

BRISTOL EXPLORATORY

The Exploratory is now open to the public in part of a neo-classical building in Clifton. Of the various projects that have emerged in the UK, the Exploratory is the closest to the Exploratorium in both philosophy and style.

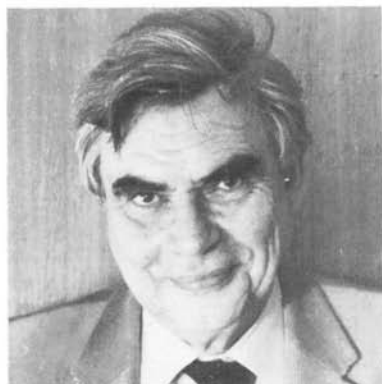
The Exploratory is the brainchild of Professor Richard Gregory, and his humour and insight are much in evidence. Where else would one find an elliptical snooker table and the perplexing question 'Why does a plane mirror appear to reverse left to right but not top to bottom?'.

There have been three project managers, each taking the project a stage further in its development with each injection of funds. Now that the Exploratory is open, the income from entrance charges sustains the exhibit team while the workshop develops exhibits for the next phase of expansion. Richard Gregory also has a vast network of associates who are drawn into the project from time to time. The Exploratory has organised maths weekends, a chemistry weekend and soon an engineering weekend where experts in the field discuss exhibits – 'plores' as Gregory terms them to distinguish them from passive museum-style exhibits – in an agreeable social atmosphere. These have resulted in a host of original ideas many of which are already on show.

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| Location: | Victoria Rooms, Clifton, Bristol Enquiries to Exploratory Workshop, 131 Duckmoor Road, Bristol BS3 2BH The Exploratory will be moving in 1988 to larger premises in Brunel Old Station, Temple Meads, Bristol |
| Date opened: | 4 February 1987 |
| Floor area: | 500sq m |
| Number of exhibits: | 80 plus (to be rotated as new ones are built) |
| Number of staff: | 7 permanent 6 part time, plus one ticket person paid on an hourly basis |
| Number of visitors: | approx 2000 per week |
| Opening times: | Wed-Sat 10-5, Sundays and Bank Holidays 11-5. Closed Christmas Day |
| Entrance fees: | £1.50 adults £1 children, OAPs, UB40s, students (with cards) School parties 80p per child |

ORIGINS OF THE BRISTOL EXPLORATORY

Richard L Gregory



Richard Gregory read Philosophy and Experimental Psychology at Cambridge, became a university lecturer running a research laboratory, and designed 'hands-on' practical classes for psychologists and philosophers. He helped start a new department at Edinburgh on artificial intelligence and robotics before starting and running the Brain and Perception Laboratory at Bristol. His theoretical work on perception and his practical experience has impressed him, over the years, with the importance of hands-on experience for seeing and understanding.



The Exploratory is housed in this neo-classical building in Clifton.

This is a personal account of how the Exploratory Hands-On Science Centre in Bristol came into being. No doubt others involved in its creation would give a somewhat different emphasis; but this is not written by, or intended to represent a committee but only a personal view. It will be presented in strictly chronological sequence (as checked by letters and diaries, one's memory is indeed fallible) as there may be some interest in the sequencies and timespans of this still unfinished saga.

As I see it, 'hands-on science' is to stimulate interest in science and technology by presenting phenomena and experiments to show how things work at first hand – and suggest interesting questions; perhaps to inspire discovery and invention.

Questions are important, for as useful as facts are, facts are fossil remains of sometimes ancient questions, and new questions can generate facts and understanding, and new possibilities for science to investigate and technology to master. Questions are probes and hooks for exploring. So they can extend our potentialities for work and recreation and, in so many ways, our lives. So, I see 'hands-on' as leading to 'brains-on'. Indeed, some questions of how brains function may be answered by hands-on experience in exploratory situations.

