

## APPENDIX A: PRINCIPAL FINDINGS OF THE STUDY

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\* Entries are taken from the chapter in which they occur

*Italics* are paragraph headings as shown in the text, and as listed in Appendix B

Numbers in square brackets [ ] are page numbers in the text

Numbers in round brackets ( ) are references to other entries in this Appendix

### Chapter 1: Information and Reality

- 1.1 Everything known or thought about in the Universe is described by information. It is *one of nature's wonders* but also a force for good and evil [1]  
 [Information exists all around us, and in far distant spaces, in every nook and cranny but seemingly it occupies no space] (1.3/7;4.31;5.1;10.1;11.1/13/18;13.24;14.1;15.1/36)
- 1.2 Every single thing in the universe “holds” information. As it is said in the Scriptures, *in the beginning was the “Word”* [2]  
 [Data is not information. It is not information until it is “interpreted”] (3.13;15.5/7)
- 1.3 *Information is everywhere.* Within people, information is the same as Personal memory and a pre-requisite of consciousness. [2]  
 [Without our memory we would not be conscious] (1.1/7;6.1/28/29;8.1/2/24;10.1;14.1)
- 1.4 Information is a *Continuous spectrum*. At one end, it is firm and measurable; at the other, it is subjective and emotional [3]  
 [Information from a picture includes its frame, canvas, oils, and paints, as well as its Beauty and the feelings it generates within us] (3.20)
- 1.5 The Information spectrum may be typified at one end by the physical features of a person; and at the other, by his or her personal qualities [3]  
 [The total description of people ranges from their physical features to their Personal characters] (3.20)
- 1.6 *The key to oneself* is information in the mind. We can be aware of our Existence and of (anything else) only by using our mind. [4]  
 [We know only what our minds tell us] 4.31;5.11; 7.11;10.3-34;11.9;13.1/18)

- 1.7 Information in the mind is memory. It is our only proof of our existence [4]  
 [I have information; therefore I live. I live; therefore I have information]  
 (With apologies to Descartes' *Cogito Ergo Sum*) (1.1/3;10.34)
- 1.8 Each person's memory is a *Key to reality*, and *to other worlds*; but Everybody's mental [5]  
 world is different from every other  
 [Each human being lives in the different world of their mind. Reality is a different  
 Experience for all of us] (1.24/27;11.3;12.20)
- 1.9 There are *No limits to Information's power*. It is a trigger for action and a touch paper [6]  
 for emotion  
 [If treated carelessly, information can lead to emotional chaos] (1.34;15.19)
- 1.10 There is *No law of the conservation* of information. Unlike Energy and Matter, [7]  
 information may be *reproduced* without end  
 [When I give away some *thing*, I part with it. When I give away *information*,  
 I still have it.] (1.12;9.24)
- 1.11 Information is *Immovable, Indestructible and Infinite* [7]  
 [Once something is said, it cannot be unsaid. Theoretically, it exists forever]  
 (1.12/13;3.11;4.5)
- 1.12 When information is passed from one mind to another (or is passed on [7]  
electronically) it is not moved. It is copied.  
 [The original information stays at the point of sending] (1.10/11)
- 1.13 The human mind cannot be made to forget. [7]  
 [Additions and changes to memory are there for ever] (1.11;4.16;6.8;10.24;15.8)
- 1.14 A distinctive feature of information is its potentially *Incredible ease and speed of change* [8]  
 [Because of the speed of thought, but in order to protect our sanity, the mind  
 sometimes puts a curb on our thinking] (1.16;4.24;10.26;14.28)
- 1.15 A part of everybody's memory (and belief) is "inborn" and "unshakeable" Or, at [8]  
 least, it is very slow to change  
 [Unshakeable data is a check and safety valve on our actions; but, sometimes it  
 inhibits us. Sometimes it is dangerous] (3.11;4.16;7.10;8.11/17/20;11.11;14.15/24)
- 1.16 *New worlds for old*. If we don't like the world we are in, we can change it! [9]  
 [Prison bars are no barrier to the imagination. Prisoners can forget their chains]  
 (1.14)

- 1.17 Human memory;—an *Indefinable substance*, or *recourse to Fiction*? There are *strange similarities* between computers and human beings [9-10]  
 [It helps to understand memory if we think of it as a substance made up of tiny *particles of thought*, like the data bits of memory in a computer]  
 (1.35;6.3-6/11-13/16/26;7.8/9;9.19;10.5/8/14/19;11.25;12.2-24;15.15/32)
- 1.18 People have a *Faith in printed output*, and have been unable to resist Opening *Pandora's Box* (of Information Technology—IT) [11]  
 [Computer memory is more reliable than human memory. IT has extended human capability, but it also has many accompanying problems] (4.1/29;15.9)
- 1.19 Information has a duality of *Two basic components*; a *passive* component i.e data; and an *active* component that gives the data its meaning [12]  
 [In people, the two components are memory and mind. In computing, they are electronic data and programs] (1.20/21/29;4.5;8.20;9.4)
- 1.20 There is *Duality in most things*. For example, most pieces of information can be paired with an opposite or a complement. [13]  
 [As the Accountants say, there is no debit without a credit] (1.19; 4.5)
- 1.21 Opposites (or sometimes complements) in information are the equivalents of Positives and Negatives in electricity [13]  
 [Differences in information (like polarity in electricity) provide the “potential” that keeps us “alive”] (1.19;3.15;4.4;10.23)
- 1.22 *Volatility* is an intrinsic property of information. Information changes continuously, even by our looking at it [14]  
 [No one can jump into the same river twice—*Heraclitus*] (3.22;11.2)
- 1.23 *Intelligibility, Interpretation, and Different values of Information* are all determined by how our mind “sees” things. We see colours, for example, by producing them from different wavelengths of light [14-16]  
 [Bishop Berkeley, Irish philosopher, is famed for his infamous remark that, If you don't see something, it isn't really there. Bertrand Russell] (2.32 ; 6.18;8.6;13.1)
- 1.24 Ways of looking at information depend on people's *Different backgrounds* and on the different ways of saying things [16]  
 [The “top down” date of Year/month/day, in America, is in sharp contrast to the “bottom up” date of Day/month/year, in the UK. The sad day of 9/11, in New York in 2001, has engraved this way of saying the date for ever in our memory] (1.8;11.3)

- 1.25 **Abstraction** (making abstracts of our perceptions) is a major function of the mind. [17]  
 Abstracts are filled out again whenever we “remember”  
 [Up to 90% of what we “perceive” is already in our memory]  
 (7.27/28;8.7/8/24;9.7/18;10.5;13.3/4)
- 1.26 Making **Analogy and comparison**, concocting stories, surmising what happens next, [18]  
 and communicating, are the mind’s main functions  
 [Originally, the purpose of analogies was to tell us how to avoid danger and find food.  
 They are now a vital part of our reasoning] (2.4;3.14/17;7.29;8.5;9.7/16/18;10.29;12.18)
- 1.27 **WISIWIM** and **WIMIWis** (What I say is what I mean; and, What I mean is what I say) [18]  
 are not claims that we can reasonably sustain for long  
 [Every mind is different. When we say something, we cannot assume that all minds  
 think of exactly the same thing] (1.8/24;11.3)
- 1.28 **The mystery of the subconscious** is to be found in the many hidden and baffling things [19]  
 that it does for us  
 [The subconscious has far more influence over us than we realise]  
 (4.18-22;5.22;6.8/14/24/29; 7.1/2/5/6/11/29-33;8.10/13/15;9.11/29;10.24/29;11.4/28;  
 12.5;13.28;15.23/26/27)
- 1.29 The duality of information (1.20) has a close similarity with the **Duality of seed and** [19]  
**sustenance**, i.e. the growth from a seed into a plant or flower  
 [As if from a seed, information grows and delivers a message] (1.19; 6.11;7.27;8.22;11.2)
- 1.30 **To “inform” is to put into shape**. It is a way to re-form and to re-new. It could be that [21]  
 there is no end to anything; not even our lives  
 [Maggots have no idea that they will become chrysalides; and chrysalides do not know  
 that they are to become beautiful butterflies] (3.13;15.28)
- 1.31 All information, like matter, is made up **Of Nested Sets**. Sets of both may be nested [21]  
 within larger and larger sets of each  
 [All thoughts, experience, events, and things in the universe fall naturally into nested  
 sets of information and matter] (3.4-3.7/10/21;4.20;9.14)
- 1.32 By describing “sets” of information and by selecting them with ANDs, Ors, and [22]  
 NOTs, from larger sets, we can locate anything in the Universe  
 [By successively removing the outer sets, we can narrow down our searches to find  
 precisely what we want] (3.8/9;4.20)

- 1.33 **Levels of value and worth** of information fit into a hierarchy of Data, Information; Knowledge; Wisdom, and Truth [22]  
[The value of information can be visualised subjectively, in a rising scale, ranging from trivia to the highest level of truth] (1.34;9.14;11.32;14.21/22)
- 1.34 **Between the levels** of information's hierarchy of value and worth lies emotion [22]  
[Emotion sometimes overrides common-sense and reason; but it is still information and, as such, has to be considered] (1.9/33;14.22)
- 1.35 **Particles of matter, A fourth dimension, Invisible forces,** and findings **From Outer Space,** are lively topics producing endless information [23-25]  
[Nothing is out of bounds to human thought. Human thought is the most important quality that distinguishes us from all other matter] (1.17;15.28)
- 1.36 **Education and research** is the best way to ensure we will have valuable information in the future. Deciding how to do this is a priority for society [25]  
[The well being of democracy, and indeed the human race, depends on our using information wisely and well] (2.2/21;14.1/3/30)
- 1.37 **Learning from other species** is essential if we wish to understand more about the way they communicate and do things [26]  
[The annual migration of birds and fish is a feat of communication and navigation at which human beings can only sit and stare] (2.3;6.17;11.31;14.29)
- 1.38 **Philosophy** depends on its time in history. Scholars can only philosophise from the Age and circumstances of which they are a part [26]  
[We need an Information philosophy for the modern age. What is information; what is its domain, constraints, laws, and effect on people's lives] (14.21;15.9)
- 1.39 **The mind is Master** of all we discover. Human mind, brain, and body, are parts of the most wonderful machines in the Universe [27]  
[For each of us, Mind, brain, and body are the Universe] (2.32; 7.1)

