

CREATIVE THINKING

A Multifaceted Approach

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OPENING ADDRESS

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Thank you, Mr. Chairman, for inviting me to speak on this occasion. Of course, I'm quite used to making noises of welcome to people coming to Conferences at the University. There's one thing, however, which is not usual today: I have been given 20 to 25 minutes to make them in. I must say that my mind is geared to making speeches in two different time spans: either ten minutes, which is the time I take for the homily which I give every Sunday in church, or 50 minutes which is the time for a lecture at the University. Twenty minutes is not a time-span my brain is accustomed to, that's why I have put my watch in front of me, on the table.

The allocation of the unusual time-span for this talk is because I'm supposed, in accord with studies made by the former Dean of our Faculty of Education, to illustrate the most characteristic feature of an education manager in small states, which is to speak from under several hats. These hats are not to be confused with the different thinking hats which Professor de Bono recommends we should wear on different occasions. They relate strictly to function. I'm expected to be donning and doffing particularly two hats: the rectorial biretta (luckily not literally in this heat) to make a few sounds of welcome; and that of Professor of Philosophy, to make some preliminary remarks on the precise subject of the conference, namely, thinking.

Let me begin with a remark from under this second hat. In my reading of a small sample of the vast number of works written on thinking, I found that they tended to oscillate between two limits. The first limit is set by the works which could be said to constitute, or attempt to constitute, a cartography of discovery. They are essentially maps. They tend to be produced by physiologists, who discuss the functions of different parts of the brain and smaller topics as well as by psychologists who attempt to describe the best conditions under which thinking

is effectively done, very often going into environmental considerations and analogous factors. That is naturally the approach which appeals to the educational manager, or Rector, in me.

The second extreme limit is set by the kind of works which attempt to constitute a rhetoric of rigorous formal exposition. That is usually what logicians have attempted to do, and, more generally, philosophers. They try to exclude what they regard as the contingent circumstances in which thinking is done, to try and bring out an abstract structure which guarantees truth preservation from your starting point to your conclusion. This second approach appeals more to the philosopher, or logician, I once aspired to be.

It is generally acknowledged to have been a great merit of Frege's to have insisted on the distinction between these two ways of procedure, in the course of demolishing Kant's philosophy of mathematics by showing that Kant habitually mixed up the psychology of the genesis of ideas with proofs of the validity of the reasoning in question. While I agree that it was indeed a great merit of Frege's to have insisted sharply on the distinction between the psychological and the logical approaches to thinking, I think that there also is a great danger in this insistence, because it leads to two unilateral considerations of thinking.

By eliminating the logical considerations, that is, the truth preservation considerations, from the psychological accounts, we tend to get a dust cloud of particulars, results which are essentially of biographical interest, a loss of universality.

The other approach, that is the logical without the psychological, makes us lose the human character of reasoning. It makes us forget that the process is not incidental to the results obtained. It leads in fact to our not realising, or not sufficiently realizing, that logic would not exist outside dialogue.

Having made that preliminary remark, to which I will return at the end, I will now doff my philosopher's hat to put on, for a little while, my rectorial hat. I want to say that I don't think it is incidental that this conference on thinking is taking place here, that is, in Malta, and more particularly, in the Aula Magna of the University of Malta.

As I said, a whole school, a whole tradition, in its approach to thinking, has tried to consider it in abstraction of the time and place where it takes place. But it is also noteworthy that the historians of philosophy have usually, or very often, named schools of thought according to the place where the thinkers, philosophers, conducted their activities. If they stationed themselves in city-gate porches, they come to be called Stoics; if they did philosophy-teaching walking up and down, as Aristotle is said to have done, they are called Peripatetics. When the philosophers moved out of the monasteries into the schools in Paris, Bologna, Oxford, and so on, they came to be called Scholastics, precisely because of the place where they conducted their activities.

I do not think that this almost universal practice of historians of philosophy is misleading. I don't think it is just a paradoxical irony that Plato's followers are labelled academics, precisely with reference to the location of their master's teaching in a garden (which has symbolic association almost impossible to remove), or that Plato himself, in his own dialogues, went usually to great pains to verbally plant the physical settings, the street corners, or the dinner parties, in which Socrates conducted his gadfly activities.

I would like, in order to make my point a little bit more convincingly, to remind you of the famous passage in which Descartes described the discovery of his method of thinking. It begins perhaps surprisingly with what the Jesuits, from whom he got his education, would have called a *composition loci*, a composition of place. He wrote: "I was at that time, the night between the 10th and the 11th November of 1699, in Germany, whither the wars which have not yet finished there had called me. And as I was returning from the coronation of the Emperor to join the army, the onset of winter held me up in quarters in which, finding no company to distract me, and, having fortunately no cares or passions to disturb me, I spent the whole day shut up in a room, heated by an enclosed stove, where I had complete leisure to meditate on my own thoughts". At the end of the day he fell into a snooze and, as he says, dreamed up the method whereby mathematics could developed into the one language with which to describe the material world. Descartes considered his dream to have been some kind of divine revelation. He made a vow to go, as an act of thanksgiving, in pilgrimage to Loreto, where allegedly there stood the house, miraculously transported, of the Virgin Mary, the representative of mankind within whose body the word of God was conceived.