As this is a personal account I shall start with some autobiography. Having served in the Royal Air Force during the war, I received a most unusual posting while waiting to be 'demobbed'; I was asked to demonstrate the equipment and methods of communication and radar to the British public in the John Lewis bomb site (as it then was) in Oxford Street. So, with specially tailored uniforms and a new shirt every three days, I was one of a select band explaining these technicalities to, in all, some four million people. It was enormous fun.

Then I went up to Cambridge, reading Philosophy and Experimental Psychology under Prof Sir Frederick Bartlett, and stayed on to work on practical problems such as escaping from stricken submarines (following the 'Affray' disaster) and also to teach experimental psychology. I built up a practical class on visual perception – which is a 'natural' for question-asking demonstrations – for the psychologists. Also, for the philosophers, I designed and ran a Practical Class to present philosophical issues in experimental forms, for suggesting not only verbal but conceptual kinds of answers. For example, there were three lights: the first dim, the third bright, the middle being adjustable – to set to 'half way' between the brightnesses of the first and third lights.

There was considerable disagreement on this setting – but what is ‘half way’ between brightnesses? Surely this is not at all like half way along a ruler, or half way between London and Edinburgh, or between boring and interesting. This simple experiment led to discussions of scales of measurement, and whether subjective experience can be measured, or compared, with any physical facts or phenomena.

The point was to discuss such philosophical questions (especially of scientific method and of mind) in the context of actual situations. The simple experiments effectively inhibited the usual *verbal* response of philosophers, for example: ‘It depends what you *mean* by *half-way* between’. This can be important – but it is surely also important to ask how one might think about it. The hands-on approach forced us out of the slavery of traditional language and towards seeing the need for new concepts and, sometimes, suggesting new ways of thinking. This stops philosophy going round in circles. Indeed it is, ultimately, the hands-on experience of individual exploration and shared technology and experiment that makes language meaningful.

Thirty years ago philosophers would take the sentence, ‘There are mountains on the back of the Moon’ as an example of a *meaningless* statement – because there was no way of testing its truth or falsity. So it was neither true nor false, but (like all metaphysics) meaningless. But now, a mere thirty years later, we have explored the moon and seen that there are mountains on its, until now, hidden back half. So the hands-on of technology has extended what can meaningfully be said, or asked, in normal life, science and philosophy. It may well be that with advances in experimental possibilities, some age old imponderable questions of brain and mind will take on meaning and be answered. (This is discussed more fully in Gregory, 1981.)

The particular experience that set me thinking about how we come to see and understand through discovery by interaction, rather than by passive observation, was the case of S.B., which I studied with Jean Wallace in the early 1960s. S.B. (Sidney Bradford) had been blind from infancy (at ten months, or earlier) and received corneal grafts to his eyes at the age of fifty-two, when we studied his progress towards seeing. What surprised us, was the finding that slow, painful learning was needed before he could see many kinds of objects; nevertheless, some things he could see immediately. This was immensely surprising, until we found that what he could see were things that he knew well from his earlier touch experience. Thus we did not have to teach him to tell the time.

He could tell the time immediately, as he had a large pocket watch with hands that he could feel. His touch knowledge of reading time transferred, at once, to his new-found sight. And he could read capital, though not lower case letters – as when a boy at the blind school in Birmingham he had been taught to run a finger round upper case letters inscribed on wooden blocks, as this might be useful for making out brass plates and street signs. Lower case letters were not taught, and he was blind to them for a year or more after his eyes received light.

Our findings on S.B. have been confirmed on people born with the front of the eye useless, but replaced when adult with now-available acrylic lenses. There are also reported cases of children with normal eyes, who for one reason or another have restricted movement and lack effective vision for what they were not able to handle or discover. So there are neurological or psychological reasons for believing that interactive hands-on experience is needed for making sense of the signals from the senses. It is a very interesting psychological question: 'Does all abstract understanding depend on a basis of practical experience?'. And: 'Does richer practical experience form a better basis for developing the abstract understanding of science?'. It does seem to be true that the concepts of science have, all through its history, depended on the prevailing technology. The same might well be true for each of us and our children. This notion is the basic assumption of the Exploratory.