## **Chapter 2: Information without Reality**

- 2.1 In the imaginary world of **Hypothesis** all things are possible, but we must always heed the **Need for caution.** [29]  
[In times of danger and emergency, it is essential to get back as quickly as possible to "**reality**"] (8.11;12.1)

- 2.2 Simulation is a way of tracing Cause and effect, *Solving problems*, and *Experimenting with change*, but physically without changing anything [30]  
[Simulation is an invaluable aid in scientific research, training, exploration in Space, help in business and finance, and just for fun] (1.36;2.3-12/14-16;4.21)
- 2.3 Using computers to find *what it would be like to be* something else (e.g.] a pig, dog, or elephant) can produce ideas but never fact [31]  
[Some things we may never know; we can only imagine] (1.37;2.2;12.23)
- 2.4 *Imagining the future* is a pastime in which we all indulge [32]  
[The future enters into us... long before it happens—von Rilke] (1.26;2.2;10.6)
- 2.5 *A very common practice*, in which we seek *Help from computers*, is to ask what would happen if we do this; or, had we had done that” [32-33]  
[Answers from computers are becoming more and more meaningful] (2.2; 13.23)
- 2.6 By using *Computer aided design* or CAD we can experiment, and “see” What the result of a proposed project will be; determine requirements and Suppliers; and calculate total costs, without ordering a single brick [33]  
[By using CAD, life-like photographs of proposed future environments can be produced at each stage of a project] (2.2)
- 2.7 By *Simulation in real time*, we mean making critical calculations in time to be of use while something is still happening [34]  
[Without computers, many projects would just not be possible] (2.2)
- 2.8 Simulation enables *Limits, stresses, and strains* of people to be calculated under different circumstances, without the need for physical tests [34]  
[In simulation, no one and no thing is ever hurt or damaged] (2.2)
- 2.9 The use of simulation is invaluable in *Simulated Space Travel*, in the Training of *Pilots and Aircrew*, and in adapting to new environments [34-35]  
[Although a tremendous amount is learned from simulation, all that users are basically doing is managing information] (2.2)
- 2.10 *Simulation in Medicine* enables medical staff to learn and practise by experimenting on imaginary patients [35]  
[If a patient “dies,” he or she may be revived by the press of a button] (2.2)
- 2.11 For entertainment purposes, simulation *In toys and games*, and maybe soon *at the Theatre*, has endless possibilities [36]  
[The action may be simulated but the excitement is “real”] (2.2)

- 2.12 “*Travelling in time*” (in the mind) is achievable by replaying old data, and even maybe altering the data, but the past cannot be changed [37]  
[Changing the past would make the present impossible. By agreeing to live in the present, we seal the past] (2.2/28;12.30)
- 2.13 By *Time within time*, we mean beginning new “periods of time,” one after the other; and returning recursively to our starting point whenever we want [38]  
[Sometimes, on waking up from dreams, we don’t know whether we are truly awake or whether there is one more waking yet to come] (6.24;9.13)
- 2.14 Virtual Reality (VR) has opened up a new *World of make-believe* [38]  
[In VR we can jump, say from the top of the Eiffel tower, without any fear of physical harm; except perhaps for a heart attack!] (2.2/15/16;4.29;13.8/23;15.28)
- 2.15 Virtual Reality is useful for *Testing people’s reactions* and assessing their response in tense situations [39]  
[We could (to be gruesome) discover people’s reactions, had they been present, at hangings in Tyburn or the horrible executions in the French Revolution] (2.2;2.14)
- 2.16 Virtual Reality is an exercise in *Self-deception* in which people live for a time in imaginary worlds [39]  
[People who take part in VR may often do it at risk to themselves] (2.2;2.14)
- 2.17 Randomness is *A Most reliable aid* in solving problems. It is also, strangely, both *Law-abiding and lawless* [40]  
[There is no way of predicting random events; and yet, statistically, randomness is one of the most reliable and law-abiding events in nature] (2.18-20;11.30)
- 2.18 Divided opinion occurs on almost every topical issue. This may be due in part to *The 50:50 problem* that we meet in randomness [41]  
[The duality of Opposites and Complements that we find in most things could be a reflection of the 50:50 phenomenon of randomness] (1.20/21;2.17;11.30;14.10)
- 2.19 Randomness is in one sense *A measure of ignorance* [42]  
[In an omniscient universe, every single thing would be known. There would be no such thing as a random event] (2.17)
- 2.20 Discovering hidden meaning in randomness is like finding *Beauty unfurled* [42]  
[To find meaning in randomness is to find order in the middle of chaos; However, all that we are dealing with, in the end, is information] (2.17)

- 2.21 Current research into Artificial Life is known as “ALife.” Its purpose is to find not only order within chaos, but ultimately the *Origins of life* [43]  
 [The work is concerned with the self replication, bifurcation, and reproduction, of information, and doing this millions and millions of times over]  
 [In the light of this; all that you, I, and everything else, need in order to exist is information;—Mark Ward] (1.36;5.15/20/21)
- 2.22 Universes of *Not only three dimensions and time* are hard to imagine. Flatland (as described by Edwin Abbott) had no dimension of height. [44]  
 [It is fascinating to wonder what it would be like to live in a world of four dimensions] (2.23/24/26/27;7.32;8.23;9.3/32;12.11;13.6;15.31/32)
- 2.23 *Walls between dimensions* prevent us from seeing anything beyond the three dimensions in which we live [44]  
 [Just as the height of things was invisible to people of Flatland, so presumably anything beyond our three dimensions would be invisible to us] (2.22)
- 2.24 Problems of an n-dimensional space are easier to solve from a space of n + 1 dimensions. It is like *Stepping outside the world* one is in, and looking at problems from a distant and much larger space [45]  
 [To be master in a 3-dimensional space, one needs to live in a fourth] (2.22)
- 2.25 *Mathematical symbols point the way* to solving a problem, but they are not always understood; nor do they always have counterparts in nature [46]  
 [In mathematics, we never know what we are talking about; nor if what we are talking about is true—Bertrand Russell] (3.9;15.30)
- 2.26 A fourth dimension could be part of *An information universe* and a mirror image of the physical universe that we live in [46]  
 [Possibly our mind sometimes works in both 3- and 4 dimensions] (2.22)
- 2.27 A fourth dimension might explain cases of *Discontinuity* and why things sometimes seem to vanish into space [47]  
 [In any discussions on “Information without Reality,” there is no limit to what can be imagined] (2.22)
- 2.28 Time is *Divine revelation*. It is only by means of time that there can ever be change; or, indeed, any life or growth at all [47]  
 [Only by using time can we (and all creatures) show how we are growing and what we are doing] (2.12/29/30;6.11;9.27;12.30;13.10)

- 2.29 By speeding up a film we are able to see time changing more quickly. By slowing down a film, we can look longer and deeper into what is there [48]  
[As a train slows down, the spaces between telegraph poles along the track open up, and we can clearly see what lies between them] (2.28)
- 2.30 An *Absence of Time* is inconceivable. People often say there is no time to do the things they want, so they panic and try to do things faster [48]  
[There is always time if we take our time] (2.28)
- 2.31 *Escape from imaginary worlds* and a return to “reality” is paramount if we wish to remain sane. Normally, people have no difficulty in doing this [49]  
[Where there is foul play or the use of drugs, however, a return to normal life is not always easy. Playing with the mind is a dangerous activity] (10.2/31;13.11/12)
- 2.32 Whether information is produced by people or a computer, its meanings are not always clear. *Interpretations still differ* but *The Mind is still Key* [49-50]  
[Ultimately, it is a human mind that decides what things mean]  
(1.23/39;6.1;7.31;12.15;13.4;15.2/6)

### Chapter 3: Keeping Information in Order

- 3.1 Managing the large amount of information that a person’s mind handles every day is *A truly formidable task* and *A most wonderful service* [51]  
[Millions of people take the miraculous gift of their mind for granted] (3.2;9.5)
- 3.2 The mind’s task is seldom a single operation. Information is absorbed, processed, recorded, and recalled, all at one time. *The variety is amazing.* [53]  
[A pianist playing for hours from memory, and reacting spontaneously to a live audience performs a tremendous feat of memory] (3.1)
- 3.3 *The value of being succinct*, and at other times being prolific “using *Not only words but pictures*” is widely acknowledged. [53-54]  
[Short crisp language is suitable for business. In literature, flowing, polished, and elegant, language is usually more appropriate] (4.25;7.22;15.3)
- 3.4 Every single thing in the universe may be looked on as a part of something bigger, rather like parts in the *Anatomy of a book* [54]  
[Mentally, everything in the universe may be viewed in the same way as a letter, word, sentence, paragraph, chapter, book, or volume and volumes of text] (1.31;3.5-7)

- 3.5 Any collection of data that is continually being searched requires that its *Data are undisturbed*, and that its structure is *Convenient* and *Changeless* [56-57]  
[A book is a permanent and unchangeable record that may be kept in good condition for a thousand years or more] (1.31;3.4)
- 3.6 The book is a good example of nested sets of information. Sets may range in size [57]  
*From the smallest to the largest*  
[In the concept of nested sets, every single thing and person in the universe has a unique place in Space and Time] (1.31/32;3.4)
- 3.7 There is no need to put labels or numbers on nested sets in order to distinguish them. [58]  
Like people, *Nested sets identify themselves*  
[God needs no arbitrary number in order to find us] (1.31;3.4)
- 3.8 The most appropriate language for use on sets of information is *A language of ANDs, ORs, and NOTs* [60]  
[Ands, Ors, and Nots, are at the basis of the “laws of thought” and *Boolean* algebra; named after George Boole, a famous 19th century mathematician] (1.32;3.9)
- 3.9 A good example of the use of an AND, OR, NOT, language may be seen in *The game of Twenty Questions* [61]  
[ANDs, ORs, and NOTs, in Information are the equivalents of mathematical symbols in mathematics] (1.32;2.25;3.8)
- 3.10 Set theory, *Tree systems*, *Storage by numbers*, and *Self responding data*, are ways of [62-63]  
organising information for quick access and retrieval  
[Each method has its own attractions; but the most comprehensive search of all, although slower, is from *Beginning to End*] (1.31;7.20;4.20)
- 3.11 In the mind, our *Original data is always there*. It is indestructible. Some of it is [64]  
*Unshakeable data*, and even resistant to question or challenge  
[Unshakeable data may be a support, but sometimes it is dogma and taboo; even when common sense and evidence prove otherwise] (1.11/15;4.5)
- 3.12 *Vagueness, Ambiguity, and “duff gen”* complicate the mind’s work, and are to be avoided [65]  
whenever possible  
[For the sake of its sanity, the mind usually tries to reject anything that is obviously absurd] (4.25;7.19/30;15.3/13)
- 3.13 Language is *a Bridge between data and user* of data. It is a vital link in converting data [65]  
into information  
[Language is a vehicle of thought. It shapes and defines our impressions, explanations, ideas, requests, and emotions] (1.2/30;3.18/19;6.22;7.21/3;8.10;9.4/16;10.9;13.9)

