

Thomas L. de Fayer
1919-1999

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Thomas L. de Fayer

**A Tribute by Some of his
Friends and Colleagues**

*With a selection of Tom's own writing
under the title:*

**“Toward a New Approach to the
Global Challenge”**

Foreword

This booklet celebrates a man whose last years were spent in research into mysteries – the mystery of religion, the mystery of science, and the relationship between them.

Tom de Fayer was deeply aware that men and women were losing their humanity and their spirituality in a frantic race for “progress”. Certainly, our religious inspiration has appreciably declined over the years. It was born of the great mysteries of Nature and the Universe. Because many of these mysteries have now been resolved by the exact sciences, people are led to believe that all mysteries will eventually submit to mathematical analysis and scientific resolution. The churches now try to explain away the mystery of religion in kindergarten terms instead of glorifying it. The beautiful language of prayer is reduced to banality in a vain attempt to explain the inexplicable.

But the mystery remains. In 1946 Canon Roger Lloyd of Winchester wrote a “History of the Church of England in the Twentieth Century”. This profound statement appears on the first page:

“It is the business of religion to conduct research into mystery: therefore the church must provide for this research, and find out how best to give expression to its results in terms of life. Thus the mystical quest is the purest of all religious activities, and the celebration of a sacrament is the most fundamental of all religious rites. The institution which provides for both forms of religious devotion, and within which both are chiefly conducted, does so as an expression in terms of the space-time world of the deep springs of its own being. The note of mystery is inescapable; and, to the chagrin of the historian, the essence of mystery is that it remains mysterious. Against the background and in the atmosphere of mystery the whole life and work of the Church takes place”.

It seems to me that Tom, a devout Catholic, would surely have been in sympathy with these words even though they were written by a Protestant clergyman. It was in this spirit that he brought the global problematique to the notice of the Church and the spirit of his Church to his studies of the global problematique.

Tom’s last project was, sadly, not completed but is reflected in these pages in extracts from his writings and recorded thoughts. In his typically animated style of self-expression he probed the depths of science and religion in an attempt to extend his understanding of the mysteries of the universe. At the same time he was always seeking convergence of the two, sometimes conflicting approaches of religion and science; of faith and observables.

Tom’s initial interest in the Club of Rome and the global “problematique” may have been as a scientist and environmentalist; but it was his concern for humanity that led him to bring these issues to the notice of his Church, to the further attention of his country and, in his hopes for his final project, to very broad public attention.

J.R.W.



Arranel Studios

Thomas L. de Fayer

Thomas L. de Fayer, M.A.(Cantab.)
Knight of St. Gregory the Great
1919-1999

Born and educated in Hungary, Tom de Fayer's university studies were interrupted by World War II. Emerging with degrees from both Budapest and Cambridge, where he studied under some of the famous economists of the time (Keynes, Pigou), he remained in England, joining Imperial Chemical Industries (ICI) and working for them in the UK and China, later becoming Secretary to this multinational corporation. He was also an advisor to the British government and the OECD and the first chairman of the European Chemical Market Research Group

Recruited by Canada to join the National Energy Board as chief economist, he worked at the Board for some years before moving to Environment Canada as senior policy advisor and serving a number of years as Chair of the OECD Group of Experts on the State of the Environment. While at Environment Canada he became interested in the emerging field of future studies and became a member and later Secretary of the Canadian Association for the Club of Rome (CACOR), overseeing the Canada 2000 project for the Association and the Government of Canada. In 1977 he participated as an adviser to Erwin Laszlo for the report to the Club of Rome, *Goals for Mankind*. For several years he was Editor of the CACOR Newsletter.

As a retired senior scientific public servant with many full years of experience in both domestic and international policy-making particularly related to the environment, he once again undertook a new challenge, becoming conversant with the contemporary scientific studies of the nature of reality and the origin of the universe. He was a Chevalier of Roman Catholic Church (the highest honour given to laymen by the Church).

Following the death of Tom de Fayer, CACOR chairman Bob Fletcher said: *"He was a true intellectual and delved into the fundamental causes of observed phenomena and encouraged others to do likewise. It was this depth of concern and thought that contributed so much to those of us who had the pleasure of knowing him....."*

Tom L. de Fayer, M.A. (Cantab), Knight of St. Gregory the Great, died in hospital in Ottawa, Friday, October 29, 1999.

To
Joyce de Fayer

Thomas L. de Fayer

A tribute by some of his friends and colleagues

Preface	5
Tom and CACOR: <i>by Rennie Whitehead</i>	7
Some Inspirational Recollections <i>by H.F. (Bob) Fletcher</i>	9
Tom and The Nature Of Work <i>by Mary Hegan</i>	13
Tom and an Episode at Environment Canada <i>by Catherine Starrs</i>	15
Tom de Fayer and his Final Project <i>by Gail Stewart</i>	17
Toward a New Approach to the Global Challenge <i>by Tom de Fayer</i>	19
• Excerpts from comments in the CACOR Newsletter 1991-97	21
• A New Perspective on the Global Problematique	23
• A Search for Reality	35
• Notes by a Wandering Dilettante (1999)	41
Contributors	47
Acknowledgements	48

Preface

Some of us who knew Tom and respected his dedicated work have put together this brief memoir in his honour. We were grateful recipients of findings from his wide reading and studies, and we relished his always enquiring mind and lively company. We seek to honour not only Tom's memory but also his work, through extracts from his own writings.

The possibility of making this tribute more than a simple eulogy resulted from an initiative taken by Tom during the last months of his life. From the fall of 1998 Tom hoped to share the findings from his wide-ranging readings and reflections following his retirement, particularly as they might bear upon the future of humankind. His desire was to address, in a popular format, the search for the fundamentals of human knowledge and belief. Through emphasizing their common roots in the unknown, he hoped, among other things, to bring science and religion into a less antagonistic and more constructive relationship with each other. He also hoped to stimulate interest in the search itself – interest in questioning the character of “knowing” and in maintaining due humility in the face of “the ‘oneness’ of our Universe”. Unfortunately, the objective of producing a product that might influence a wide range of readers and set the global problematique in new perspective had not been reached before Tom was hospitalized by a serious fall.

He had, however, committed some of his thoughts to writing, in an e-mail correspondence with me and in two essays prepared in the context of the project. Rather than let these thoughts of Tom's go unpublished, I consulted Dr. Rennie Whitehead, a founder and former chairman of CACOR, and it was at his suggestion, and with his guidance and active help, that this book has emerged.

The following pages contain some reminiscences of Tom by friends and colleagues. These are followed by some of Tom's own comments published in the CACOR Newsletter during the time he was Editor and by some of his writings toward what became his final project. Some information about the contributors is provided on the final page.

Those who knew Tom recognize the breadth and depth of his reflections. Those who did not have that privilege may similarly be stimulated by them. We are happy to include some of these reflections.

G.S.

Tom and CACOR

by Rennie Whitehead

I don't know exactly where and when I met Tom de Fayer. He was always there to exchange ideas and to stimulate enjoyable discussion. Even though his lateral thinking sometimes extended beyond one's peripheral vision, his wisdom and sincerity always came through.

It was in the early days of the development of The Club of Rome and The Canadian Association for the Club of Rome (CACOR) that I became aware of his interest in the global "problematique", a term introduced by Aurelio Peccei in his 1968 book "*The Chasm Ahead*". While others in CACOR were discussing organizational matters, Tom was in the background wrestling with the substance of the problems.

Tom first appeared in the records of CACOR on July 7, 1976 when I had the pleasure of chairing the Board meeting at which he was proposed for membership. His depth of knowledge and interest in global problems made him an obvious choice to take over as editor of the CACOR Newsletter. It was a chore that he accepted gracefully

For the next few years, Tom produced a series of CACOR newsletters with characteristic flair. He is quoted in the records having "*described how the newsletters could be a vehicle for provocative ideas, could explain Club of Rome concepts, etc.*", but they became more than that. The paucity of contributions from CACOR members never deterred him and the newsletters of that period became increasingly a reflection of Tom's own thinking on the problematique. They are held in the CACOR Archives at the Arboretum in the University of Guelph.

During these early years Tom had long discussions with Aurelio Peccei and Alex King, the founders of the Club of Rome. Through my long association with them, I learned that they greatly respected Tom for his forthrightness, integrity and wisdom. He was one of the few members they sought out when they attended CACOR Annual General Meetings in Ottawa.