From this background of thinking about how we see things (and I ran the Special Senses Laboratory in the Department of Experimental Psychology at Cambridge; worked for the USAF on perceptual problems in astronauts for docking and moon landing and wrote several books on the subject) it is hardly surprising that the pioneer work of Frank Oppenheimer, the founder in 1949 of the San Francisco Exploratorium, made a strong impression. I got to know Frank Oppenheimer well, visiting the Exploratorium several times in its early years. And I made some small contributions for the perceptual exhibits of the Exploratorium. Undoubtedly our Exploratory – whose name reflects just this – owes its inspiration to Frank Oppenheimer. There is, however, an historical precedent: Francis Bacon's unfinished book *New Atlantis* (1627) which describes an imaginary country where there are caves and towers a mile high, full of demonstrations of these people's inventions and science. This seventeenth century book very precisely described what we are trying to do now.

The next step toward the Exploratory was setting up a

major exhibition at the Institute of Contemporary Arts in London, with its Director, Sir Roland Penrose and the distinguished art historian Sir Ernst Gombrich, the then Director of the Warburg Institute (who has a deep interest in and knowledge of perception, as his wonderful book *Art and Illusion*, (1960) shows). We worked together, with our designer Keith Albarn, on this exhibition for three years (1970-73) and we were helped by a key person in the founding of the Exploratorium: Sheila Grinell (later Executive Director of the Association of Science-Technology Centers) who was 'lent' to us by Frank Oppenheimer for six months. Sheila had set up the training of the Exploratorium Explainers and in many ways made major contributions to the Exploratorium as well as our London exhibition which was in part 'hands-on'. This is preserved, though necessarily compressed and pressed, in the book edited by Ernst Gombrich and myself, *Illusion in Nature and Art*, (Gregory and Gombrich, 1973).

The next clear step in our saga was being asked by Roger Miles, the Head of the Special Services of the London Natural



The Illusion wall was painted on a sheet of steel by a local artist. Visitors can experiment with the different illusions by moving figures painted on magnetic material.

History Museum, to help to design a small gallery on perception, to be part of his ambitious pioneering exhibition, Human Biology, which has proved to be remarkably successful. I took the liberty of criticising the perception gallery (although I was partly responsible for its design!) in an editorial of my journal (*Perception* vol.7, 1-2, 1978). Seeing this criticism, Roger Miles immediately invited me to re-design the gallery, which was rebuilt. His generous reaction (and the faults, as I saw them, were mainly generated by the cumbersome design processes of a large institution) was highly impressive. Bringing all this together, we decided to try to start a Hands-On science centre – along the lines of the San Francisco Exploratorium.

Getting advice

Our first practical move towards founding the Exploratory was to visit Dr Neil Cossens, Director of the impressive Iron Bridge open air museum. (After a spell running the Greenwich Maritime Museum, Neil Cossens is now Director of the South Kensington Science Museum). So on 24 April 1981,



One of the early Exploratory exhibits was an air puck which floated without friction on a glass sheet and was reflected off movable magnetic walls.

Roger Miles, Priscilla Heard (a colleague in my University Laboratory, later to be an initial Trustee, and a major contributor to planning and exhibitions) and I, visited Neil Cossens at Iron Bridge to seek his advice – which formed the basis of the financial and administrative structure of the Exploratory. We learned that although a company registered as a charity is not allowed to make a profit, it can have subsidiary companies which may feed profits into the charity. We also learned, among much else, that when chatting up business people (who live in a different world as far as we were concerned) whisky, rather than sherry, works the magic of transmuting dreams into gold. We visited other museum directors, who were generally helpful, and we learned a lot by these visits noticing, it should be said, an almost complete lack of hands-on demonstrations, apart from the notable exception of the Children's Gallery of the London Science Museum, which was an acknowledged inspiration to Frank Oppenheimer. It seemed particularly odd that we could not find one model showing how a car engine works in the National Motor Museum.