- 3.14 *Many varieties of language* range from verbal language, analogy, and, mathematics, to gestures, pictures, behaviour, and even cartoons [66]  
[The mind has to cope with all varieties of language] (1.26;3.15-17;6.16/17;7.25/26; 9.16;11.12;13.9;15.24)
- 3.15 The *Origin of language* is a negative, “No” or “Non-.” Interestingly, both Logic and Electronics also start from a negative value [66]  
[Positives are obtained from multiplying two, or any even number of, negatives] (1.21;3.14;4.4;10.23)
- 3.16 Languages may be based on *Alphabets and pictures* i.e. ideographs An alphabet of about 25 or 30 letters is easier to remember and use than a language with a large number of pictures or ideographs] (3.14) [67]
- 3.17 Languages of the mind are *Logical, pictorial, and emotive*. They include communication by comparison, analogy, and metaphor [67]  
[Meaning is often conveyed by analogy and reference to what has happened before] (1.26;3.14;7.25/6)
- 3.18 *Language skills are learned*, although we almost certainly begin life with an aptitude for language [68]  
[We learn to speak in just the same way as we learn to walk, run, swim, or ride a bicycle] (3.13)
- 3.19 Where there are *Weaknesses in natural language, Language adds to confusion* in our thinking [69]  
[The English and American peoples are sometimes said to be divided by a common language; a language in which words in one country sometimes mean different things in another] (3.13;11.12)
- 3.20 *Physical features* and *Biometrics* are used in many areas to identify us [70]  
[Body geometry, fingerprints, eyeballs and retina, and DNA molecules, etc. are unique to each of us. They are being used increasingly to identify us] (1.4/5;14.19)
- 3.21 Our personal memory holds the image we have of ourselves. The *Images are sets of information* (lesser features within larger features) [71]  
[Our image of self is a data set we choose ourselves. If it is exaggerated, or inaccurate it can lead to false pride, misbehaviour, and illness] (1.31;3.22-24)
- 3.22 All our *Images are continuously changing*, even by observing them We are not the person we thought we were yesterday, nor are other people the same as we thought they were] [72]  
(1.22;3.21;9.20;11.2/8;13.11)

- 3.23 In our minds, all our *Images are inter-related*. They cannot be changed without affecting other parts of our memory [72]  
[To move a stone, it was once said, was to move the Universe] (3.21;6.7/9;8.7)
- 3.24 *Moral and ethical values*, are sets of information that differ from person to person. [73]  
If false, or in error, they can lead to an "*Identity in crisis*"  
[Some people claim to have received messages from God. They often fail to see that the messages could equally well have come from the devil] (3.21;5.23;8.12;15.17)
- 3.25 Each of us usually feel and act as if we are at the *Centre of the Universe* [74]  
[In an infinite universe, there would be no such thing as its centre. If there was a centre then certainly we would all be there] (6.13)
- 3.26 It is important to recognise *Information's vital role* in society. Harmony and discord [74]  
between people often depends on information and language  
[Whenever there is misunderstanding between people, there is no doubt that information will somewhere have had a hand, both in creating and allaying it] (14.1-32)

#### Chapter 4: Information, People, and Computers

- 4.1 *The mind is a brilliant Information machine*; but, now, *Computers pose a challenge* [77-78]  
[The computer is seen in many areas as a rival competing with us] (1.18;4.2-31)
- 4.2 Computers are no longer isolated tools. *Communications widen the field* and have given [78]  
computers "wings."  
[There is now nowhere that computers cannot go, sending out, collecting, receiving, and working, on information] (4.1;5.13)
- 4.3 *Computers give us ideas about people*, and the way our mind works [79]  
[Ways in which information in one field is used invariably suggest ways in which it may be used in another] (4.1/4-28;7.2-4/13-20/30;8.8;10.24)
- 4.4 Both computers and human minds use *Electrical forces* to communicate [79]  
[Electrically, computers use wire and electronics; the mind uses nerve cells, fibres, and chemical compounds] (1.21;3.15;4.1/3/5;10.23;12.3/18;15.19)
- 4.5 *Electrically charged memory* and *Retentive recording* in computers have similarities with [80]  
human memory  
[Electricity is the active component of information in both computing and the mind. "Retentive recordings" may be almost indestructible] (1.11/19/20;3.11;4.1/3/4;12.2)

- 4.6 Our mind's functions, like a computer's, are *Special and General Purpose*. [81-82]  
*Neural Network Computers (NNC's)* use the mind as a model  
 [SP functions are single and automatic (instinctive); GP functions are multiple  
 (and rational). The memory of an NNC like ours is strengthened by use]  
 (4.1/3;7.15;8.4)
- 4.7 In computers, *Built in features and Macros* are pre-prepared strings of instructions that [82]  
 can be invoked by a single command many times over  
 [Human beings use instructions similar to macros in almost everything we do, from  
 breathing and blinking the eyelids, to driving a car] (4.1/3/19;7.18;10.25;15.12)
- 4.8 *Push button technology*, follows on from the use of Macros but, if used carelessly, [83]  
 Push button use may lead to irrecoverable error  
 [Pushing wrong buttons may have very serious consequences] (4.1/3;10.25;15.10)
- 4.9 Layered structures in computers are good for *Ease of change and repair*. *Push up and* [84-85]  
*Push down stacks* are good for queuing work  
 [Whether our minds use methods similar to those used in computing is interesting  
 speculation] (4.1/3;6.9;7.13/14/16/28/30;9.13/14)
- 4.10 Comparing computers with people is probably *More symbolic than real* [85]  
 [In the computer, there is nothing that can equate exactly to the human spirit,  
 consciousness, conscience, or emotion] (4.1/3/11/15/16;5.4/5/11/21-24;7.2/5;8.12;  
 15.17/19/22)
- 4.11 If we compare computer *Application programs* with work that goes on in our heads, [86]  
 we tend to think of hardware as "Brain" and software as "Mind"  
 [In contrast to the brain, the mind sometimes seems to be ethereal and metaphysical.  
 It seems closer to our emotions and, maybe, our soul] (4.1/3/10/14/23;6.2;7.3/4)
- 4.12 *A computer's heart is its Operating System*. It can be compared with the body's nervous [88]  
 system that takes over when things go wrong  
 [Like a human heart, an Operating system never stops] (4.1/3/13/23/26;7.11)
- 4.13 Sometimes people find that their *Head and Heart* are *in conflict*; so, sometimes, are an [88]  
 Application program and the Operating System  
 [One party wishes to do what the other does not] (4.1/3/12/14)
- 4.14 In human beings, *Brain & Mind have ultimate control*. In a computer, an Application [89]  
 program may sometimes be given total control  
 [In the ultimate, Brain & Mind are able to "commit suicide"; in certain military  
 operations, an Applications program may totally self destruct] (4.1/3/11/13/23)

- 4.15 The equivalent of the human hand in a computer are all its numerous ***Inputs and Outputs—a great variety;***—to say the least [89]  
 [Key boards, computer mouse, voice recognition, printers, plotters, scanners, digital cameras, and robotic limbs, are some of many computer input/output devices] (4.1/3/10;5.28)
- 4.16 Read Only memory (ROM) in computers, and certain “unshakeable” memory in people are among their ***Common characteristics*** [90]  
 [In both computers and people, there is certain memory that cannot be easily and permanently deleted or changed] (1/13/15;4.1/3/10;6.2;8.16;10.24)
- 4.17 Usually, Computing and TV information ***Changes are piecemeal;*** they are made, in parts, and at different times. So, it is with human memory [91]  
 [Human memory is a state of mind that is continuously being added to and changed. It is never totally replaced] (4.1/3;7.28)
- 4.18 ***Foreground and Background*** tasks in computing have similarities with what takes place in our Conscious and Subconscious minds [91]  
 [Foreground control in Computer and Mind have priority. When they pass work to the Background or Subconscious, they temporarily relinquish control] (1.28;4.1/3/22)
- 4.19 ***Idling time and inactivity,*** and use of ***Hidden data,*** are background activities in a computer similar to some activities of the subconscious [92]  
 [Idling time, hiding data, and using Macros, are not entirely typical of our subconscious. There is much else besides] (1.28;4.1/3/7;9.25;10.24)
- 4.20 ***Methods of access*** in computing range from using data sets, tree searches, sequential access, and indexed sequential, to ***Table look up, Indirect addressing, Concordances,*** and many other methods [93-95]  
 [Some computer methods may be similar to some used subconsciously by our minds] (1.28/31/32;3.10;4.1/3;10.27)
- 4.21 ***Feedback*** and ***Trial and Error methods*** (i.e. empirical as opposed to analytical ones) are often used by both people and computers [95-96]  
 [All living creatures use feedback methods, e.g. in response to changing bodily conditions of temperature, hunger, thirst, and tiredness etc.] (1.28;2.2;4.1/3)
- 4.22 ***Delegation in people*** and ***computers*** is common. Tasks are delegated to other parts of the “system” i.e. from Foreground to Background [96-97]  
 [In people, jobs are passed to the subconscious; in computers, jobs may be run as background programs] (1.28;4.1/3/18)