Tom was on the Board of Directors of CACOR from 1979 until 1986. In 1981, he spearheaded a movement to produce a book based on a Report by Gerald O Barney entitled "Global 2000", which had been completed for the US State Department and already contained information about Canada. He convinced the CACOR Board that this was an appropriate project, then stick-handled it through his own Department until he had ministerial approval for funding to match the contributions of industry. The book, entitled "Global 2000: Implications for Canada" was released by the Minister at a press conference in which Tom participated (October

6, 1981). Tom organized a series of CACOR seminars based on the book which also provided the theme for the 1981 CACOR Annual Symposium. Needless to say, Tom organized that as well.

Tom's health began to deteriorate in the 1980s causing him to relinquish his editing of the Newsletter and his Board membership. In spite of his often precarious condition he would insist on making the super-human effort to participate in CACOR meetings whenever his physical state allowed. He made substantial contributions to the Proceedings even in his last years.

His ultimate resignation from CACOR was not due to health and was widely regretted. It was a measure of the strength of his faith that he resisted all attempts to have him withdraw it. He is well-remembered but sorely missed.

Tom de Fayer: Some Inspirational Recollections

by H.F. (Bob) Fletcher

When one encounters a true gentleman, it encourages one to listen to what he has to say. It was the early 70s that I encountered Tom in the halls of the Fontaine Building, occupied by Environment Canada. I must admit I had trouble at first weaving my way through his discourses; they were not in the usual language of the social scientist; nor in the language of the natural scientists who received Canadian degrees. I later came to the conclusion that Tom's Ph.D. meant what it was supposed to mean: Doctor of Philosophy. He knew his chemistry and was also very familiar with the context in which he practiced. It was in the philosophical arena that Tom's inquisitive scientific mind inspired so many that took the time to listen, including myself.

At one stage during his career with Environment Canada, he was in line for the Directorship of the Planning Branch. When the job was given to someone with no experience in environmental matters, Tom was disappointed, as were many of his colleagues. At that time in our history, it was fashionable – and may still be – to believe that an administrator need not have experience in the field he is administering. Fortunately, both Tom and the new Director were quite cognizant of the shortcomings of this trend and the latter was sufficiently aware and humble to embrace Tom and his experience. Tom, as usual, was gentleman enough to accept the situation and the two worked closely as a team; a “duumvirate” had fewer shortcomings!

During those years, discussions with Tom centered on environmental matters. He was never hesitant to question current and accepted trends. Would environmental impact assessment result in better environmental planning as it was then being designed? Would it address the real issues? Should there be a Department of Environment? Would it not be better to ensure that every department bore the responsibility for environmental matters in their own area of responsibility? These and other difficult questions were not the fodder for formal internal discussion, as Tom often found out, much to his chagrin. But he never quit asking; after all, his ethic was geared to the common good, not to a single organization. His loyalty to the organization was to question constructively; but all too few had time to listen.

Tom and I both were members of the Canadian Association for the Club of Rome (CACOR), and during the term that I was Chairman from 1997-99, Tom found himself in deep disagreement with the path being followed. This led to a year or more of discussion, lengthy internet

exchanges in which the pros and cons of the situation were discussed and often reviewed for clarification.

The presentation of a paper which he perceived as strongly condemning the Roman Catholic Church drew Tom's ire. Not that he was against people stating their views; rather, that he was concerned to find CACOR apparently sponsoring such a view. To him, this capped his ongoing concerns about changes taking place, which led to his resignation from the Club. His strong stance on this issue had much deeper meaning than was generally recognized. In his words:

"I am apprehensive lest some of the earned authority of the organization becomes eroded by less than professional integrity and purposefulness. I cannot subscribe to the use of CACOR as a voice or a vehicle for any religious, racial, political, ethnic, etc. purposes!"

It was anathematic to Tom for CACOR to be perceived as supporting the condemnation of any person or organization. To him, this was not the high road "to generating better public understanding of the complexities of issues and the requisite more disciplined thinking or even an efficient or businesslike system of questioning by those involved."

At one stage in our conversations, I suggested that one of his statements tended to be elitist, which drew the following and, I think relevant, comment:

".....it may be elitist, but, I would suggest that 90% of the global population just has no idea of what we might be talking about and, I would suggest that the chances of reaching some global understandings or communication, without a start by the Elite, would seem remote, to say the least of it! Do innovations always emerge from the midst of the total population of the world or do we make progress by means of at least some contribution by the pioneer, the well educated, the intellectual, the specialist, the prophet, namely, the Elite...?"

Tom fitted well into his definition of an elitist, but he was a humble one, as illustrated by the following excerpt from one of his communications:

"I believe that it is a fundamental prerequisite to progress that we recognize and accept, in the first place, our human frailty, limitations and indeed our ignorance. This might just help us to be open to ideas that do not fit our paradigms, to new visions, to new horizons and may indeed overcome our tendencies to be arrogant and resentful of others, who might not agree with us entirely."

Many of our discussions dwelt on the poor communication among the natural and social sciences, the humanities, including religions, and the arts. The real world was all of these to Tom and he often railed at the

small-mindedness of professional protectionism. In one message, I had noted the richness of Eastern philosophies in terms of the understanding they imparted about reality. His response:

“I am most appreciative of your references to Hindu, Taoist and Gaia philosophies since it is exactly these sorts of integrative perceptions that I seek (and advocate!). I believe that an examination of different perspectives, beliefs and philosophies can be far more productive than battles over who is right and who is not. Indeed, our arrogance in believing that we know anything, indeed our lack of an overall vision of reality – that includes economics, ecology, sociology, physics, and chemistry – all sciences as well as cosmology, philosophy, and possibly even theology....”

Tom was ahead of his time. His explorations led into virtually all fields of human endeavour, which gave him perspectives that unfortunately all too few share. At this time in our history, where perspective is so important, Tom made a lasting contribution to his friends and colleagues. To draw on and record these few tid-bits from our conversations has inspired; has raised doubts; has led to new questions. And of course, that is what Tom would have wished!

Tom and the Nature of Work

by Mary Hegan

Tom is one of the futurists in my life. He was a friend one could trust, a teacher of new ways of thinking, a thinker with visions for the future, a nurturer of the innovations of others, and a quiet activist with respect and clout.

I met Tom in the early 1980s. In addition to his deep concern for sustainability, our natural environment, public health, and the quality of the public service, he thought and talked about the “nature of work”. On this topic I learned a great deal from him. I try to apply his thoughts now and still find them relevant and meaningful.

His views on the future of work provided innovative input into conferences on “unemployment” and “volunteerism”, papers on the distribution of work and income, and self-help sessions for those reviewing their careers and focus in life.

A break-through for me on the topic of “the future of work” was when Tom and others shifted the central focus of one’s identity from jobs (paid work) to work (meaningful human activity). Work is continual as one contributes to society, personal well-being, and lifelong learning. This freeing concept of work allows one to value and integrate voluntarism, non-paid work, paid jobs, learning, caring for others, retirement, leisure activity etc., when approaching ourselves and others.

When Tom talked at meetings about his vision of the nature of work, he helped many in distress who were caught in the prevailing “employment” paradigm that one’s status in life is linked to paid work and earning money. What happened to stay-at-home Moms or Dads, the unknown artist, the full-time community volunteer, the person between jobs, the unpaid student, the mentors, and the activists? Tom would remind us all that when jobs are scarce there is much work in our community needing to be done.

I shall leave you to read the writings of Tom on the future of work. The challenge is with us now, in honouring Tom’s contributions by applying his innovative thoughts and his mentoring to the challenges and opportunities of today. I consider Tom a futurist because his ideas are still needed today and we are still discovering their meaning. Thank you Tom.

Tom and an Episode at Environment Canada

by Catherine Starrs

Tom and I were colleagues at Environment Canada for many years. Tom's presence was unmistakable. Animated, engaging, always freely expressing his views, always finding ways to support the economic arguments while at the same time saying "and if you do this, you will also benefit the environment" and always ready to apologize if he was wrong, Tom brought his vast knowledge, his sharp mind and his critical thinking to innumerable environmental policy issues, to their benefit. Having broader experience than many of his colleagues in the ways of the world (Tom had been secretary of a large multinational corporation before coming to Canada and joining the Canadian public service), he was an asset to his colleagues and the department.

I myself had reason to be grateful to him with respect to one particular project when I first met him. I was a consultant to the fledgling Advanced Concepts Centre of the Department in the early 1970's. My mandate, embodied in a recently signed contract, was to travel across Canada talking with as many persons from a developing list of Canadians as I could, asking for their views on three related questions:

- What do you understand to be going on in Canada today?
- What are your views of a most likely and a most desirable future?
- What are the issues that are going to determine whether or not we make it to a most desirable future?

Such a project was unusual. It was not the conventional probing of "public opinion" nor did it involve the usual "bringing in of experts" – it mandated in-depth conversations with a number of thoughtful people from a variety of backgrounds and professions.