Writing to Frank Oppenheimer on 2 June 1981:

I have been mulling over the idea of trying to get something started in this country along the lines of your Exploratorium. I am thinking of calling it the 'Hypothesorium Science Centre'. It would probably be either in London or Bristol. The choice here is difficult: London is incredibly expensive and there are an awful lot of other attractions. On the other hand it is, of course, the centre of things. On balance I am inclined to favour Bristol, especially as we have a very interesting dock area with a lot of old industrial buildings coming up for grabs. It is only 1½ hours by train from London and 2 hours by car.

What I would like to do is to have various levels of explanation; from more or less just playing around and 'experiencing', to a look at the logic and assumptions of key experiments in the history of science. I would like to build up a reference library where people could actually get xeroxes of, for example, Einstein's 1905 paper. Philosophically, I take the view that there are always assumptions behind experiments and observations, so I reject Operationalism. So I do not go along with (Sir Karl) Popper but rather with (Thomas) Kuhn. This suggests to me that it would be a good thing to bring out the assumptions, at least for representative examples.

To my mind Popper throws out the observer, as he

throws out subjective probability and also belief, but to my mind damns it by *reductio ad absurdum* in the limit.

I am happy to say, we soon dropped the name, 'Hypothesorium'! On June 9 1981 Frank Oppenheimer replied:

It was fine to hear from you. I very much look forward to your visit to California in August.

I do most emphatically agree with you that there invariably are assumptions behind experiments. A fine example is provided by the work of Rutherford who, on the surface appears to be so highly and purely experimental. If one reads his papers it is clear, however, that each of his experiments was undertaken as the result of much thought and conviction. There are, it is true, sightseeing, exploratory kinds of experiments, but even these are guided by the conviction or intuition that the new territory encompasses something of particular interest or value.

All of us, Sally (Duensing, now the Assistant Director of the Exploratorium), Bob and I and others most fervently hope that you will find time to visit us this summer.

Frank Oppenheimer was the guiding light which will always direct and illuminate hands-on science.

Our next step was to approach the Nuffield Foundation (a distinguished private Foundation who have given me generous support on various ventures over the years) for support to find out whether a hands-on centre could be got off the ground. Their response was immediately to set up a meeting (11 June 1981) with the Director, Assistant Director and others of the Nuffield staff, to discuss how it might be done. The Foundation awarded us a grant of £4000 to allow us to test the feasibility, this money being initially used for travelling for discussions with knowledgeable people (including necessary entertainment, in which Neil Cossens' advice of whisky as the essential alembic was accepted, in appropriate moderation, to serve the interests of Exploratory thinking).

Canvassing local interest, we held a preliminary meeting on 8 March 1982 and a detailed planning meeting on 18 May 1982 from which we set up a Trustee Committee to plan and run the Exploratory.

Reporting to Frank Oppenheimer on 15 March 1982, I wrote:

Daughter of Exploratorium is gestating. She may even get born. Enclosed is the write-up for the Nuffield Foundation who gave us a grant of a few thousand pounds for a Feasibility Study. Enclosed also are the notes on the First Planning Meeting which was held at my house on 1st March. This really went very well. It started with a description of the Exploratorium and your basic philosophy from which this scheme of course starts. We are thinking of calling it (not to be copycats!) The EXPLORATORY. This is, after all, the same form as 'laboratory' and 'observatory'. And why shouldn't it be a noun!

I wonder whether the filmed interview (for Nova) that we did got anywhere? That was fun. I would like to keep sending you bits and pieces as this thing – hopefully – develops.

MARTIN HASWELL



A 'pilot' explains the action of the spinning wheel at one of the Exploratory's exhibitions at London Zoo. Twist the wheel and the swivel chair rotates as if by magic.



MARTIN HASWELL

Things are not always what they seem. Squares on a checkered board appear wedge shaped. Funnels on tubes make sounds appear to come from the wrong direction.