- 4.23 In people, *Emergencies* are dealt with by brain and/or central Nervous System. [97]  
In computers, control may be taken over by an Application program working in conjunction with the Operating System  
[In all cases, the aim is to minimise damage to the “system”] (4.1/3/11/12/14)
- 4.24 *System protection and integrity* are provided in both computers and people by a [98]  
redundancy of parts, and a variety of other safeguards  
[To ensure correct results, tasks may undertaken in different ways; and also cross checked at intervals] (1.14;4.1/3;7.17;8.17;9.15;10.26;11.15/18/26)
- 4.25 *Keeping things simple* and *tidy* leads to clarity in thought and style. [98-99]  
KISS (Keep It Simple Stupid) is a catchword to remind us to think clearly  
[Writing a short letter is sometimes harder than writing a long one]  
(3.3/12;4.1/3;15.3)
- 4.26 Like people, Operating systems can be good at developing *New skills and fixing* [99-100]  
*faults*, and looking continuously for *Self improvement*  
[It would be tempting to compare to what extent on-going changes in computers and people are handed on and become “innate”] (4.1/3/12/30)
- 4.27 *Merging of three technologies* (Computing, Communications, and TV) has brought us [100]  
into an age of “Mass communication ”  
[People’s minds are changing dramatically because of their use of Information Technology] (4.1/3;8.25;10.30;12.31;14.29)
- 4.28 In computer communications, Engineers use the *Letter “U” as a convenient model* for [101]  
writing, exchanging, and unravelling messages  
[A similar model in the mind could be a basis for telepathy] (4.1/3;12.6/24)
- 4.29 *Awesome developments* in Information Technology could rank with the opening of [102]  
Pandora’s box, or even the splitting of the atom  
[The way has now been opened for any electronic device to communicate with any other, anywhere in the world or universe] (1:18;2.14;4.1)
- 4.30 With so many developments in computers being handed down from system to [102-103]  
system, it is tempting to ask *Is technology innate?*  
[Computer and communication standards, and their accompanying languages, are already forms of innate knowledge] (4.1/26;5.19)
- 4.31 Information Technology reminds us unequivocally that *Everything is Information.* [104]  
Without information we would not exist  
[Information is so close to our existence we have to realise that, whenever information is being manipulated then so are we] (1.1/6;4.1;11.13)

**Chapter 5: Information and the Next of the Species**

- 5.1 Computers and people are information machines. Both have *Virtues and faults*, blessings and defects [105]  
[Both computers and people have a potential for good and evil] (1.1;11.1/18)
- 5.2 “*Who are we and where are we going?*,” are questions that we often ask ourselves. [106]  
A computer “race” would not be interested  
[In a computer dominated world, people would be of little or no importance]  
(5.9;11.4/29-31;15.18/33/35)
- 5.3 Charles Darwin’s “Origin of the Species” is a masterpiece on life and a guiding light for Evolutionists. It tells us that *Change is inevitable* [106]  
[Charles Darwin explained brilliantly how different species change over time, but he had little to say about, Information, Mind, and Memory] (11.31;14.29)
- 5.4 A computer has no biological link to the animate world. *Putting feeling into computers*, at least as we understand “*feeling*,” is impossible [107]  
[It would of course be absurd to suggest that metal and plastic could ever have feeling (4.10;5.24/29;7.2;9.6;15.22)
- 5.5 *Starting afresh without emotion* is where computers began. Possibly, *The genesis of feeling* will arise out of friction between competing systems [108]  
[Imbalance and unfairness in a computer’s software might one day even cause the molecules of a computer to bristle!] (4.10;10.20)
- 5.6 *Imagining life in inanimate things* is not unknown [109]  
[At the end of a hard day’s work, even a well used armchair may seem to have feelings for us] (12.25)
- 5.7 Both people and computers need constant *Sources of support*. *Computers depend on people* and people depend on computers [109-110]  
[People require sun, air, and food; computers require people to provide electricity and do repairs] (5.27;14.29)
- 5.8 *Vigilance and not complacency* is a requirement in all systems, but *Ways of doing things are changeable* [110-111]  
[Computers if ever “in authority” would do things very differently from the way we do] (5.31)

- 5.9 People and Computers if in charge would have very different answers to the question, *What does it mean to live?* [112]  
[Happiness, sadness, love, and care, are alien qualities to a computer; building a massive memory, cool logic, and speed, would be among its delights] (5.2)
- 5.10 *Expressions of the species* are most evident in the will to survive and to reproduce in their own image [112]  
[In human beings there is an instinct to impress others, as well as to preserve one's beliefs and way of life] (13.13;14.7;15.16)
- 5.11 *The human spirit* goes beyond biology and understanding. It is a hidden, indomitable, moral strength that often shows itself best in adversity [113]  
[A "computer spirit" comparable to the human spirit, whether self generated by computer or programmed, would be a hollow one] (1.6;4.10;10.33)
- 5.12 *The gift of choice*, that we all have, is a measure of our free will and a precious possession [113]  
[Choosing between right and wrong, good and evil, is an essential part of our lives] (14.32;15.34)
- 5.13 *A plethora of power, Digital precision, and Integrated functions* are computer strengths. [114-115]  
Computers do not get tired, bored, or out of breath  
[No human being could ever hope to compete with many of the modern computer's capabilities] (4.2)
- 5.14 The use in computing of *Expert systems and AI (Artificial Intelligence)* has had only limited success [116]  
["Expertise" in "Expert systems" has often been intuitive and occasionally irrational. Experts' "know how" is sometimes little better than a guide] (5.15/20)
- 5.15 Research into *Artificial Life (ALife)* seeks to find the origin of life. It is very different from research into Artificial Intelligence. [116]  
[In ALife, computers start with assumptions from which they model possible forms of life from the results of vast numbers of iterative operations] (2.21;5.14/20)
- 5.16 In comparison with computers, *People are often underrated* [117]  
[Computers can identify only about 1% of the objects that people recognise and identify daily without a moment's thought] (5.17-20;6.28;8.5)
- 5.17 There is no perfect substitute for a *Man at the gate* when controlling who goes in and out of a building [117]  
[Computer controlled access is not infallible] (5.16;6.28;8.5;11.16;14.19)

- 5.18 ***When cross referencing and thinking in parallel, Thought may be faster than we think*** [118]  
 [The computer has much to do to catch up in such areas as human instinct, intuition inspiration, and genius] (5.16;6.28;8.3/13/21-23)
- 5.19 Human beings have ***Individual minds*** and a ***Self organising memory*** [119]  
 [The mind has no programming rules, standards, or fixed formats to which it has to conform.  
 [Human memory, unlike computer data, is of all types and flexible]  
 (4.30;5.16;6.28)
- 5.20 ***The computer's limitations*** are, simply, that it is not "alive." It cannot "feel." Even its remarkable "***Intelligence***" abilities are artificial [120]  
 [The only sensible questions we can ask about ***Intelligence*** is "What can it do?" and how much of it is there?] (2.21;5.14-16;15.16)
- 5.21 Impossible attributes of a computer are ***Awareness and appreciation, Self consciousness and understanding*** [121]  
 [A computer has no sense of "being." How could one admonish a computer for making a mistake? Could we say, but you knew what you were doing!]  
 (2.21;4.10;15.17)
- 5.22 Trying to find in computing the equivalents of human ***Consciousness and the subconscious*** is interesting but it is academic [122]  
 [For us, our subconscious mind seems sometimes to be more in control of us than "we" are] (1.28;4.10;15.17)
- 5.23 ***Conscience and morals*** are private and precious qualities that everyone has. Sometimes they are a hard task master [123]  
 [To pretend that computers have conscience and morals is futile]  
 (3.24;4.10;5.29;8.12;15.17)
- 5.24 A computer can display ***Emotion and feeling***, from the pinnacles of joy to the depths of grief. However, ***To display is not to experience*** [123-124]  
 [Displaying emotion may be acceptable for effect. For normal communication, a computer's ***display*** of feeling would be absurd] (4.10;5.4/29;15.19-22)
- 5.25 ***The quest for knowledge***, by ***Exploring the Universe***, would probably have little priority in a world where computers are the masters [124-125]  
 [The thought of all the world's computers working hard to find the highest prime number, to the exclusion of everything else, is alarming] (15.11)

- 5.26 Debates about the *Limited and unlimited proliferation* of computers started when it was claimed that computers could “think” [125]  
[The full implication of Alan Turing’s “thinking tests for computers” was not at first realised. It was in fact a challenge to human life] (5.30/32)
- 5.27 *The humble PC*, the personal computer, is a part of many people’s ability to think. [126]  
We are becoming ever more dependent on using computers  
[When working with PC’s, the mind takes short cuts that could lead to a weakening of many of our normal mental abilities and skills] (5.7;11.16)
- 5.28 Human Beings have gained *Access to the world beyond* by using external aids like telescopes, microscopes, radar, infra red devices, and X-rays etc. [127]  
[The computer is progressing in much the same way as we have. It is imitating our senses and using many additional extraneous aids] (4.15)
- 5.29 Computers can *Help on right and wrong* ways of doing things. They do this, and can only do this, without emotion or passion [127]  
[Computers may be programmed to rule on what is right and what is wrong but they can never “feel or experience” something as a consequence] (5.4/23/24)
- 5.30 *The debate continues* as to how far computers should be allowed to dominate our lives, and perhaps even one day replace us [128]  
[The Rubicon has not yet been crossed. The future is in our hands] (5.26/32;11.16)
- 5.31 The use of *Human like robots*, or even *Putting computers into people*, would be better solutions than living in *A purely computer world* [128-130]  
[The grim scenario of computers in control with people as their slaves is best left in Science Fiction, where it belongs] (5.8)
- 5.32 *Theological thoughts* are personal, private, and precious; but, whatever views they have, *People must choose* the way they want life to develop [130-131]  
[People’s actions can still seal the fate of the human race. Computer designers, if left in total control, could become the “Gods” of a future species] (5.26/30;11.32)

## Chapter 6: Information and Memory

- 6.1 Memory is more than the mind’s *Keeper of information*. It is the *Basis of consciousness* [133].  
Without memory we would not be conscious.  
[Memory is partner of the mind and also its interpreter. Memory is at the root of all our instincts, talents, and skills, and all that we know and understand]  
(1.3;2.32;6.29;10.1)