On first seeing the contract and before I had set out on my travels, Tom had serious reservations, indeed referring to it as a "ridiculous contract, a waste of money, a mistake". "Nothing will come of it that we don't already know". A roly-poly gentleman with piercing eyes and ruddy cheeks whom I didn't then know, Tom's attitude presented a formidable challenge. Three weeks later, upon seeing a first written report of the early interviews and realizing that they did indeed contain some surprising results, he changed his mind. This in itself is not an unusual thing for someone to do. Tom though had no hesitation in making an explicit apology – indeed quite literally on bended knee! Formidable in argument yes, but also fair and honest, he was always the gentleman.

Tom de Fayer and his Final Project

by Gail Stewart

I was slow to appreciate the scope of Tom's purpose when, late in his life, he invited me to undertake a project with him. It took me some time to grasp what he wanted to do. He was much further up what he spoke of as "the ladder of personal progress and development" than was I. Although we were both trained as economists and shared a deep interest in public policy, and although over tea with Tom and his wife Joyce I had often heard about his latest readings in modern science, I had not envisaged the extent to which he was trying to synthesize his old and new learning. He was developing not so much a "worldview" as an "overview" of our understanding of our world. He had "kicked-away the ladder's support" and was seeing from "a new observation point, with far wider horizons".

The result though of my not initially appreciating the scope of his purpose was an e-mailed correspondence from him in response to a number of questions from me; a correspondence in which he revealed much of his culminating thought and beliefs. What he was doing, I now realize, was teaching by indirection, giving me a background for understanding his hopes for his project and what had led to them. He also set out a number of hypothetical questions and answers for the project ("A Search for Reality") and later, from hospital, recorded his thoughts for a paper ("Notes by a Wandering Dilettante").

Tom's purpose for the project was nothing less than fostering a new and widespread public understanding of the global problematique by placing it in fresh and broader context. It is therefore perhaps fortunate that it chanced, by the nature of our working relationship, that he put much in writing about the project's content and we didn't spend our time doing more than briefly speculating about possible vehicles and process. The consequence is that we today have greater access to his thoughts than might otherwise have been the case. I now hope that their publication will encourage development of further vehicles and process to carry them forward into the "great global conversation" about our human future.

The following pages form a record of some of Tom's thinking toward his last project. Untitled at his death, it seems appropriate to name it "Toward a New Approach to the Global Challenge", as indeed it is.

Toward a New Approach to the Global Challenge

by
Tom de Fayer

Perhaps we can develop a productive and rewarding discussion of various new facets of the fundamental aspects of the ‘problematique’. There may be no immediate solutions but only a mutually supportive effort to search, to seek and to expand. There certainly are no limits to learning.” Tom de Fayer, 1991.

Excerpts from comments in CACOR Newsletters 1991-97

by Tom de Fayer

From *“An example of apparent paradoxes in our perception of the Global Problematique:” Series 3, No. 1, April 1991*

“I decided to try to offer perhaps a somewhat different perspective to our discussions. I do this with some humility because I am by no means convinced that my contributions to the dialogue will readily resolve the issues either for the immediate future or, indeed, once for all. Anyway, I would hope that we might perhaps develop a different, but nevertheless constructive dialogue of practical value, rather than belabour the fact that many of us simply disagree and that we can therefore do no more than try to persuade or convert one another to the evident and unquestionable Truth of the matter.

As a start, perhaps we can agree to take a small step back, before we proceed to discuss the immediate issue”.

“.....The hallmark of a creative mind is the steadfast confidence that there exists a point of view from which the nonsense is not nonsense at all but obvious. The great innovators in art, in science, in religion etc, are those who have experienced the creative and exhilarating process involved in breaking the bonds of the known and who launch out into the unexplored territory that lies behind the barriers of the obvious. This type of person often has two main characteristics:

The first is the ability to see the world in relatively simple terms and not as it appears according to what we think we know about it.

The second is the inner strength and confidence to proclaim things in the secure knowledge that, contrary to appearances, it is the **world** that is confused and not **them**”.

“.....In the course of our daily activities we are seeking to anticipate the future and yet the best we seem to be able to do is to extrapolate past experience. Time and time again we are surprised to find that our prognostications turn out to be wrong. It is only in recent times that we are increasingly ready to admit that we cannot forecast the future”.

“Our challenge may be to break through our immediate limitations and to seek new dimensions to thinking, learning, reaching and understanding. Perhaps we should not be hostile and question or criticize the great innovators in art, science, religion etc. that were mentioned earlier but recognize, even if we cannot readily accept them, that they might

potentially contribute a great deal to our minds, our understandings and insights, our intellects and last, but not least, to our spirits.

Perhaps we can develop a productive and rewarding discussion of various new facets of the fundamental aspects of the *problematique*. There may be no immediate solutions, but only a mutually supportive effort to search, to seek and to expand. There certainly are no limits to learning”.

***From “Reflections on the Concept Paper, ‘The Whole Economy’”
Series I No. 22, June 1997.***

“When I started my career (with a multinational chemical company), I perceived everything simply as the ‘playground’ of chemicals: there was clearly nothing that existed without chemicals! As time passed, I moved to a job in the energy sector of our global activities and, lo and behold, discovered that there was simply nothing in this world that did not depend on energy. I then relocated to a position where I dealt with the issues concerning our environment and realized the “interconnectedness” of everything!..... It was a relatively small universe. In later years, the indistinguishable nature of Wave and Particle duality (Heisenberg), of Energy and Mass (Einstein), of Time and Space (Hawking), etc. impressed upon me the fact that reality was essentially some sort of an undetermined, “smeared out” complex, which we could not really understand. Indeed, another relatively small mental jump led me to perceive that our entire system of logic and rationality itself is based upon very questionable premises”.

“.....Having served as Chairman of the OECD Group of Experts on the State of the Environment over a number of years, I well remember the virtually interminable international battles over the meaning of “the environment”, the role of social indicators, etc., which all sought to address the non-monetized, non-measurable “bads and disservices”, which would not only eliminate their addition to the GDP (Gross Domestic Product), but would in fact be “deducted” from it when they represented (both socially and individually) “undesirable” factors. (I can recall, as a matter of fact, the suggestion of a new socio-economic measure, viz: the gruntle, which, in the overall accounting, would identify the pain of those who were ‘disgruntled’”).

A New Perspective on the Global Problematique

(E-mailed correspondence toward his last project)

by Tom de Fayer

November 2, 1998

I do not know who initiated the axiom that the longest journey begins but with the first step. (Was it Confucius? – it sounds like one of his wisdoms.) I would be inclined to start with an assembly perhaps of what we are talking about, viz. the oneness of our Universe (unfortunately the term singularity has already been pre-empted to refer to something else and can consequently not be used without a great deal of confusion and protestation from physicists).

I believe that we might possibly start with a presentation of the modern scientific perception, according to which the Universe just happens to exist in the form that it is and because it is so vast, we have fragmented it (evidently just for our own convenience) into the bits and pieces that we think that we can handle. Furthermore our senses themselves also dictate a fragmentation of the Universe around us. We see, hear, touch, taste, etc. all that surrounds us and in the process we overlook the fact that the totality of our Universe contains all these aspects of reality; it is we, who perceive and observe our total environment in terms of the fragments that we have created. The Universe is just one thing; it is again we who are bewildered because our Scientists have demonstrated that Time and Space are simply different aspects (observations) of the same thing. So are Matter and Energy, Wave and Particle. The four basic Forces comprising energy (viz. Gravity, Electromagnetism, the strong and the weak forces in Nature) are, in fact increasingly being recognized simply as different aspects of the same thing. There is a continuing scientific search to discover the **gut** issue, namely the secrets of our Universe, known as the quest for the Grand Unified Theory of Nature.

With such scientific evidence before us, it would probably not be entirely absurd to look for some unifying principle that would bring together the evidently scattered and dispersed fragments of our human observations concerning the physical, intellectual, psychological, etc. environment that we happen to identify as our *universe*.

Originally the Club of Rome invited and encouraged the participation of eminent thinkers in the exploration of wider issues, which extended beyond the first line reactions and indeed searched for answers in possibly counterintuitive secondary and tertiary feedback phenomena. Today, these philosophers are rejected simply as abstract thinkers who comprise a self-appointed coterie with the principle that we, the elite,

know, – you listen and learn! I happen to believe that there is not only room, but dire need for those, who had the ability and opportunity to advance their wisdom and knowledge, to continue to seek and search in close harmony with all concerned or involved, to build together further stepping stones for the expansion of learning and understanding.