The trustees and staff

The Trustee Committee included local people with interest in developments in the City; such as Stella Clarke, JP, an ex-Governor of the BBC; Michael Morgan, a historian and Chairman of the local conservation committee. There were several experts in the museum world, especially Roger Miles; in education and science; architecture (George Ferguson and Stephen Macfarlane who have devoted a great deal of valuable time and given valuable advice); and the law, (Craig Begg, who keeps us on the rails). Stephen Macfarlane and Craig Begg are now Advisors. Throughout, the Trustees have put in a remarkable amount of sustained work, through various difficulties and set-backs ever since. The Exploratory soon became registered as a Company with Charitable Status. Since that time several eminent people have become Trustees and we are extremely grateful for their support.

We were set to build a permanent exhibition. But the feasibility of this depended on an answer to the original question set up in terms of our Nuffield Grant: 'Is the project feasible?'. Our answer was – 'The only way to find out, is to go ahead and try'. Evidently this proposition was accepted, for the Foundation most generously awarded us £30,000 to employ staff, set up a workshop and generally make it go. We appointed a Project Manager who had just retired from a London Museum; but unfortunately this appointment did not work out and sadly a lot of time was lost. On 1 July 1984 we appointed Stephen Pizzey as Project Manager to set up a workshop (actually an ex-printing works in Duckmoor Road, Ashton Gate, which is still the centre of operations) and generally to get the show on the road; and Kate Tiffin from the BBC to organise the office fund-raising. Steve Pizzey came with a background of several years of useful experience from the Science Museum and as second-in-command of setting up the National Museum of Photography, Film and Television in Bradford.



The Exploratory has had a workshop from the outset to develop its own exhibits and act as a focus for the project. The workshop contains an office and visitor centre where school groups tried out the early prototypes.

The first showing

I contacted David Sainsbury, (who had been a student of mine, many years before at Cambridge) and he kindly put us in touch with one of the Sainsbury Family Trusts which awarded us £20,000. This made it possible to consider setting up a public exhibition – which was obviously an important step. We decided to try to mount an exhibition for the Annual Meeting of the British Association for the Advancement of Science which was to be held that year at the University of East Anglia. We had already given lectures to the BAAS on the Exploratory notion (and I had been President of Section 'J' (Psychology) in 1976) so we felt that this would be an excellent test of the idea and of our capabilities. But there was only about two months to go, so it was a tricky decision whether to go all out building an effective hands-on exhibition or to play safe with posters and promises. The decision was made, as I remember it, essentially by me and probably without the full support of our committee; for to have a chance to succeed not a day must be lost. It required maximum expenditure of effort and all the Sainsbury money.

The snag was that the Exploratory workshop was not effectively available, as the floor was being repaired and it had only a few hand tools. So most of the work was done in the corridor and in several of the research rooms of my laboratory, Brain and Perception, in the University. It might be of interest to note the exhibits for this exhibition – actually we call them 'plores', as 'exhibit' is too passive a word – were all, except some kindly lent by the Department of Physics of the University, designed and built by five of us in six weeks: Steve Pizzey, Chris Benn (an astronomer who made a major contribution), Francis Evans (for a few days), Priscilla Heard and myself. The captions were greatly enhanced by the simple, lively drawings of Avril Jones. Through this period we worked absolutely flat out, sixteen or more hours a day, for six weeks. But it was thoroughly enjoyable and I must say I now see this as our Finest Hour. The exhibition itself was designed and mainly set up by Steve Pizzey and it has to be said, it was a success. All kinds of people clearly enjoyed it – from children to Nobel Prize winning scientists. This was a terrific boost for us. In fact, in some ways I prefer this first try-out to our later exhibitions – though they were more professional and certainly benefitted from the skills of our creative technicians – as it had a clear simple scientific content with specific themes, which are remarkably easy to lose as one thinks of more and more possible improvements.

The Exploratory's exhibition at the British Association for Young Scientists day at London Zoo. The Chladni plate (right) reveals vibration patterns by sand collecting where there is no movement. The brass plate is set vibrating by a bow.

Making nylon (below) demonstrated by researchers from Imperial College, London.