- 6.2 ***Human memory thus far*** is comparable with data that is automatically processed and archived in a computer. But it is also more than this [134]  
[Beyond merely holding information, human memory often seems to have magical, almost metaphysical, properties] 4.11/16)
- 6.3 ***Particles of memory, Limitless possibilities, and Endless conjecture*** are thoughts we have about memory [134-136]  
[We are intrigued with memory because, together with our mind, it is the most precious of all our possessions] (1.17)
- 6.4 To consider memory as an entity it is useful to think of it as ***A physical substance*** made up, at least in part, as ***Particles of matter*** [136-137]  
[Memory is manufactured mysteriously by Nature and has defied analysis since time began] (1.17;9.1;12.2)
- 6.5 ***Microdots, Infodots, and Infons*** are not new ideas. Democritus, 3000 years ago, spoke of psychic atoms; Leibniz, in the Middle Ages, of monads; and, more recently, Tom Stonier of infons [138]  
[If we call them ***microdots***, the term is still by no means a perfect description of something so miraculously small] (1.17)
- 6.6 Each microdot would be the ***Encapsulation of thought***, an idea, emotion, experience, inspiration, wish, dream, joy, dread, or anything we remember [138]  
[Human memory is a wonderful amalgam of them all] (1.17;12.22)
- 6.7 The idea of memory as a ***Woven fabric*** with single connecting threads, strengthened each time they are used, is an intriguing mental picture [139]  
[The huge number of intricate connections within each person's memory is an astounding phenomenon] (3.23;7.15)
- 6.8 Although memory is sometimes hard to recall, it could be that our ***Memory is for ever***. It is also subconsciously ***dated*** and ***labelled*** [139-141]  
[Frequent jogging of our memory suggests that, if we only know how to get at it, it is always there] (1.13/28;11.8)
- 6.9 It is possible that our ***Memory is layered, stacked, and interconnected***, in the same way that computer memory is in computers [141-142]  
[Memory stacks, chaining, indirect addressing, cross referencing, and use of keywords could all have equivalents in the mind] (3.23,4.9)

- 6.10 When remembering, our minds have a miraculous ability to “see” *Moving pictures* [143]  
from our memory  
[All memory is presumably stored in a contracted, non pictorial, form, but when it is recalled some of it is converted back into “pictures”] (7.8;9.16)
- 6.11 The *Contraction and expansion* of memory in our minds is like the making of a seed [143]  
and its developing into a plant or a flower  
[A basic particle of memory could be like a seed, folded and contracted. When unfolded it grows in time and space and has a message to tell] (1.17/29;2.28;11.2)
- 6.12 In our memory we may have *Microdots by the million*. Every single thought possibly [144]  
generates large numbers of similar memory particles  
[Replication is often nature’s way of ensuring survival] (1.17;6.21;10.18)
- 6.13 Just as there is infinity in Outer Space so, one day, we may find there are *Microdots* [144]  
*to infinity* in Inner Space; and “we” are placed between the two  
[The micro world may become as equally accessible as the macro world. The difficulty is that we have yet to acquire adequate tools for the job] (1.17;3.25)
- 6.14 *Memory and the illusion of time* leads us to believe that “the older we become, the [145]  
quicker time passes”  
[Subconsciously, we may be comparing the tiny “Present” with our ever growing “Past.” The fraction of Present over Past gets smaller as the years pass by] (1.28)
- 6.15 *Memory that comes uninvited* into our minds comes unsolicited, and may be there [145]  
without our realising it  
[Uninvited memory that finds its way into our minds may affect our moods, emotions and behaviour, for which we are not then entirely responsible] (9.31)
- 6.16 Human memory is in *A language of many forms*; of particles, shapes, designs, lines, [146]  
liquids, solids, or any medium that can be “modulated”  
[All creatures use memory for communication in different ways; and particularly for, migration, navigating, and moving around in groups] (1.17;3.14)
- 6.17 Despite language *Differences within a species*, language provides good [146-147]  
communication *Species may speak unto species* in many different ways  
[The meaning of language depends on individual experience; but meaning is still conveyed very successfully, even sometimes between the species] (1.37;3.14;7.25)
- 6.18 There are many theories on where human memory is held, ranging from *Memories* [148]  
*in orbit* even to *Storage by frequency*  
[It is said that the mind produces all the beautiful colours that it does for us, by changing different wavelengths of light into colour] (1.23;8.6)

- 6.19 There is little doubt that there is *Memory in the brain* and that it is worked on in the brain. Sometimes, pains in our head seem to confirm this [149]  
[Memory may not, however, be held permanently in the brain. It may be located elsewhere, and recalled and processed in the brain when wanted] (7.12)
- 6.20 It is possible we have *Distributed memory*. There could be *Memory in the blood*, [149-150]  
i.e. memory may be circulated in our blood, or via the lymph glands  
[The murderer of a heart transplant donor was once said to have been “seen” in the dreams of the person who had received the heart] (6.21/23;12.12-15)
- 6.21 Having memory in the blood, would not necessarily mean that by donating blood the donor would lose part of his or her memory [150]  
[A person donating or losing blood probably still has plenty of memory from which the mind or brain is able to make copies] (6.12/20)
- 6.22 *Memories hard to recall* could be caused by damaged memory, or by a deficiency in the mechanisms that work on it [151]  
[Children’s memories (especially, say, up to age three) may be limited because they do not have appropriate language for their thoughts]  
(3.13;8.20;10.3/8/11/17/19/21;11.24)
- 6.23 *Discarded microdots* may consist of interim, temporary “working memory” and other residue, which the mind no longer needs [152]  
[The body’s blood circulation would be an ideal cleansing agent for removing old, damaged, and unwanted, memory (6.20)
- 6.24 It has been suggested that, while we sleep, our subconscious mind tidies up our memory; as if it was “*Cleaning the Slate*” [152]  
[Recurring dreams possibly throw doubt on the suggestion that when we sleep the mind is reorganising and tidying up our memory] (1.28;2.13;9.9/24)
- 6.25 *Microdots trapped* in the body could perhaps sometimes cause illness and pain. Trapped *Microdots released* in some way might bring relief [153]  
[It could be that trapped microdots are sometimes dislodged by signals from the brain, - an example perhaps of the power of mind over matter] (10.19)
- 6.26 Experiments on mind and memory are, probably rightly, claimed to be *Experiments difficult to repeat* [154]  
[Particles of memory would be unlikely to respond always in exactly the same way to any particular experiment] (1.17;12.14)

- 6.27 At the present time, *Nature may not trust us* to know exactly what our memory is, or how it is formed [154]  
[For human beings to meddle with memory before the time is right could be even more dangerous than working with nuclear power or DNA molecules] (9.1;11.27)
- 6.28 Human memory is *A truly wonderful phenomenon*. Some of the mind's work on memory would stump even the world's best computers [155]  
[Human memory is at the heart of the Information story] (1.3;5.16-19)
- 6.29 So amazing is the memory phenomenon, we should not fear to look at many *Implausible possibilities* in order to explain it [155]  
[Memory is at the basis of our consciousness and our subconscious. This is why we are willing to look for answers even among the implausible] (1.3;6.1)

### Chapter 7: Information, Mind, and its Methods

- 7.1 Our mind is *Much more than a controller*. It manages memory; solves our problems, and gives us guidance and mental agility. It controls our emotions. It is the source of all our conscious and subconscious thought [157]  
[There is no match for the mind in what it does for us] (1.28/39;7.31/33)
- 7.2 Often *The computer lags behind* people. Compared with a computer the human mind is an *Anatomical wonder* [158]  
[Unlike computer software, the mind has feeling, consciousness, subconsciousness, self consciousness, and even possibly a soul] (1.28;4.3/10;5.4)
- 7.3 Against a background of *Electronics, Machinery, and Soul*, the human mind resembles Electronics;—unseen, fast, silent, long lasting, and versatile [159]  
[Mind and Electronics are timeless, ethereal, phenomena. Sometimes they seem to be in another dimension] (4.3/11;15.32)
- 7.4 We tend to think of brain and body as hardware, and the mind as software [159]  
The body, with its visible and movable parts, is more like a machine  
[The body is material, fragile, and breakable. It wears out with age and returns to earth from whence it came] (4.3/11)
- 7.5 *States of mind* are consciousness, self consciousness, and the subconscious [159]  
[We may not know much about the subconscious, but it seems sometimes to know an awful lot about us] (1.28;4.10)
- 7.6 When it is working properly, our conscious mind retains vital *Links with the subconscious* [160]  
[Under normal conditions, we can always return to the conscious state] (1.28;15.26)

- 7.7 Frequent use of the word “mind” in peoples’ sayings shows how *mindful and aware* “we” are of its importance [161]  
[Exactly what the Mind is, who is the “I” with whom it deliberates, and from what or whom it takes instructions, is still a mystery] (10.1)
- 7.8 *Seeing with the mind*, and creating mental pictures (notably in our dreams) is a remarkable phenomenon [161]  
[It could be that, what we “see” in our minds are particles of our memory that are converted temporarily into moving particles of light] (1.17;6.10;9.19;10.14)
- 7.9 *Making up the mind* is like taking a majority vote on what to do. The result is like iron filings (or particles) being attracted by a magnet [162]  
[Making up our mind is comparable with that of ants, birds, bees, and fish, when they decide to move off together in the same direction] (1.17;7.14/16)
- 7.10 Normally, there are *No blocks or barriers* to impede the mind. The mind deals with all things, abstract, spiritual, and material, come what may [162]  
[There are no areas into which the mind may not go; except those we purposely create ourselves with our *unshakeable data* and notions] (1.15)
- 7.11 All our *Conscious and involuntary actions*, and “know how,” are a part of our total memory [163]  
[All our actions, movements, and skills, are controlled by our mind and central nervous system working together] (1.6/28;4.12)
- 7.12 *The location of thought*, if not all our memory, is in the brain [163]  
[It is clear that people believe that the brain is where we think when they make such remarks as, “It simply gives me a headache to think about it”] (6.19)
- 7.13 The *Advantages of layers and stacks* of memory is well known in computing. Our minds might benefit by using similar methods [164]  
[A good way of managing information is to hold and work on it in layers and stacks, as in computing] (4.3/9;9.13)
- 7.14 Having multiple “stacks” of memory in the mind could be a reason why sometimes we feel we have *Not one mind but two or more* [166]  
[Having two or more versions of memory could explain why we sometimes have difficulty in “making up our mind”] (4.3/9;7.9;9.15)
- 7.15 By *Exercising and refreshing the mind* (and body) regularly we retain and strengthen our abilities and skills, [166]  
[“If we don’t use “it,” we lose “it”] (4.3/6;6.7)