Anyway, may I suggest perhaps that we review what has already been said on the issues raised, and that we then try to formulate some sort of a core message, which we can then possibly use to disseminate in different forms to different people and groups, as appropriate. If we want to be really ambitious, perhaps we can look towards some sort of a television program on the lines of the “Connections” series, which was apparently quite successful. Perhaps we should think of a project that does no more initially than sow some seeds. Once we see how and where it grows, where the fertile ground is, we can formulate the requisite follow-up efforts. I do not think that we should try to sow the seeds in one place only, but rather spread the perceptions and the ideas for work by others also involved, concerned and interested.

November 5, 1998

Bateson, on p.150 refers to the problem presented by the story about Cretans who always lie. This narrative, which is based upon a quote from St. Paul’s letter to Titus, has often been quoted as an example of the key paradox in our thinking, viz: the problem of self-reference in any pronouncement that we might make e.g. “This statement is false”. The evident confusion rests upon the fact that if it is true, then it is false, but if it is false, it is true! This is an evident case of Gödelism, which defies even the logic of the computer and generates the infinite continuation of a search for a nonexistent solution). The difficulty that I see in popularizing the excellent ideas that lurk behind the facade is that the language in these learned papers is so often laden with the inevitable jargon of the discipline. The use of sophisticated terms is a basic necessity in shorthand communications amongst the cognoscenti, but rather tends to put the public off, even before it has grasped the essence of the message. Anyway, I believe that we might do worse than try to translate, interpret and clarify some of the issues and concepts involved.

November 11, 1998

There is an old Hungarian saying (freely translated): Don’t run after a carriage that has no intention of giving you a ride. I have always readily followed this apparently sound admonishment.

At the age of 20 or so, I had hoped and indeed expected to change the entire World (I was unaware of the Universe at the time, otherwise I might have been somewhat more ambitious!), but gradually came to

realize that even the World (presumably our Globe) was too big a place to expect miracles; and I suppose, that is what I really expected!

Allow me to digress for just a moment, but I believe that what I want to say may cast some light upon my own perspectives and relevant background. I started Glider/Sailplane flying at about 15 and by the time I reached my 17th year, I gained the highest grade in flying (Silver C Certificate) and badge No.95, the 95th that was ever issued. Piloting a Sailplane gave me the first glimpse of the thrill of rising above the ground and to observe the ants running about on the ground far-far below, while I was battling the elements above and all alone.

I have said before that I am very conscious of the fact that, in essence, I know nothing even though I have (strong) views on everything! My efforts at learning and dialoguing are based on the realization that I and my ideas might possibly be more readily accepted, if I myself also show a readiness to learn from others, to look, to search, to explore and to lean on others for help and support. My position is that none of us really knows anything: We all have our beliefs and our preconceived ideas, but we just do not know! I personally happen to believe that the most that we can hope to do is to offer information, such evidence as we have and even some guidance as to how we have arrived at our personal conclusions and positions! This might possibly help others to better understand us and our biases and prejudices.

May I perhaps add just one more picture to the background of my own perspectives? I perceive our personal progress and development as a process of climbing up a ladder, *viz.* learning more and more about less and less. We generally rise by becoming experts, specialists in a particular field of learning, where we might reach the top of the ladder and, at this stage, a strange transformation can occasionally take place: like the mushroom cloud over a nuclear explosion, we suddenly find ourselves looking over the entire horizon. We have to kick-away the solid ladder that has enabled us to climb to our high lookout post and we have to abandon the comfort of our knowledge-support in favour of a new observation point, from which we can now survey a Universe with far wider horizons

I keep saying that we shall never be able to convert the world to a saner vision, let alone action. It might surprise you to know that although I am a practicing Roman Catholic, I have spent a while in the East and have, among other things, become greatly impressed by the philosophy and method of Zen Buddhism. I will not expand upon this religious sect, except draw your attention to the fact that a certain group within Buddhism has emphasized that the truths of religion do not come through

rational thought processes, the study of scripture or faith in a deity, but rather through a sudden flash of insight. Advocates of this belief system maintain that intuition or inspiration follows a period of meditation (Zen in Japanese!). Salvation, according to Zen Buddhists, is an individual matter and therefore cannot be helped by other persons or institutions: enlightenment comes through reflection, meditation or accident. In these circumstances reason is to be distrusted and Zen therefore utilizes riddles (koans) to lead candidates into enlightenment. Perhaps the best known koan is the one that suggests that you have heard the sound of the clapping of two hands, but what is the sound of one hand clapping? The question clearly does not make any sense, but represents a challenge to go beyond reason and to ponder, reflect, meditate. When the mind is then cleared of day-to-day matters and concerns, it should also be ready for being released from the confines of logic and reason. Zen followers consider this state of mind to provide the opportunity for a flash of enlightenment (satori). It is perhaps strange and unconventional to our western minds to expect that this sort of a process should be deployed to encourage the search of truth beyond reason, but is it perhaps an interesting alternative for us to contemplate, when we look for methods to induce thinking. How can we make ideas relevant to the thoughts of the individual in our Society?

November 16, 1998

Our exercise should demonstrate not only the interdependence and interconnectedness of our Universe, but its indivisibility. You refer to your path and its limitations; let me just assure you that I am very conscious of my own limitations. What I find deeply distressing, in a wider sphere, is not just the limitations of all humanity, but our apparent arrogance in believing that we really know anything. Yes, we have made tremendous strides in exploring the intricacies of the World, – our Science and Technology have certainly widened our horizons and our capacities to reach beyond our immediate perceptions, – and yet, we are all still very much groping in the dark. Another limitation that I recognize is our language itself, where words, terms and expressions often carry a great deal of baggage/garbage, which cannot be ignored. More about this later perhaps.

I sense that we are often still struggling with words, definitions, jargon, etc. I believe that I might have offered you sometime my definition of the environment (at least in the socio-economic milieu!), viz: The environment of each one us is all the rest of us. If we only understood this. By the way, I fully agree (how could I not?) that we do not have dominion over the World; we are stewards and are responsible. This is true despite the historical text generally provided by the Christian

Churches. Changes are slow in coming, but there is an increasing recognition in the Vatican, for example, that emphasis on stewardship is more appropriate than dominion. Yes, changes are coming, even if frustratingly slowly perhaps

We are still having difficulties with the concept of where do humans fit into the scheme of things. Are we unique or simply a small part of the Universe? Modern thinking increasingly tends toward the belief that we are part of the system and not even an essential part. Eventually we shall all disappear and there will be no one to shed a tear. Our Earth (and indeed our entire Solar System) is finite, not only in space, but clearly in time also (whatever these concepts represent). Eventually (20 Billion years ahead, if our system is symmetrical) we shall all be absorbed in a Black Hole. So why worry? The system that we inhabit is homeostatic and will deal with all eventualities as they emerge: our human concern is to make sure that we survive for as long as possible and that our extinction will proceed as painlessly as possible. In the end (the long run as Keynes pointed out) we shall all be dead! No, this does not mean a fatalistic acceptance of our ultimate fate, but a possibly more focused attention to who we are, what we are, where we really are and what we can accomplish. Major reformations (in the sense of re-forming things) seldom arise from cataclysmic changes, but more often from (painfully) slow progression. (I have deliberately avoided the word development or evolution, which might have conveyed a sense of occasional/periodic regression also).

Assuming that we can make some sense (and it is by no means certain that we can!) of the sum total of all of these fragments of perceptions and understandings then we must seek ways and means to render it all meaningful, not just to the educated minority (an infinitesimal fraction of all humanity), but to the starving millions in the East, in Africa, etc.

Anyway, there are a few thoughts, as you say, to meditate upon. Take it as no more than an attempt to start the ball rolling: maybe we need a different ball, maybe we have to kick it in a different direction? Whatever! Anyway, here it is.

November 28, 1998.

In putting my notes together, I have tried to assemble some of my own, often disjointed and fuzzy ideas and perceptions. The end result still seems to be more of a jumble than a clear picture. Maybe there is no clear picture. Maybe this is exactly what causes all our problems. The fact that we perceive (and interpret) things differently, underlies all our tensions, disputes and misunderstandings. This may be the price that we have to pay for our individualism: it would be a very dull world indeed if

we all agreed upon everything, if we knew everything and if there was simply absolute perfection all around. (This is one of the problems that I have with our concept of heaven and of eternal happiness. Feasting on rich food and gourmet wines, in my opinion, becomes somewhat boring after a few centuries!

All this imagery seems to be terribly human and merely reflects our lack of vision and imagination. We are back in our human boxes again and any attempts at breaking out of our limitations are clearly doomed. I was impressed by the (alleged) response of the resurrected and generally tight-lipped Lazarus to the question as to what it was like on the other side. (Those in the know suggest that he did not go beyond simply suggesting that it was all very different). Anyway, back to our substance.