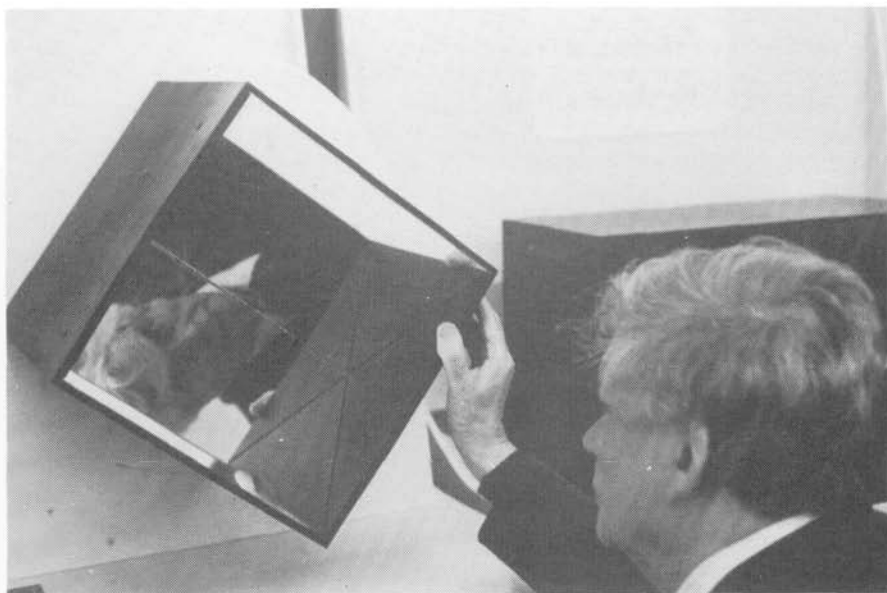
Something of the aims and background were set out in an article in *New Scientist* (1983). This starts:

'Science and Technology are exciting, but only a few individuals have a clue how things work, and fewer still are drawn to understanding the basis of physics or psychology. It is sad that the educational system does not generate excitement and understanding; the science museums, wonderful though they can be, are passive and often fail to convey the excitement of science'.

It was, indeed, wonderful to see and share the sheer excitement of the children (of all ages) in this first Exploratory exhibition. This BAAS exhibition and a follow-up in Bristol in January 1985 led to major funding by the Nuffield Foundation: £120,000 in May 1985 followed by £130,000 in October 1985. The Assistant Director of the Nuffield Foundation, Dr Anthony Tomei, served for a long time as a Trustee, coming down to Bristol from London for each meeting helping us to get to this point. This major funding made it possible to



Richard Gregory demonstrates his elliptical snooker table. A ball at one focus cued in any direction at the cushion always strikes the ball at the other focus. Well, almost always.



*Why does a mirror appear to reverse left to right but not top to bottom?
Can this inverting mirror (top) provide a clue?
Exploring more about the nature of optics with a concave mirror from a
searchlight (above).*

employ imaginative and skilled workshop staff and develop an effective office, largely to find and fund a suitable building. This has, in fact, proved to be the main stumbling block and nightmare. Actually this has been worse than a nightmare, for it has gone on day after day for years. With Bristol's harbour becoming a social amenity and with any number of warehouses and other unused buildings, some in romantic locations on the water, we were – and still are – surprised beyond belief at the difficulty of finding a home and how long the search would take. An essential difficulty was that going for several possibilities made us seem lacking in purpose; but going for one, then another, and another and another in sequence ate up time, with a great bite for each failed chance. We found and lost a huge tobacco warehouse; a beautiful site by the water; another warehouse with an ideal location; two unromantic but practical stores in a city street – and more.



A wastebin acts as a loudspeaker cone in this 'plore'. Tin cans, lids and boxes can all be tried by the visitor. The tin can is labelled 'Canned Music', of course.

The building problem has been a headache, while designing and making the plores and developing the philosophy of the Exploratory has been immense fun. The difference may be that buildings require far more money than plores do. In universities, projects we do at least start with a building!

The Sainsbury Trust set up a fund for helping to start other hands-on science centres in the country; Steve Pizzey left us to run this activity. His place was taken by an expert in puzzles, James Dalgety, who has made a fine contribution, especially running the workshop and organising plore building at a high standard.