Now why did Descartes choose to depict in such detail the setting in which he conceived his famous method (or, more precisely, its starting point: *cogito ergo sum.*)? It is, at first, a graphic expression of the dualistic picture which his philosophy projects. He lies in bed, in a heated room, while outside it is wintry and cold. There is a reassuring and comforting inside contrasted with a threatening and disappointing external sphere. The contrast is reinforced by the turbulence outside and the restfulness within. Thus Descartes begins by locating himself in a material, spatio-temporal setting, with a contrasting outside and inside. But then, for the physical setting to become the starting point of an inner journey, he had, as it were, to sink into a physical and mental obscurity. He had to go into the physical semi-darkness which induced a mental semi-darkness. The environmental contrast between outside and inside is evoked as the birth condition of the Method, and yet it only becomes that because it leads to this lapse into dreaming, into a half-conscious state, which becomes a medium of interaction between bodily conditions and mental activity!

Descartes' exposition of the genesis of "cogito, ergo sum" shows that he believed implicitly that the local, material context in which thinking occurred was relevant to its content, yet paradoxically, in his explicit doctrine, he formulates the sharpest possible dualism between the two. That doctrine, I think, is the background to the bifurcation of the approaches to thinking into logical or psychological, with no interference between them, that I alluded to at the beginning.

It seems quite clear to me that out of Descartes' account of how he came to think his most characteristic and striking thought, it is not his inclusion of the material setting which he presents as the necessary condition for his mind's impregnation with the seed-idea of his new philosophy, but his description of himself as "undistracted by company", with no worries or passions to disturb him, shut up in his own mental activity, as though he were a purely logical spirit, rather than a psychological, embodied, animal that has been adopted as the model and prototype of thinking, especially philosophical thinking, at least in most of the academic world.

I think this has been a disaster for Universities. They became places where people were busy thinking on their own — well, perhaps occasionally talking to each other, examining each other, reading each other's books, and falling asleep during each other's lectures — but in a way which almost suggests that there was no world outside of themselves for them to be talking and thinking about!

The two approaches to thinking are related to two concepts of truth. On the one hand, there is the concept of truth as a picture of the world independent of human intercourse; and on the other, the concept of truth as a relationship between persons talking to each other. Thinking, when related to the first concept of truth, will be sought in conditions of as great logical abstraction as possible related to the second concept, it has necessarily to be considered the context of people talking, bodies interacting, brains at work, of these material conditions without which there would be no thinking at all.

I think that it is not irrelevant to the topics we have come to discuss that we are holding this meeting here, in Malta, that is, on a tiny island, the inhabitants of which long ago realized that they could not survive, let alone develop, in isolation. We have come to consider our country, this rock between three continents, as essentially a meeting place, a crossroads. History has made us the only Europeans who speak a Semitic language. Our major artistic heritage is an eclectic synthesis of the various baroque idioms developed from Portugal to Austria. This is a place which is not so much a melting pot as a catalyst. Here nobody is excluded from providing an input. It is to such a place that I welcome you today, to think about what thinking is all about.

I welcome you also to a university which celebrated its 400th birthday last year, and we're still celebrating it this year, because there is usually a lot of obscurity about the conditions of birth of universities, including ours. This confusion is related to the fact that ours is a case of the kind of institution which Clark Kerr, I think, coined a name for the multiversity rather than the university. In other words, our University is a conglomeration of a large number of related entities. There aren't just the faculties which give the usual professional or other education, but several other institutes as well. Some of them are run on a commercial basis; in others, the teaching is not necessarily at university level; there are extension courses, open teaching and so on. There is also a sports complex, a hospital being set up, residential and catering facilities, bookshops, printing press and publishing house. Such a university is a bit like a "bazaar" or, we Maltese would say, a "suq", in the Arab style. Here obviously all the different kinds of thinking that are necessary and to be used.

Perhaps for these or other reasons you will agree that it is not incidental that this conference is taking place in Malta and at this university, even if it is merely incidental that Professor de Bono and myself both began in the same year our academic education here, and that we both received our first degree in this room, in a private ceremony, in order to allow us to go to Oxford where we had both been elected Rhodes scholars.

At any rate, I hope that this setting is one which should be conducive to the sort of approach to thinking which is most comprehensive. It contrasts with the peripatetic context: walking in one direction and then walking back in the opposite direction, is quite expressive of the yes or no, either/or, two-valued only type of mental procedure. It was on the one hand, Aristotle's greatness to have promoted it, but, it has also proved to be a deleterious heritage in the hands of subsequent thinkers for many centuries. In our times, at last, there has been the development of pluri-valued logics. The rejection of the law of the excluded middle has given rise to the intuitionist and to the constructivist schools of logic. There have been great developments in the study of thinking in terms of probability and of possibility, and much else. I think this is the perspective in which we want to approach our subject.

We don't just want to have the abstract, purely logical approach, nor, on the other hand, just the kind of approach which loses sight of the universality of the thinking process, although it is always embedded in concrete conditions. Thus I have returned again, with my philosophical hat on, to my starting point, which I ask you to allow me to illustrate with a concluding example. Take the theorem of Pythagoras. If you look at it the way in which it is found in old geometry

schoolbooks, that is as a purely logical exercise, what you have is a paradoxical result. The construction of the parallel, without which the theorem could not have been proven, appears to be just a technical trick introduced on a hunch, without rational ground. If one looks, however, at the psychology which must have underlain the discovery, one realises that there is a more general principle underlying the theorem. This is that in order to be able to sum up the degrees of the angles, you have to move the angles to an adjacent position. That is a consideration which does not appear in the logical set-out of the theorem; it is a heuristic ("psychological") principle which can, in fact, be learnt and taught, although it hardly ever is, when mathematics are taught.

Given the large variety of different environments from where you're coming, the large variety of professional and occupational situations in which you operate, I expect that a holistic approach to thinking should prove congenial.