I am not intent upon any conversion of others to my way of thinking: I regard that as an essentially futile exercise! We all start by assembling bits and pieces of knowledge and experience, which eventually form the basis of our personal understandings and interpretations of the World around us. As we gather more and more information and experience, we grow and develop. Much of the information that we assemble comprises beliefs and impressions with virtually no real understanding. (This is where I stumbled upon the remarkable convergence between our belief systems on the one hand and our alleged scientific knowledge structure on the other). The conclusion that I have reached is that we cannot hope or indeed expect to make converts, by force or even by means of persuasion: all that we can do is to present our perceptions, our understandings and our reasoning (what logic?) and then hope that we might just help (contribute to?) the individual and the personal efforts of others, either because of the success of our ratiocinations or indeed their failures). Where I am inclined to despair is that so often others do not share my reasonableness! This seems to be our shared curse that constantly haunts and frustrates us all. (Remember the cause of all wars and conflicts: Come on, be reasonable; do it my way!).

I am trying to address perhaps some of the basic dispositions in our human nature, viz: selfishness (Darwinian instincts?), arrogance (pretension of assumed or alleged knowledge?) and complacency (inclination towards comfortable self-protection and possibly inherent reluctance to take risks, to be conspicuous and to simply look at the ground immediately before us instead of searching the horizon – and possibly beyond – in order to gain some direction for our desired progress).

From early childhood we are conditioned to achieve: to crawl, to sit up, to stand up, to demonstrate that we have learned, that we know, that we have passed our examinations, that we have certificates and diplomas, etc., that we are competent, knowledgeable, authoritative, etc. It is practically unacceptable to admit that we do not know or worse still, that we might have been wrong. It is at a relatively late stage in life that we can concede that we know little, if anything and we can afford to be ignorant. This is where we begin to be perceived as wise! You will probably sense by now that I am far from ready to draft anything very concrete: I am still searching, reaching and testing my own perceptions, understandings and rationality. No, I am certainly not bound to things like values and I fully agree that the concept as well as the term itself is difficult and often troublesome. I used the expression merely as a rather loose and vague reference to something that remains ill-defined and possibly even abstract. Perhaps we can come back to examine values and their roles in our Societies at a later, (much later?) stage.

On re-reading some of my earlier pieces and, in the light of your observations, it struck me that I might have given the impression somehow that the Big Bang was the key to most of my arguments or assertions. Let me just reassure you that the Big Bang seemed to provide me with a useful entry into an analysis of our ignorance, our limited knowledge and understanding; it is by no means the only entry point or indeed the only proof of our confined vision.

I have already made reference to numerous anomalies (enigmas, mysteries, incomprehensible scientific observations, puzzles, etc.) and our feeble explanations: e.g. Heisenberg's uncertainty principle, particle/wave duality, warped space/time, etc. It is against this background that I am still seeking some down-to-earth understanding of what Reality comprises, since I have serious doubts that we can help others to search (or see things) in a somewhat different way from what they appear. Highfalutin scientific, academic, learned explanations are of little value to the person in the street, who is preoccupied with life's big and little, day-to-day troubles; these people need here and now, relevant things that help them to cope with their problems. Never mind those clever clogs (Scientists, Philosophers, the Religious, etc.), who spend their time contemplating their navels in their distant and detached environments and where they mull over their abstract theories as to how to *save* the World. I believe that it is the ordinary people that we have to attract to the process of thinking, of searching and to the joys of achievement and discovery.

Yes, again I emphasize the need for *relevance*, just to get away from things like the Big Bang. I was fascinated to learn more about

holography, for example (I am sure that you have come across the remarkable phenomenon, which takes place when you look at a holographic photograph plate – yes, we used to put negatives on glass plates. If, for example, you have a picture of a face on an ordinary photographic plate and you drop it, it will shatter and you will find the right eye on one piece of the glass, another on another piece, etc. On the other hand, if you break a holographic plate, each fragment will have a reflection of the entire original picture. It is unbelievable and yet absolutely true). My perception of the Universe suddenly changed; I was baffled, but realized that everything contained everything else and that our normal perception was once again proved to be wrong! Maybe we really live in a holographic world and we have to try and bring this perspective home to everybody.

Presumably you are also familiar with the many worlds interpretation of our reality, where everything exists as a potential. The potential is real, but as soon as one potential becomes reality, all the other potentials collapse (go out of existence). Who can be sure that all the other potentials simply disappear? It is seriously contended (by eminent scientists) that, in actual fact, all the potentials materialize, but in distinct and separate Universes: hence the Many Universes interpretation and understanding of our World, as a chain of parallel realities. Is this yet another of the inconceivable phenomena that may become relevant to the masses as knowledge and learning progresses?

As you can see, I am still at the searching stage and far from ready to even contemplate drafting anything. I believe, however, that we can develop a conscious and deliberate effort to demonstrate how confined and limited we really are and then seek better education (and I do not mean: I know, you listen!), deeper understanding of the value of expanding our horizons (even reach towards the beyond from between the bars of our cages!) and thereby facilitate the social, economic and indeed total physical and intellectual (spiritual?) well-being of all humankind. Am I too ambitious or is it just a matter of the first step in a long journey: after all, it is suggested that the longest journey begins but with the first step. Is all this still relevant to what we set out to attempt or am I dreaming? Again, where do we go from here? Shall we explore all this further and if so, how?

January 31, 1999

I find the material that you sent very interesting indeed, particularly since it seems to demonstrate, – at least to me, – that our initial premise is somehow correct, viz: the Universe does comprise a seamless web and ultimately everything in it is inextricably linked to everything else. It

just does not seem to matter as to where you break into the system, you are inevitably doomed to try and understand the whole, a clearly utterly impossible task! We can, of course, continue to fragment the picture – simply for our own convenience – into manageable parts, but an assembly of these bits and pieces will hardly provide the overall likeness of what ultimate reality actually comprises. A great deal has been written about the nature of reality and there continues to be a wide recognition that none of us can define exactly what it is; there is still a lingering inclination (with Einstein himself!) that somehow, somewhere there must be something concrete and objective, that is called reality. Apparently this is not necessarily so: it may just be a probability, a system of Heisenberg matrices (that do not commute) or a truly multidimensional Universe.

If you pursue this line of enquiry, you arrive at a system described by means of the String Theory, which, according to its initiator (Nambu) has already some 26 dimensions to start with. Anyway, all this demonstrates perhaps my own frustrations; it has apparently been suggested that human frailty and misery (sin?) is all due to selfishness. (Even this seems to be questioned). My perception increasingly forces me to conclude that it is perhaps not just selfishness that causes most of our problems, but that human arrogance is perhaps an even more important element in our wretchedness. We falsely profess to know things, when, in fact, we are utterly ignorant; we believe that our daily little chores, within our tiny box, comprise reality and we manage our affairs accordingly. There is no real attempt to reach beyond; to break out of our box. (Remember the change in my perception from being in a box to simply being caged-in?).

My frustration stems from the fact that we seem to be discussing some of these macro-issues, the many-world concepts, multidimensionality, relativity and quantum mechanics, etc., etc. while others look upon us (perhaps kindly?) but more likely as academic nuts, abstract philosophers or just a bunch of crazy coots, who have nothing better to do than think, while everybody else has to toil and labour to eke out a humble living. Maybe they are right, but how do we communicate some of our lofty thoughts so as to make them relevant to them also? Is this not exactly what prophets, messiahs, philosophers and indeed all those, who try to simplify and popularize modern science, have tried to do? This is the point where I am inclined to despair because the task seems to be so immense and certainly my time, so limited. All that I can hope for is to sow some seeds here and there in the hope that some of it might just sprout and bring forth something worth-while. (I have had the satisfaction, from time to time, occasionally and far too infrequently,

where I thought that I could trace some comment or observation to some of my own earlier initiative, but, even here, it might just have been a mere coincidence. Inevitably perhaps, I would tend to recognize my own finger in the pie somewhere. I suppose this sort of thing does not really matter; what is of importance is that the thought or idea has somehow taken root and continues to provide a contribution to human development and progress).