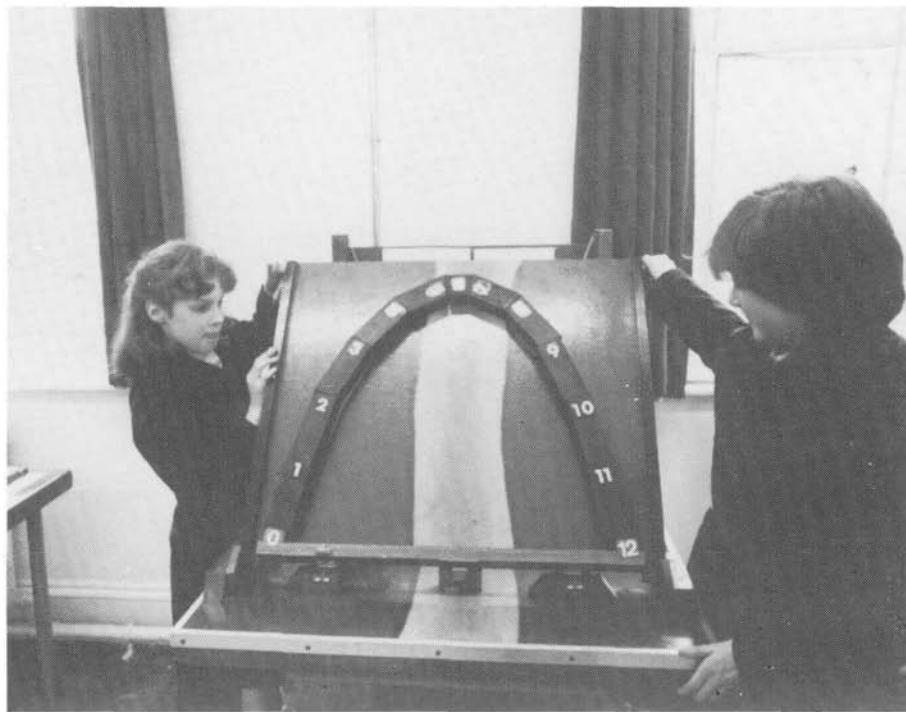
The management committee

With the now major funding, and so increased administrative responsibilities, a Management Committee was set up on 11 February 1985 under the strong Chairmanship of Mrs Stella Clarke to look after the running and the financial control. The Hon. Treasurer is John Hollingdale, a Partner of

Staff called 'pilots' are on hand to guide visitors on their voyage of scientific exploration. Here, a pilot keeps an eye on a visitor trying out the conservation of momentum plore.



Deloitte, Haskins and Sells, who generously financed our last exhibition. So we now have two planning and administrative committees. They include highly distinguished people: the Trustees being graced by Sir George Porter, the President of the Royal Society; Mr Marmaduke Hussey, the Chairman of the BBC; Mr John Prescott-Thomas, the Regional Head of the BBC; Dr David Davies, Director of the North Devon Trust; Dr Roger Miles, Head of Special Services in the Natural History Museum; Professor Geoff Eglinton FRS; and Professor David Dineley, Pro-Vice-Chancellor of the University. We are extraordinarily fortunate to have the backing of such distinguished and wise people. The managers include princes of the business world: Mr Cullum McAlpine and Mr Anthony Weldon. Mr Paul Hember, highly experienced in the recreation industry, is an Advisor to the managers. There is also a distinguished Scientific Committee. This will come into its own when we are open and running, as then we will learn



Moment of truth for these two girls – will the individual blocks making up the arch stay in place once the supporting backboard is removed.