- 7.16 Layers and stacks of data (7.13) are very useful in computing when carrying out *Simultaneous operations* [167]  
 [People also do many things at the same time; e.g. when breathing, thinking, listening, moving around, and at the same time solving problems] (4.3/9;7.9)
- 7.17 *The mind decides* what memory is to be kept and what use to make of it, sometimes with seemingly *Extravagant resources* [167-168]  
 [When dealing with something as important as survival, with which memory is often concerned, Nature usually has no objection to redundancy] (4.3/24;9.15)
- 7.18 In order to do anything (by mind or computer), *Minute and meticulous* instructions have first to be devised, tested, and stored [168]  
 [“Know how” does not arise by magic. Skills have to be prepared, programmed, and practised] (4.3/7)
- 7.19 *Data typing* is a way of helping a computer to avoid using wrong data [169]  
 [Temporary blips (or blanks) in our thinking, may sometimes be caused by the mind re-setting itself after checking its data] (3.12;4.3;10.25)
- 7.20 *Finding the memory required*, sometimes requires searching an entire memory from beginning to end. In computing, beginning to end searches ensure that no relevant data are missed. The time taken to do this is becoming less and less of a problem] (3.10;4.3) [169]
- 7.21 *Limitations of language*, and a lack language skills, can lead to mental, blockages frustration, confusion, and even illness [170]  
 [Language is one of the mind’s principal tools, but it has limitations] (3.13;10.9;11.12)
- 7.22 Meaning is conveyed in many ways using both *Simplicity and Language* and the rich language of literature. [171]  
 [Technical writing is often unsatisfactory. The situation is exacerbated by the growth of multinational products and global trading] (3.3)
- 7.23 *Languages of the levels* refer to the many different levels of language, dialect, and idiom, that the mind deals with in its normal daily work [171]  
 [Differences in language and dialects in different parts of our memory possibly sometimes cause flaws in our reasoning] (3.13;11.12)
- 7.24 Some people believe we are taught ability. Others believe our abilities are with us from birth, and we have to “discover” them [171]  
 [Whether what we learn is taught or discovered does not matter. Teaching and discovering are partners. They help us to develop and become what we are] (11.6/7)

- 7.25 *Languages without words*, art, and painting, etc. are analogue (not digital), They evoke all kinds of emotion from peaks of joy to the depths of grief [172]  
[Facial expressions express meaning, even between the species] (3.14/17;6.17;11.12)
- 7.26 *Languages of the mind*, *Languages of other beings*, and *The language of emotion* provide the means for communicating [172-174]  
[Language helps us to do great things but also things that we regret] (3.14/17;11.12)
- 7.27 *The primary task of all* for the mind is to abstract all that it perceives and keep its information within manageable proportions. [174]  
[An abstract is like “growth” in reverse. It is like a bloom returning to a seed. Later, the seed is “filled out” and grows again] (1.25/29;8.7/8;9.7)
- 7.28 *A vital aid to perception* is memory that has already been acquired. *Help from the layers* (of memory) could also be useful [175]  
[When we note something, we incorporate it with other memory. When we remember we don’t just recall. We check against something and confirm it] (1.25;4.9/17;7.30;8.9;10.22)
- 7.29 After abstraction, *A never ending task* for the mind (awake or asleep) is to look for analogies in our memory. *Analogies are a language used* by the mind [176-177]  
[Our subconscious is continually thinking up scenarios based on analogies. It considers these and suggests possible future situations] (1.26/28;8.18;9.7/10)
- 7.30 In coping with the *Bewildering content* of our memory, the mind possibly gets *Help from layered structures* in which it is held [177-178]  
[As each layer is checked in turn for common sense, any absurdities (other than those we see In our dreams) would usually be rejected] (1.28;3.12;4.3/9;7.28)
- 7.31 For all of us, our conscious mind is *The great interpreter and more*. The *Importance of the subconscious* to our well being is also recognised [179]  
[In a subconscious state, we are usually in safe hands. The subconscious is able to pass control back to the conscious mind at any time] (1.28;2.32;7.1)
- 7.32 *More thoughts on another dimension* arise because on matters of mind and memory there is a need for *More room to investigate* [180-181]  
[Possibly, in some fourth dimension of Space and time (between the atoms of matter), memory particles hold the secret of how our minds work] (1.28;2.22;9.1)
- 7.33 The human mind, together with its important subconscious, is the *Gateway to a Universe* of ever more understanding, wonder, and magic [181]  
[Human minds and memory hold an abundance of accumulated thought, information, knowledge, and wisdom, that defy the normal rules of Physics] (1.28;7.1)

**Chapter 8: Information and the Intellect**

- 8.1 Memory is *A most precious possession*. Its *Physical properties, its Legitimate uses, and Great Variety* are stimulus for the intellect. [183-185]  
[Our personal memory is the history of all our thoughts and deeds; but even with all its remarkable uses and properties, memory is still information] (1.3;8.24;15.36)
- 8.2 *Memory at its most basic level* is in our DNA & RNA molecules [185]  
[As we grow, our DNA & RNA reveal who and what we are. One day, they may even tell us the “thoughts of our ancestors] (1.3;12.22)
- 8.3 Many actions in life are *By instinct and involuntary*. Living matter doesn’t have to have brains in order to do something [186]  
[Some species have complex brains and. some none at all] (5.18;8.4/14;15.16)
- 8.4 By *Developing our instincts* and brain power, we do both *Dedicated and flexible tasks*; as also do Special and General Purpose computers [186-187]  
[Special Purpose tasks are automatic, fixed, and single minded; General Purpose tasks are conditional, changeable, and multi-functional] (4.6.8.3)
- 8.5 *“To recognise is to identify.”* Recognition in a hostile world is a means to protection. [187]  
We compare what we “see and sense” with our memory  
[Distinguishing between friend and foe, and knowing which food is safe to eat was a necessity in primitive times. It is just as important today] (1.26;5.16/17)
- 8.6 Locating memory is sometimes like the *Tuning in and recall* we do when we tune into a radio or TV frequency [188]  
[Our mind finds what we want and puts it into a form we understand] (1.23;6.18)
- 8.7 Precisely what we bring to mind when we remember is affected by *The Influence of language, “fill-in data,”* and maybe the *Role of microdots* [188-189]  
[Our memories are very quickly connected to other information in our memory, both through language and the way the information is recorded] (1.25;3.23;7.27;8.8)
- 8.8 In *More thoughts on computing and people* we note that, for a computer, the first step in “starting up” is called “bootstrapping” [190]  
[A computer “pulls itself up by its bootstraps.” It starts with a very few instructions, which little by little call in more, until it is fully operational. The method has close similarities with “Abstraction and fill in” methods of the mind] (1.25;4.3;7.27;8.7)

- 8.9 For us, **Remembering is more than a recollection**. When we remember, we not only recall data; we check it against “something.” Something within us vouches for the truth of what we remember. We confirm [190]  
[When we remember, we reconstruct a situation; although it is not always as accurate as we would wish. We also remember our emotions at the time] (7.28;10.22)
- 8.10 **Thinking starts with memory and is complementary** to it. **Thinking is sometimes, subconscious**, allowing us also to do other things at the same time [191-192]  
[Some energy within the brain, armed with language and ideas, searches our memory for “relevant” data, extracts it, and “works” on it (1.28;3.13)]
- 8.11 **Prudence** means **Exercising caution** when we decide to do something. **The mind as arbiter** decides whether “to do, or not to do” [193]  
[Unshakeable data, common sense, and other data in our memory, sometimes hold us back from what we might otherwise do.] (1.15;2.1;14.24)
- 8.12 Conscience is **A moral obligation**. **The mind is its keeper**. Conscience may be self imposed, or it may be thought of as a “God given” decree [194-195]  
[When we follow our conscience, we feel better for it. If God didn’t exist it would be necessary to invent him—Voltaire] (3.24;4.10;5.23)
- 8.13 Intuition is **A product of the subconscious**. It is a case of believing in something when we don’t know why. [195]  
[Intuition confirms that our subconscious is continuously “working” on our memory, even though we are not aware that it is] (1.28;5.18)
- 8.14 **Not all intuitions are brilliant**; but, **Intuition like thinking is inescapable**. The mind is continuously reacting to information [196]  
[Intuition is an instinct like remembering, thinking, and conscience. They are activities that keep us alive. When they stop, we are no longer “living”] (8.3;15.11)
- 8.15 **Strengthening the will, Focussing of thought**, and sheer **Will Power** concentrate our thinking, but we are often diverted from our purpose [197-198]  
[Concentration may be broken by unexpected events, distractions, language, flaws in our reasoning, or an over excited subconscious] (1.28;8.16;11.20)
- 8.16 When we are **Learning for the future**, our mind may be **Burning in microdots** just as we “burn in” data into the silicon chips of a computer [199]  
[We learn by repetition; repeating something over and over again, until recall of what we have learned is as accurate and swift as we can make it] (4.16;8.15)