Let us revert momentarily to the issue of evolution, where Darwinian selection is often identified as possibly one of the strongest factors in the unfolding of the human species. I remember coming across a remarkable line of study (some 60 years ago!), which I have never heard about since: According to this discipline we all inherit two sets of genes: one from the paternal side and the other from the maternal line. Only one of these sets of genes manifests itself: viz: brown eyes, when parents have different genes: say the mother has blue eyes and the father has brown eyes. The researchers (Szondi etc.) contended that the gene that determined the child's characteristic (viz: the dominant gene) gained realization or completion and was thereby satisfied, whereas the other gene (recessive gene), i.e. the one that did not achieve fulfilment, continued to remain active by means of selection of mate. (These findings were then deployed to search out the inner structure of individuals, by using series of scientifically screened photographs of psycho-pathological extremes: you were invited to select those that attracted you and those that you found repulsive. The selections were then analyzed and profiles defined, using the pictures essentially like magnets that were supposed to attract or repel the sets of recessive genes in your personal make-up). As I said, I never heard anything more about this research project, although it was well recognized and deployed at the time. Just another example of our search for the unknown).

The thing that really bothers me is that probably 96-97% of the Global population would not know what we are really talking about when we discuss things like Relativity, Quantum Mechanics, Heisenberg, Space-Time Interval, the Uncertainty Principle, the many worlds interpretation, non-computing matrices, etc., etc. (I do not think that we shall fall out over the actual percentages that I suggested above for public understanding: a couple of percentage points up or down would not affect the argument). The issue seems to be: how do we communicate these wider perspectives, which to my mind are not only relevant, but absolutely germane to day-to-day issues, concerns, principles and indeed all human activities and initiatives. I find our dialogue most rewarding, because I continue to learn, discover and appreciate things that I have not even been aware of before. How can we share our excitement with

others? No, I do not believe that we have a sufficiently good sense of where we are going, but perhaps we shall never really get to that point of accomplishment. My question would rather be: where do we start a process to involve/excite a wide array of people, who might just help in spreading the exhilaration of the search itself.

March 10, 1999

I am not sure that the above is enough to start the ball rolling, but perhaps it does provide some sort of a launching pad? (I believe that the last part of my screed flows directly into your subsequent questions, even if not responding to them separately or directly? (Perhaps, we might just reflect, at this stage, on the title that we tentatively suggested: What about something on the lines of “The Problem of our Ignorance in the midst of Global Difficulties”. This is something of a mouthful and needs heavy massaging, but I feel somehow that we might just wish to zero in on such issues as ignorance, uncertainty, limitation to knowledge and wisdom, the role of individual responsibility, the need for learning, searching together, the mitigation of conflict and misunderstanding, and so on.

A Search for Reality

by Tom de Fayer

I just finished reading a book on reality isn't what it used to be. While it has the potential to undermine anyone's confidence in the sanity (or reality?) of the World, it does provide a wonderful base for reflecting upon our privilege to make choices and for feeling confident and even satisfied with having to live and deal with uncertainties and difficulties. It would seem to make our conventional image of heaven a terribly dull and uninteresting place! Yes, on the one hand, I am left with Archimedes to cry out in frustration: Give me where to stand and I will move the Earth, while, on the other hand, I am happy to find that I have room to grow and progress. I believe that it is this thought that drove me to say: I do not want (or expect) to convert the world, but merely hope that others will pay some respect to my perceptions, views and beliefs.

Since I am neither a scientist nor indeed an expert in philosophy (e.g. spiritual/religious beliefs, theology, etc.), I do not feel that I can do justice to the issues posed. I look upon myself essentially as an amateur explorer, a searcher who happens to enjoy sharing with others what I seem to be discovering along my own personal path. Having said this as an opening, I shall try to set out what I believe that I have (or indeed have not) found in relation to these very basic questions:

1. How do scientists see the Big Bang and what might lie behind it?

I suspect that Scientists view the Big Bang as the beginning of everything, since there was evidently no before. Time can only be measured by some (spatial or temporal) change. Indeed, I believe that some cynics have actually defined Time as just one damn thing after another! Apparently when the fundamental Force of Gravity (which, according to Scientists, seems to be a given characteristic of the original Universe, even though they dodge the question as to given by whom) packs everything so tightly within the initial singularity that nothing can budge (i.e. when even atomic space [sic] is squeezed-out of everything), there is simply nothing that can change or move in either time or in space. (In this context scientists immediately proceed to remind us, of course, that, space and time are merely the two facets of the same thing, viz. one that they actually identify as the Interval, which separates things and events). Distinct notions of time and space are therefore just constructs of our very limited human senses. Both perspectives have their beginning with the Big Bang. (You can start to measure things or events possibly nano-seconds after the explosion, but not before or even at the start). The paradox that I find in the scientific explanation is that there apparently exists a great deal of elementary Force or Energy, but

there is no scientific explanation of where this Force/Energy has come from. (The Force of Gravity is said to be rooted in the curvature of space, which seems to be an elementary condition of our Universe. I have not found any explanation of the origin of this initial distortion, except that it is due to the presence of mass of stars, planets, etc. The fact that I have not found a clearer explanation so far, certainly does not mean that there is none, but simply that I have not come across it).

The second thing that puzzles me is the question posed by the Second Law of Thermodynamics, according to which, Energy is apparently perpetual: we can degrade it, i.e. from a higher level or quality to a lower grade, but we cannot destroy it. It can be dissipated to a state of absolute chaos, but it cannot be annihilated. (I am really beginning to get out of my depth now and I must speculate: if there was no space or time before the Big Bang, then presumably there could be no distortion of space and if there was no distortion, where did gravity come from? Scientists deal with things that they can observe, test and then prove. They might possibly propose some hypotheses, but only if there is enough initial evidence that supports their thinking: where there is no clue, they tiptoe away just like the rest of us. Having dismissed the before or the elsewhere, they start with the Big Bang!). Anyway, let us not get overly bogged down with details, at least at this stage.

2. What lies behind the Big Bang from the perspective of other beliefs?

While Scientists generally abstain therefore from speculating about beyond, (except perhaps for such pioneers as Stephen Hawking, who talks about the absolute elsewhere, or indeed others e.g. Teilhard de Chardin, who look towards things like the ultimate Omega Point), religious beliefs usually postulate the existence of a permanent, eternal being, the source of everything else, viz. the uncreated creator of everything else.

I, personally, do not find any grounds for the apparently vehement disagreement between Scientists and the Religious (Spiritual?). In my view they all simply postulate, identify (name?) or believe in different precepts, but somehow get-back to something that preexisted the observable starting point. (Incidentally this ostensibly superficial difference seems to boil down essentially to my fundamental theme). Science focuses primarily upon our physical, material and mental world, whereas the Spiritual (Religious?) tries to grasp for the possibility of some dimension beyond our immediate world of (demonstrably?) fallible and strictly bounded (constrained?) perceptions. We are painfully aware, of course, of the limits that our observations impose upon us and we are

clearly baffled when apparently enigmatic phenomena interfere with our logic and common sense.

Modern Physics (Quantum Mechanics) has utterly destroyed our confidence in what we accepted earlier as reality, rationality, sequentiality, etc. We try to explain apparent puzzles by means of mental images or pictures, whereas normal sanity has to be left behind when we try to explore the true intricacies of our enigmatic Universe; i.e. does it really exist or is it simply a matter of our individual observations or perceptions? (The argument still remains unresolved; one of the founders of quantum mechanics, the Danish physicist, Niels Bohr, denied the notion of an independent reality, i.e. the existence of a variety of objective elements in the World, whereas Einstein questioned Bohr's proposition, when allegedly asking his colleague Abraham Pais: "does the Moon exist only when you look at it?" "Is there a sound, when a tree falls in the wilderness and there is no-one to hear it" is, of course, another oft-quoted conundrum).

We apparently observe the Universe around us, but, just by looking at it, we also affect it; we cannot observe without interfering. We then proceed to describe our observations in terms that we hope (expect?) are readily understood. We try to make sense of our observations and yet, we increasingly discover that more and more of our accepted interpretations, explanations and contentions are outside of our conventional understandings, our common sense. (For example, when we observe a swarm of glow-worms in a bush at dusk, we note and accept the unexpected flicker of a momentarily emerging light as a result of a firefly's random path and its light emission; there is an invisible agent (the glow-worm) and a physical movement, which generates the phenomenon. We are utterly at a loss, however, to explain the disappearance of a subatomic particle at location A, simply to emerge at location B. This is, of course, a standard observation in quantum physics). (Our vocabulary carries a great deal of baggage, which can distort the substance of what we are really talking about: we have to divest ourselves of (leave behind?) all our preconceived perceptions and understandings and concentrate upon catching the essence of what we are really trying to communicate).

It seems to me that neither the scientist, nor the spiritual (religion) has really anything concrete to offer in our search of the true nature of what we term "reality". They all provide the understandings that they have developed and which they hope may eventually be proven to be correct, but meanwhile they both simply appeal to all of us to believe (have *faith*) in their propositions, findings and deliberations, (i.e. either in their

scientific evidence or their spiritual wisdom or revelation). Take your pick!