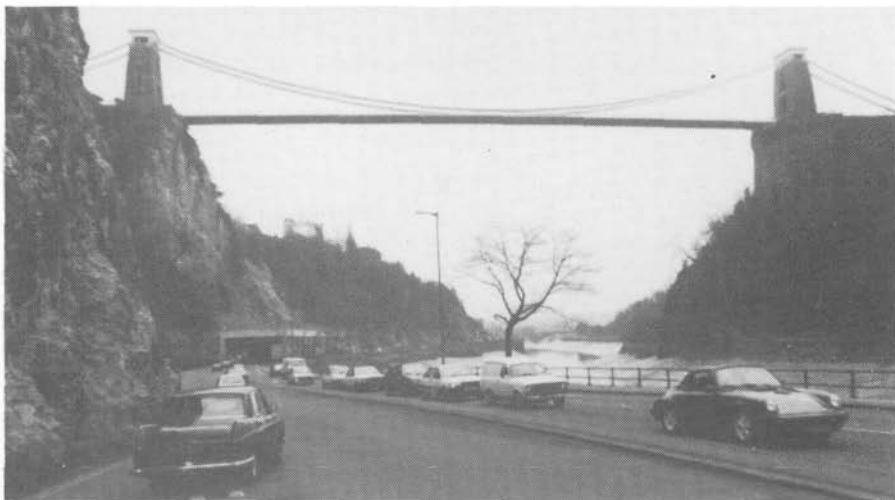
from the public what works and what doesn't and what is interesting or boring; the Exploratory will be a wonderful research resource.

The plan

We aim to be thought-making, with quiet areas or rooms for thinking and trying things out without disturbance. It will require a lot of thought on our part to stimulate without trivialising, to reveal wonders of the universe and something of the complexities of technology without being intimidating. For it must be admitted – science is difficult. So it is one thing to present games and puzzles but quite another to show how science works, explain phenomena and hidden principles of the universe, and show how principles of science are combined by human intelligence and technology – while yet keeping the Exploratory as a place of fun and intriguing challenge. Yet this is what the Exploratory is attempting. Our Scientific Committee and our Advisors will be very important. Already we do have facilities for schools, run by Sonia Ashmore, and we will prepare written accounts at various 'depths'. And there will be a Science Shop for home projects. We have already organised two Scientific Weekends – one on mathematics, the other on chemistry – in which some thirty scientists came to Bristol and discussed how their subjects could be presented. For the chemists, Clifton College kindly lent their laboratory so we could try things out in practice. Such activities bring in the academic community, to make the project truly interactive. Something of the working philosophy and present piores are described in a short book, *Hands-On Science – An Introduction to the Bristol Exploratory* (1986).

It does seem surprising that now, after setting up and running some ten public exhibitions, including a recent highly successful exhibition for this year's Annual BAAS in Bristol, with warm encouragement from the public and television, radio and papers, we have only just opened to the public. But the Sainsbury family Trust has just awarded us funding which, together with the Nuffield support and grants from the Carnegie Trust and Fairburn Trust, is sufficient to open in an attractive neo-classical building owned by the University in Clifton: the Victoria Rooms. We have every reason to believe that this will go well. The plan is that it will lead to a more ambitious exhibition in the Brunel Old Station at Temple Meads.

Why has it taken so long to get running? Given the talents and hard work of our committees and staff, this is very odd



A suspension bridge at the Exploratory shows the principles behind Brunel's famous bridge over the Avon Gorge only a mile away.

and one has to admit worrying. The strange fact is that the least of our problems has been designing and building the piores for hands-on exploring; the worries and hold-ups have been trying to get a suitable building, which in a city the size of Bristol one might think would be easy. But, even apart from finance, there are problems of fitting in with the City planners' aims and taboos, space for parking and not upsetting the neighbours by attracting too many visitors. On the other hand, the Exploratory can be a vitalising force in the financial community as well as a social asset for every one with a sense of curiosity and wonder. We have all the ingredients – surely the cookie won't crumble now.

Of course it won't. We have managed (and this has not been easy and it has taken time) to build a working team with the wisest advice available, combining the aims and philosophy of education and science with the generally very different goals and working methods of commerce and industry. This has been, for all of us, an exploratory experience into how others think and see situations and problems, to combine our various skills and knowledge to create the Exploratory.

The Exploratory is now open to the public. It opened its doors on 4 February 1987 without fuss or fanfare, and in came the people to explore. It was a wonderful moment – hopefully the start of a long future.

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