- 8.17 Sometimes we feel there are **Brakes on learning**. The harder we try to learn, or use our mind, the harder it seems [200]  
 [Brakes on our learning could be a safety valve that protects the mind from overload, conflict of interests, confusion, and misunderstanding] (1.15;4.24;8.20;10.26)
- 8.18 Imagination is a way of **Widening the horizons** of our information. The mind builds on analogies in our memory, and comes up with new ideas [201]  
 [Concentration and learning are introvert; Imagination is extrovert] (7.29;8.19;15.24)
- 8.19 When we “imagine,” our mind is possibly **Gathering in microdots** and and looking for as much variety in our information as it can [201]  
 [As the mind goes off on an imagination spree, its whole action is probably like throwing a pebble into a pool of half formed ideas] (8.18;9.17;10.6)
- 8.20 **Limits and inhibitions** in our imagination could be caused by having too few, or damaged, microdots; or a fault in mechanisms that work on them [202]  
 [Both the passive and active components of information must be healthy for memory to be at its best. “Unshakeable” data may play a part in our inhibitions] (1.15/19;6.22;8.17)
- 8.21 **Beyond the imagination** is Inspiration which brings freshness, energy, alertness and life to data. Our information is buoyed up with flair and feeling [202]  
 [Inspiration is the good fortune to have and develop sudden, brilliant, and creative ideas, and to make happy and unexpected discoveries] (5.18;8.22)
- 8.22 Inspiration would make best use of **Microdots and analogies**, causing them like rare seeds to “unfold” and reveal unsuspected truths [203]  
 [Inspiration, like serendipity, is an enviable quality that distinguishes people from computers] (1.29;5.18;8.21)
- 8.23 **Beyond inspiration** lies genius. A **Genius knows no bounds** in his or her use of information. Like an eminent chess player, a genius holds many possible moves in the mind at a time [203-204]  
 [A genius may perhaps even see things in a fourth dimension, possibly between the atoms of matter] (2.22;5.18;9.3)
- 8.24 The one indispensable requirement for **Creating memory**, and all the remarkable powers of the human mind, is information [204]  
 [Even our most recent perceptions are already information that is stored in our memory] (1.3/25;8.1)

- 8.25 Information, with its ever widening Information Technology, is *Shaping the human role* [205]  
It may even be changing our species  
[It is sheer wonder that so much information, and such phenomenal use of it, is found in such a small place as the human brain] (4.27;10.30;11.25/31;12.31;14.29)

### Chapter 9: Information and Dreams

- 9.1 When we try to analyse our dreams, we are *Probing nature's secrets*, their purpose, [207]  
*Cause and mechanisms*  
[Dreaming is as near as most of us ever come to seeing ghosts. The origin of both may be found one day to be in particles of memory] (6.4/27;7.32;9.19;11.27;12.2/13)
- 9.2 Connections between dreams and real life are complex and by no means understood. [208]  
*Theories are to be encouraged*  
[Knowing how our dreams are created could enrich our lives]  
(9.3/8/18/29/32;15.23-25)
- 9.3 Our dreams tempt us to think that dreams are *A clue to greater things, and more possibilities* as to how our mind works [209]  
[It is possible that in dreams we "see things" in different dimensions]  
(2.22;8.23;9.2/32)
- 9.4 In both dreaming and computing, *Information is the medium*. In both cases, we call it [210]  
memory  
[Human memory, computer memory, and all information, have two separate components; data, and a mechanism (which includes language) that works on it]  
(1.19;3.13)
- 9.5 A comparison of the ways that computers work on data, and the way that the mind [211]  
produces dreams, leads to *Converging strands of study*  
[From studying computer methods and the minutiae of dreams, we could discover what our memory is made of and how our minds are organised] 3.1;9.6)
- 9.6 To ask *Can computers dream?* is the same as asking if metal and plastic, and strings of [211],  
logic can think. On the face of it, the question is inane  
[Any thought of a computer or its software dreaming is to invest them with human-like feelings, thought, and experience] (5.4;9.5)
- 9.7 For the most part, dreams are *Mixed up reflections* of everyday living [212]  
[Dreams reflect the mind's remarkable activities of, abstraction, analogy, imagination, and making up stories] (1.25/26;7.27/29;9.8/12/18;10.29;15.24)

- 9.8 Dreams are *Neither magical nor weird* although their content is often amazing and extraordinary [212]  
[It is likely that our dreams will always have their roots in something we have seen or experienced] (9.2/7/18)
- 9.9 Sleep could be a period for *Assimilating, tidying up, and renewal* of mind and body. [213]  
The necessity of sleep is a natural law that has to be obeyed  
[If we disobey nature’s rules, it usually has ways of making us comply] (6.24)
- 9.10 Dreaming is a *Continuation of normal functions* of the mind. The mind cannot be [214]  
started and stopped like a clock or a computer  
[Some people say that dreaming is also continuous and never stops, but that we are aware of it only when we sleep] (7.29;9.20)
- 9.11 A dream gives us *A peep into the subconscious*, at a time when many of the mind’s [214]  
normal functions are not working  
[Like an inert machine, some “wheels” of the mind keep on turning even after the “engine” has stopped] (1.28)
- 9.12 There is *Sense and nonsense* in dreams but common sense is rare [215]  
[Our dreams are not validated and may be absurd. On the other hand, we sometimes wake from our dreams with a very clear head] (9.7/17/26)
- 9.13 On waking, we sometimes feel we have been *Dreaming in layers* of consciousness and [216]  
we are moving back up through these layers  
[Sometimes we “wake” to find we are still dreaming. It seems there is at least one more layer to come before we reach the top] (2.13;4.9;7.13;9.14)
- 9.14 Memory layers are comparable with *The Onion skin model* in computing, a concept [216]  
that “fits in” with data sets and the information hierarchy  
[Dreams sometimes seem to emerge from successive layers of information, envelopes within envelopes, like the layered skins of an onion] (1.31/33;4.9;9.13)
- 9.15 Mind and memory (like the body) may have *Duplicate parts*. Information in these [217]  
parts may sometimes be contradictory leading to confusion in dreams  
[Information in one part of our mind may be absent or different in another]  
(4.24;7.14/17)
- 9.16 *The language of dreams* is a *Language of analogy*, metaphor, and pictures. Similarity, [217-218]  
inference, and associations, are all reflected in dreams  
[Although dreams are fanciful, they may still be plausible]  
(1.26;3.13/14;6.10;9.18/22;15.24)

- 9.17 Dreams are a result of *Minds that will not rest*. When we dream, our mind wanders through masses of disorganised information [219]  
[Unrelated people, places, things, and deeds, vie for a place in our dreams. Emotion too often takes precedence over reason, making dreams a nonsense] (8.19;9.12)
- 9.18 By using *Abstraction and Analogy*, our dreams tell us how we would probably feel and respond if we were in similar situations [219]  
[The connection of a dream with real life may sometimes seem uncertain and vague but, if we look hard for it, we can usually find it] (1.25/26;9.2/7/8/16/21)
- 9.19 *The microdot connection* with memory is backed up by the possibility that loosely floating particles could be where our dreams begin [220]  
[Dreams could depend on how many memory particles are available, their condition, and where they happen to be at the moment] (1.17;7.8;9.1;10.14)
- 9.20 *Forming and changing images* is part of the mind's normal activity but, in our dreams, our common sense checks are missing [221]  
[Seeing a horse and chariot in a passing cloud, or someone's likeness in the fire, occurs when our mind seizes on single features to the exclusion of the rest] (3.22;9.10;12.25)
- 9.21 *Moods and recent events* in our dreams are often associated with an unknown person who, later, turns out to be oneself [221]  
[We know we are someone in our dreams because we can see that his or her actions are exactly as ours would be] (9.18)
- 9.22 *Outside influences and persuasion* may be merged into our dreams. Usually dreams can be traced back to a cause, but *Originality is not excluded* [222]  
[The cry of a child, or bark of a dog may find its way into our dreams. Everything has a cause, but occasionally a dream seems to be entirely original] (9.16)
- 9.23 A dream is *A temporary surrender* to fate. When we go to sleep, we give our consent to dream. We are at the whim and mercy of chance [223]  
[Except when we take part in dream sharing experiments, or in lucid dreaming, we have no control over our dreams] (9.30/31)
- 9.24 *Dreams are fleeting* and *Soon forgotten. Repetition and continuation* of our dreams, however, are by no means uncommon [223-224]  
[Although dreams fade away, they occasionally recur. There is no law on the conservation of information. As usual, it survives and proliferates] (1.10;6.24;9.28;10.4)

- 9.25 With *The mind in an idling mode*, and with the *Uncontrollable content* of dreams, there is no limit to the implausible situations created [225-226]  
[The remarkable stories that make up our dreams are completely uninhibited and unrestrained] (4.19;9.26;10.29)
- 9.26 Dreams arise out of a *Ceaseless merging and substitution* of information on people, things, and events; irrespective of the nonsense created [226]  
[The features, qualities, and behaviour of, self, friends, foes, and others, are often merged, combined, and substituted, in the oddest of ways] (9.12/25;10.16)
- 9.27 In most dreams, there is an *Absence of barriers* and a remarkable *Absence of time* [227-228]  
[As with ghosts, walls and locked doors are no barrier to entry. Similarly, ageing, death, and the passage of time are seldom acknowledged] (2.28;12.4)
- 9.28 *Holding on and letting go* of dreams can be a problem. *Writing down dreams* immediately on waking is the best way of remembering them [228-229]  
[Writing down dreams, even in the middle of the night, is the surest way to “pin them down.” The mind can then rest and, go on to dream some more] (9.24)
- 9.29 *Post dream analysis* often reveals unsuspected connections in our dreams with previously real events [229]  
[In our dreams, our subconscious may be trying to tell us something. A little hard thinking may often reveal a connection] (1.28;9.2)
- 9.30 *Lucid dreaming* is “conscious sleep” [230]  
[When we have lucid dreams, we are aware we are dreaming. Tentatively, and with care, we can often influence what happens next] (9.23)
- 9.31 Dreams affect our *Moods and temper*, and well being. Recalling a dream is sometimes *Auspicious and therapeutic* [231-232]  
[Unpleasant dreams may leave us moody and off colour. Pleasant dreams may boost our spirits but, in neither case, are we always aware of why] (6.15;9.2/3;10.22;15.25)
- 9.32 *More study is essential* into all aspects of dreams. When we dream, is it possible we are *In the lobby of a new dimension?* [232-233]  
[It could be that in our dreams we are on the threshold of a separate “information world.” If so, then dreams are a vital part of the puzzle] (2.22;9.2/3)