3. How are these similar and what might be the implications?

For all intents and purposes, it might be fair to conclude perhaps, that there is insufficient hard or indeed indisputable definiteness on either side of the discussion. There seems to be no singularly persuasive argument to support the belief system of either side, but this is perhaps the price that we have to pay for the privilege of our free will that we apparently all cherish. There is, of course, also a great deal of unresolved discussion among scientists today as to whether or not we really possess an untrammelled free will or whether we are somehow strictly preconditioned by our genes, our environment, culture or constructivism and generally by our demonstrably fallible and strictly limited senses. In any case, the followers of the many worlds interpretation of the universe, would simply argue that our specific choices and decisions apply only to the universe that we happen to inhabit, while all other choices and decisions play-out (materialize, become realized?) in other parallel Worlds. We are again no further: our scientists are still not helping us a great deal, while most of our religious leaders want us to believe in free will and consequent sense of responsibility! They at least admonish us to reflect before we leap. The choice is again ours: follow the scientist or the spiritual guide!

4. How does our everyday outlook differ from the new findings of science?

Our problems are, of course, further complicated by the fact that in philosophy we now find that we apparently construct our own realities. Indeed, we would seem to be predestined to find what we are looking for! This incidentally happens to be also in full conformity with the findings of modern science, which would seem to have further confirmed that the laws of nature comprise an unbroken continuum with no real cut between conventional macro and more modern sub-atomic physics (Quantum Mechanics). We were baffled perhaps by the discoveries of such revolutionary concepts as Relativity (Einstein), the Uncertainty Principle (Heisenberg), the matter-wave equations (de Broglie and Schrödinger), etc. and we somehow labour under the apparent misapprehension that these things (viz: peculiarities, newly observed phenomena, strange principles, etc.) were perhaps relevant and meaningful only to some grandiloquent scientists (living, so to say, in their own ivory towers or simply in another world), but hardly to us as individuals, working hard at coping with the problems and difficulties of day-to-day living.

It seems to be becoming increasingly evident however, that the findings of modern science do not provide simply a general background to our daily living, but an essentially core issue for our practical actions and decisions. We have certainly not understood these developments and are clearly not used to them. There seems to be a very limited, slow and gradual increase in the appreciation of the fundamental impact of our new scientific discoveries upon our daily lives, i.e. not just the comforts, convenience and luxury offered by modern technology, but also their influences upon our entire global philosophies, our socio-economic systems, structures and operations.

The world will clearly never be the same again, once we perceive the realities (peculiarities?) that apparently surround us. (Perhaps we should not wish it to be). The new learning process seems to be inordinately sluggish and still heavily confined to a virtually insignificant proportion of our global population. There are serious doubts as to whether we shall see a fast enough progress in the broadening of minds, in a better appreciation of our new realities and of humanity itself (with its seemingly outdated value systems, etc.) to avoid another serious risk of some global catastrophe. Yes, we have had numerous warnings in the past that we shall have to mend our ways – that we shall have to change our values, our operations, our entire lifestyles, if we want to avoid global collapse and anarchy. We have nevertheless survived time and again and we have seemingly always managed to move ahead (muddle along!), despite all the dire warnings and prognostications. Are we simply to await some new salvation again? The question may rightfully arise: are we, as humans, really important enough to the Universe, to trust that our presence and survival will be safeguarded by the homeostatic forces of nature? Or shall we simply disappear (e.g. like the dinosaurs). Presumably we shall all cease to exist towards the end of our Solar System, if not before! Perhaps all that we can hope for is to try and render our disappearance as smooth and as painless as we can. This is probably the best that we can seek!

Science provides us with certain choices, while other thinkers (philosophers?) offer some additional options. They are both founded upon sets of beliefs and values; there are no fixed points or proofs that either can offer humanity any guaranteed survival on this Spaceship Earth, let alone happiness or peace. It is our own choice, however, whether we confine ourselves to the options offered by conventional knowledge, science and/or wisdom or whether we try to extend our options to dimensions, which can perhaps reach far beyond our immediate, four-dimensional *reality*. (Our mathematical scientists are working in multidimensional environments, while trying to roll them up

– for purposes of wider understanding, – into our conventional three dimensional spaces. The physicist Max Born, established that in the so-called Schrödinger wave equations you require three extra dimensions beyond the familiar three dimensional space for the path of each additional election that we may wish to describe). In the light of these newly discovered conditions, we should perhaps try to break-out from our limited four dimensional box (three spatial dimensions plus one of time) and view our confinements simply as being caged-in, rather than being boxed-in: from a cage, we can always reach out towards the beyond (e.g. the current absolute elsewhere of Hawking or the territories of our visionaries, prophets, and extraterritorials)

5. What does this tell us about our senses and ourselves?

Perhaps the only thing that emerges from our reflections is that the World is indeed a far stranger thing than we ever suspected. We have perhaps tended to attribute many of our problems to the essentially natural selfishness of human nature, i.e. greed and disposition towards the Darwinian quest for the survival of the fittest. There might well be a strong element of this basic instinct in society's fundamental misfortunes. Unfortunately there seems to be relatively little that we can do about this, except to continue our noble exhortations. A closer scrutiny of our ills may however suggest that, in addition to our virtually inevitable egoism, one of the major culprits may be our ignorance and indeed our insolence. Notwithstanding our clear evidence of rigid boundaries to our knowledge and wisdom, we continue to try and impose our beliefs, perceptions and understandings upon all others: "Be reasonable, do it my way" is an ancient recipe for dissention, conflict and indeed ultimately bloody wars. Some greater personal humility (in the midst of global ignorance, uncertainty and frequent mindlessness) and respect for all genuine attempts at gaining a better appreciation of the world around us could perhaps help advance greater success in common progress rather than just factional conflict and combat.

Notes by a Wandering Dilettante

by Tom de Fayer

(The notes were dictated by Tom from his hospital bed, July 1999)

Legend has it that Newton happened to sit under a tree when an apple fell and hit him over the head. This particular event started a line of thinking which shook the philosophy of the entire world. We are all sitting under our own trees and things just hit us all the time. It is a question as to whether we stop at that point or ask why, where, how and so on or just leave the event as an isolated incident of no significance. Where did the tree appear from? Where did we come from? How did it happen that we just happened to sit under the tree? These are questions which may or may not arise. They may often be utterly irrelevant to the casual observer but occasionally they might just provide the opportunity for some deeper thinking.

Why think? What good does it do? Haven't others been thinking for a long time? Don't they still continue to think? And yet there seems to be a hidden urge in some of us to gain more knowledge in the hope that more knowledge would make sense out of our immense universe, thinking that would lead to more knowledge, to more understanding and more comfortable existence. Most of us like certainty, reliability, and perfectibility; the movement through constant change, upheaval, uncertainty and risk fills us with discomfort, to say the least of it. So where do we start?

To most of us the most difficult thing is to start and yet it is claimed that the longest journey still starts with the first step. So here is my own personal first step in a bit of thinking. It is neither right nor wrong. It does not claim to have authority. Others have thought through similar thoughts and ideas and have not come to conclusions, but that should not deter me or anyone else from starting their own line of thinking.

My own thinking has led to the perception that our total universe that we happen to live in is a single vast unit of which we happen to be part. We are in it, we cannot escape from it, and we find it overwhelming. Looking at the cloudless sky we see stars beyond stars beyond stars and we are sure that there are billions and billions of stars around our universe. We are assured that these stars all began in a "Big Bang" which has spread them out to some twenty billion light years to date.

At the other end of the scale we find that we can break things into small parts, fragments of molecules, atoms, subatomic particles, until again the mind boggles at the virtual infinity of the small distances, nanodistances and smaller, that we can reach. We seem to be somewhere in the middle

of all of this. What does it matter whether we really understand how all this works, interacts, interdepends, seeing that we are such an utterly insignificant part of something so overwhelmingly vast and large? And here we come to our first problem. What is large? How did it grow so large? What is time? All these apparent perceptions are fed to us by our scientists who have studied the subjects and tell us that these are in fact the events of the far distant past. We believe them because we cannot think of any other explanation for many things. We believe them because they seem to tally with our own experience.

Time has been described as “just one damn thing after another” and we certainly cannot argue with the perception that unless some change takes place, movement in time or in space, there is no time and time is an abstraction which is perceived by us, which we hypothesize about, which makes sense to us. These interpretations are however simply our constructs which are based on our observations and there is not necessarily a direct correspondence between these and what we would like to think of as reality.

