the United States, offers the best hope of a self-sufficient, truth-seeking, academic life of the mind inspired by the blessings of the Muses and free from political manipulation and managerial aggrandisement.

Finally, I shall read to you a translation of a poem composed by Aristotle. It praises Goodness and honours Aristotle's friend Hermias, ruler of Atarneus, whose kinswoman Pythias the philosopher married. Hermias also ruled over Assos near Atarneus, in the southern Troad. At Assos Aristotle and his Platonist friends did philosophy, studied the world of nature, and enjoyed the benefactions of their patron, who was also a lover of learning. Later the Persians put Hermias to death. His last command was to tell his friends that he had done nothing unworthy of philosophy.

It is fitting to end with the poem because Aristotle brings together many of the themes emphasized in my proreptic –

knowledge given by the Muses, friendship, enlightened patronage, and courage to act and to think independently:

Virtue, hard to win for human kind, fairest pursuit in life, O maiden, to die for your beauty would be a fate in Hellas worthy of emulation and to endure fierce, unwearied labours. Such is the strength you cast into the mind, immortal, better than gold and noble birth and the soft gaze of sleep. For your sake the sons of Zeus, Herakles and the sons of Leda, endured many things in their heroic tasks as they hunted after the power you give. In yearning for you Achilles and Ajax came to the halls of Hades, and for the sake of your beloved form, Hermias whom the hero Atarneus cherished forsook the rays of the sun. Therefore the deeds of Hermias are to be praised in song, and the Muses, daughters of Memory, shall declare¹ his immortality, as they honour Zeus the god of hospitality and the privilege of firm friendship.

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Trinity College Dublin
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¹ *ἀδδήσοοσι* Wilamowitz, *ἀδξήσοοσι* codd.