As a matter of fact, modern physics, particularly quantum mechanics and its subsequent exploration, clearly reveals that the more we search for human reason or rationality in our reality, the more we discover that common sense just does not operate any longer. In many cases we have to divest ourselves of common sense, of human observations, of our total system of rationality and logic if we are to understand or at least handle the intricacies of modern quantum mechanics. Heisenberg’s Uncertainty Principle itself presents an enigma. It unequivocally states that we cannot identify the position and the momentum of a particle at the same time. Our problem arises not just from the fact that we do not believe or know as to what a particle is or what a wave is, which at first glance would seem to be objective issues, but which cannot be separated. Taking light as the initial example it is apparent that we cannot define whether light consists of particles like little bullets or waves that move along. What we find depends entirely on the manmade instruments that we deploy. If we design our instruments to look for waves then we find waves. If we design them to look for particles, then we find particles. What does the universe consist of? Does it consist of particles or does it consist of waves? What does it matter?

There are different consequences of whether things comprise particles or waves. For example, in the case of particles there could never be any interference, whereas in the case of waves we find interference of waves which modify the ultimate shape and nature of what we are really looking at or are talking about. As an intriguing aside it is peculiar

perhaps that when we talk about waves we do not really know what it is that waves.

These are merely preliminary and very small samples of the confusion that results from our conventional thinking. If we knew where we are dealing with particles or with waves we could probably handle them, whatever that means. But when we don't even know that, then it is hard to know how to work with it. The enigma of particle/wave duality is further complicated by the fact that we cannot place these things. We cannot identify the position and the momentum of an object in normal experience. If we throw a ball we know that it has to leave our hands and then go through each point along the road until it reaches its final destination. In the case of quantum physics, the ball, so-called, leaves point A but does not need to pass through the intermediate points: it can emerge at any point B without any rhyme or reasons, another enigma in our conventional perspective or understanding. There are more and more and more as we go deeper into these scientific discoveries.

We can accept these peculiar phenomena or we can reject them. Many are no more than beliefs in what we have been told. I have personally developed the quip that I know what I believe simply because I know what I have adopted and accepted and believe in, but I do not believe what I know, because there are so many theories, conflicting ideas, and enigmas that there is no certain point to which I can fix my ideas.

So far I have only identified a few puzzles in an illustrative manner which provides problems for me in my logical, rational, sequential perception of the world.

Moving along this route or exploration I soon arrived at some literature which shows that actually everything that we observe comprises constructs. There is nothing solid, nothing true, nothing reliable, just a human hypothesis based upon observations which themselves are biased, faulty, imperfect. This is then a superficial first glance picture of our world of science.

Philosophies and religions on the other side provide us with a set of mysteries, beliefs which in many ways are little different from our beliefs in our scientific facts and knowledge. We can take our choice or we can try to examine whether there is any possibility of reconciliation between the sometimes divergent scientific or religious beliefs and principles. I subjectively believe in the singularity of our universe. By this I mean that our universe is One, the same Oneness that our physical assessments also adopt today. I see this universe as being single and yet within it everything is interdependent and interactive. "Everything affects everything else" is accepted today as a commonplace. In science today

we are still looking towards the effects of the Big Bang and are searching whether this expansion of the universe will continue indefinitely or whether there is a point of inversion where the universe begins to move towards a change that would bring about the collapse of it all into another singularity once again, brought about by gravity.

In many ways I perceive this expansion and collapse to be no different from our philosophical religious expansion and collapse or eventual gravitation to what is identified as the Omega point, the beginning and the end. Because of the unity and singularity of our universe, I believe that wherever we start our search, that is wherever we enter the exploration of this complex, does not really matter. The important matter is that we are searching and exploring and eventually we shall all be able to touch each other's hands, to touch each other's mind, because it is all One. This is true in both the physical and the philosophical, religious context.

All these perceptions are again purely personal and subjective understandings and I do not expect to obtain the answers promptly or readily, but I personally cannot resist the constant temptation, the urge, to explore, to inquire, to search and to find.....

Is it just blind nature that has brought about the system of survival of the fittest, the evolution that has produced mankind as its alleged apex?; or is there some mind, some spirit behind it all that has conceived it and sees it not in terms of our time and space dimension but in total, as it is? There are of course many who nowadays accept and believe in the multiple universe concept in which every possibility, every potential, plays itself out, but that on the actualization of any potential in our universe the others do not just collapse and disappear but evolve and actualize in other parallel universes with which we have no contact and from which we are completely cut off. The number of universes under such a scheme would be, again, infinite. I find this possibility or option feasible, even though I am inclined to try to understand our own immediate universe first before launching out into the realm of infinite universes all around us. It is an interesting thought but still well beyond our mental capacities today.

So where does all this leave me, a lone amateur in a vast universe that seems incomprehensible and which consists essentially of our own constructs and beliefs? Can we set some objectives for our search, for our explorations, that may make life more bearable, more comprehensible and somewhat more secure in the widest sense of this term?

Yes, philosophy and religion have provided some comfort to their followers, whereas science has perhaps, at least seemingly, undermined even our system of beliefs. For this reason alone, should we accept one and reject the other or should we seek some understanding of the possible interrelationship, interaction, between these two lines of thinking, so that we may all seek, explore, ways towards a convergence of our efforts and activities?

The foregoing mishmash of personal perceptions, beliefs and ideas should open up a vast array of topics that may be discussed, examined further, and perhaps used eventually as a basis for wider discussions and reflections. Should we call our exercise “the complexities of the universe in a nutshell”?

Our attempts at fathoming the mysteries of the universe may prove to be laughable. Is humanity merely floating along in its own box? These are its own constructs, and is it just possible that there is a great deal more to know, to learn, to explore outside our box and is it possible that our box is in fact not a box but simply a cage and that we can reach out between the bars of the cage and fix a hook at the end of a stick and reach beyond the bars, searching as to whether we can pull something in that is as yet unknown and then explore further? These may all be possibilities as long as we recognize our confinement and as long as we are willing and ready to reach beyond our own barriers. Do we have to lose our faith in religions or in science, or can we search for a convergence which after all must evolve if the universe is really one as we now increasingly believe? The Hungarian poet, Imre Madach, admonishes the world in his epic poem, “The Tragedy of Mankind”: “*Strive and have faith.*”

Contributors

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As an agricultural chemist, Bob Fletcher's career was with Environment Canada from its inception. In the course of this pioneering work he became the scientific authority for the Prince Edward Island Ark, Chairman of the interdepartmental energy conservation group and responsible for the CIDA/Environment project on eco-development. Bob Fletcher was Chairman of the Canadian Association for the Club of Rome (CACOR) from 1997 to 1999 and contributed substantially to its development. He retired to Victoria B.C. in 1998.

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With a degree in social work, Mary Hegan has spent the last 14 years with Health Canada in policy development and public involvement. Formerly Executive Director of the Canadian Association of Social Workers, her volunteer activities are extensive. They include: the future of work, the constitutional reviews, social and environmental planning, chairing the public meetings of the initial Ecological Development Initiative, serving on the Social Planning Council and the District Health Council and more recently serving as Vice-Chair of the Environmental Advisory Council of the City of Ottawa

Catherine Starrs

A native of Ottawa, Catherine Starrs graduated from Queen's University in Commerce and Finance. After a career in the Bank of Canada, D.H.Fullerton and Co., and the Economic Council she formed The Public Policy concern in partnership with Gail Stewart. She was the only social scientist on the staff of Environment Canada's Corporate Policy Group (later the Office of the Science Advisor) and was also a Member of the Science Advisory Board of the International Joint Commission. Author of a well-known report: "Conversations with Canadians" and of papers on environmental ethics, she retired in 1998.

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An economist by training, graduate of Queen's University in Kingston and the London School of Economics, Gail worked for several years in the United States. Returning to Canada she joined the staff of the Economic Council and was later a partner with Catherine Starrs in the Public Policy Concern. She has served as consultant to organizations in both the public and private sector in addition to convening or participating in economic, social and environmental planning and futures projects in all sectors.

Rennie Whitehead

A physics graduate of Manchester and Cambridge Universities, Dr. Whitehead was a pioneer of radar research during World War II. Following a career directing research laboratories in government, industry and university, he became Principal Science Advisor in the Privy Council Office for several years. He frequently represented Canada on the science committees of the Commonwealth, NATO and OECD and has advised the governments of Venezuela and Guyana on science policy. As an early member of the Club of Rome Dr. Whitehead was a founder of CACOR, Chairman for several years and for long periods editor of its publications. A Fellow of the Royal Society of Canada and of several other professional associations he is the author and joint author of several books and scientific papers.

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Gail Stewart