**Chapter 10: Information and States of Mind**

- 10.1 *In good condition and bad, Memory is a player of many parts.* It is key to our state of mind, It defines who and what we are [235-236]  
[Memory is the basis of consciousness and the self conscious “I.” It is at the heart of all human experience; but, unfortunately also, mental illness (1.1/3;6.1;7.7)]
- 10.2 *Dreams and mental illness* are allied. Dreams are usually harmless. We can shake them off. If we are mentally ill, we cannot do this [236]  
[If the mind is damaged, mixed up thoughts like those in our dreams are in control. Harmony between mind and body may be badly disturbed] (2.31;10.27;13.11;15.14/15)
- 10.3 There is *No simple answer* to damaged mind or memory; nor, usually, to other *Spontaneous and intended* bad things that may happen to our memory [237]  
[Whatever happens to our memory, it is still information] (1.6;6.22)
- 10.4 Déjà vue is a harmless *Understandable quirk* of the mind. The “past” returns, becomes *the instant past*, and merges with the present [238-239]  
[Whatever is the basic cause of déjà vue, memory and information are at the heart of it] (1.6;9.24)
- 10.5 *Microdot possibilities* suggest that, in déjà vue, the mind is comparing only the closest matching particles of past and present [240]  
[In reconstructing “the past,” the mind could be using too much “fill-in” from the present; and not enough from the past] (1.6/17/25)
- 10.6 Precognition is like *Déjà vue coming from an opposite direction. Imaginative minds* have strange prescience of a future event [240-241]  
[Precognition, whether true or imagined is a prodigious feat of the mind] (1.6;2.4;8.19;12.1)
- 10.7 To say “I thought it would happen” is *Spontaneous reaction*. The only proof of Precognition is a *Recorded prediction* [241-242]  
[If the prediction of something passes all tests of being genuine, it could mean there are forces and phenomena at work that we do not understand] (1.6;12.10)
- 10.8 Whatever form human memory takes (neuron, electro-chemical, or charged particles), *Instability* and *Uncertainty* are often at the heart of it [242-243]  
[Our memory changes as we and our emotions change. If it is damaged, it can seriously affect our, health, sanity, dreams; and behaviour] (1.6/17;6.22;10.9-13/27)

- 10.9 Careless gestures, sarcasm, *Linguistics, Semantics, and Nuance*, may unwittingly be the cause of much personal discomfort and distress [243-244]  
 [Thoughtless words may touch raw nerves; and cause strong emotion, mental blockages and even illness in people. Words often say more than is said] (1.6;3.13;7.21;10.8)
- 10.10 Anxiety often starts with *Resistance to change* and *Hidden worries*. We fear an uncertain future [245]  
 [Changes in custom, new information, new rules to live by, and ageing, are fundamental ordinances of life] (1.6;10.8)
- 10.11 *Basic causes* of mental illness may due to either a damaged memory or faults in the mechanisms that work on it [246]  
 [Mind and body depend on information in our memory. If this is faulty, the reasons behind our actions may also be faulty. Anything could follow] (1.6;6.22;10.8/17/27)
- 10.12 A typical *Obsession* is stubbornly to keep doing something, almost as a ritual, when repeating the action is obviously totally unnecessary, [246]  
 [Like a broken record player, the mind becomes stuck in a groove, keeps repeating itself, and refuses to move on] (1.6;10.8;13.7)
- 10.13 *Eccentricity* (acting in unconventional ways) is a form of obsession. Sometimes eccentric dress and behaviour are contrived and cultivated [247]  
 [In some people, an obsession may become endearing] (1.6;10.8;13.13/25)
- 10.14 *Hallucinations* are like dreams that continue to be believed even after they are over. Particles of memory are in an “overdrive” mode [248]  
 [After a flight into fantasy, the mind is unable to find “reality”] (1.6/17;7.8;9.19)
- 10.15 *Delusions* are self deceptions that range from feelings of grandeur and greatness down to the depths of despair [248]  
 [False situations are acted out so faithfully and persistently that ultimately they are believed to be true] (1.6;10.32)
- 10.16 Absent mindedness is a form of *Amnesia*. It is similar to the ceaseless substitution of one thing for another that takes place in our dreams [249]  
 [Objects are changed and interchanged (e.g. matches for cigarettes, a teapot for a kettle) without regard for common sense or the consequences] (1.6;9.26)
- 10.17 *Amnesia* proper is not usually permanent or total. It could be due to faulty mechanisms of memory rather than to faults in memory itself [249]  
 [The know how of breathing, walking, and doing things, clearly remains intact. This may be followed later by the recovery of all memory] (1.6;6.22;10.11/26)

- 10.18 If there are billions of microdots in our memory; then, at some stage, *Microdot mania* [250]  
and disorder in some form would not be surprising  
[It may be expected that occasionally everybody has their “*aberrative*” moments]  
(1.6;6.12)
- 10.19 *Failure of function* and *Aches and pains* are possibly caused sometimes by our [250-251]  
memory being damaged or “trapped” in the body  
[It could be that the brain is sometimes able to send out signals that dislodge  
trapped microdots, clearly a case of mind affecting matter] (1.6/17;6.22/25)
- 10.20 *Ruffled feathers and emotion* arise out of people’s likes and dislikes. In our “likes and [251]  
dislikes” we see the beginning of uncontrolled information  
[Emotional and irrational information seems able to bypass the body’s normal checks  
and balances, and sometimes results in anger and rage] (1.6;5.5;15.19-21)
- 10.21 A connection between memory and *Major illness* can sometimes be seen in strokes, [252]  
heart failure, and epilepsy, etc., that sadly some people suffer  
[If our brains, mind, and memory are damaged they are unable to help the body to  
function as it should] (1.6;6.22;15.14/15)
- 10.22 Recollecting dreams and memories is often, both mentally and physically, a form of [253]  
*Therapy and relief*  
[Remembering something pleasant gives us a feeling of well being] (1.6;7.28;8.9;9.31)
- 10.23 By reversing the electrical polarity in computers, *Positive and negative charges* are [253]  
interchanged. Yes’s are turned into No’s; and No’s into Yes’s  
[If electrical polarities in our Mind and Body were reversed, the consequences would  
presumably be disastrous] (1.6/21;3.15;4.4)
- 10.24 In a computer, *Hidden data* is like information in our subconscious. We may not be [254]  
aware of its influence on us or our reasoning  
[Neither computers nor our minds find it easy to “forget” completely. So called  
“deleted” data can often be recovered] (1.6/13/28;4.3/16/19;15.8)
- 10.25 If *Damaged data* (especially strings of macros) in a computer are used by mistake, [255]  
they may start an unstoppable, runaway, process  
[If human beings have damaged strings of instructions in their bodies  
(e.g. in their DNA), the consequences presumably may also be disastrous]  
(1.6;4.7/8;7.19)

- 10.26 If (by mistake) *Data are erased or missing* in a computer, there is usually a “fail-safe” or “default” procedure to call on. Human beings also have fail-safe protection for use when things go wrong [255]  
 [In computers, fail-safe protection may cause a temporary “blip” in operations. In people, there could be a short loss of memory] (1.6/14;4.24;8.17;10.17;11.26)
- 10.27 Mixed up data in our minds, like damaged *Keywords and concordance* in computers, could lead to false reasoning and relationships [256]  
 [Whether in computers or us; if processes are damaged, results are likely to be illogical. In people, the effects could be mental illness] (1.6;4.20;10.2/8/11)
- 10.28 *Meditation, Faith healing, and Hypnosis*, all try to achieve their purpose by controlling the subject’s memory [256-258]  
 [When all experiments on their memory are over, people have to return to the “land of the living” and to more mundane and conventional pursuits] (1.6;10.30;11.22)
- 10.29 *Hypnotic dangers* in hypnotism arise because, as we know from dreaming, the subconscious is very good at making up stories [258]  
 [Under hypnosis, what a person “remembers” could be a fabrication of the truth and therefore unreliable] (1.6/26/28;9.7/25)
- 10.30 *Microdot aspects, And further possibilities* relating to memory, may one day become important considerations in human development [259-260]  
 [What people seek to do today by Mind control, Faith healing, Hypnosis, Mind reading, and Telepathy, etc. could become attributes of our species] (1.6;4.27;8.25;10.28;12.6/24)
- 10.31 Electronic treatments, *Acupuncture*, and *Drugs*, may all greatly affect human memory; and especially so if memory is based on particles [260-261]  
 [The side effects, on mind, memory, and body, of many treatments of illness are not always well known] (1.6;2.31;11.23/24)
- 10.32 Some examples of enduring intense pain and suffering may be *Feats of the mind* in more ways than one; but, they are still hard to explain [261]  
 [Self delusion, deception, fraud, and tricks of the mind, are unfortunately some ways of portraying pain] (1.6;10.15)
- 10.33 When we have a *Transcending experience*, we feel the presence of something far greater than ourselves. It is the human spirit [262]  
 [The human spirit is nearer to the poet and the artist, than to the engineer or scientist; and perhaps also nearer to the dreamer than the philosopher] (1.6;5.11;13.26;14.8;15.10)

- 10.34 Memory is *A link to all that we do*. It is our identification tag and our soul Our personal memory distinguishes us completely from all other people [263]  
 [Our memory is a record of all our deeds. It is a cross we bear and keep; and possibly take with us, even beyond the grave] (1.6/7;11.3;12.22;15.8)

### Chapter 11: Information, Use, and Misuse

- 11.1 In all information, and in all life's activities, there is *Good and bad* [265]  
 [Information has the potential for great good; but often it also has a downside and opportunity for misuse] (1.1;5.1;11.11/18)
- 11.2 *Information is organic*, developing, and changing like living things. No number of positive results are final. One negative can destroy all positives [266]  
 [Information changes even by being observed. We can never prove something is always true. We can only prove it false—Hume and Popper] (1.22/29;3.22;6.11;13.5)
- 11.3 *Each mind is a separate world*. The only known way into another person's mind is by communicating, i.e. by exchanging information [266]  
 [All information has, and even same texts have, different meanings for everybody. The "mind worlds" of different people are never identical]  
 (1.8/24/27;10.34;12.18-20)
- 11.4 The scope of information is infinite and ranges *From use to misuse*. It leads us to ponder our *Subconscious and the Ultimate Why* [267-268]  
 [By studying our subconscious we may learn why we do many things, but "Why should It all be?" remains as mysterious as ever]  
 (1.28;5.2;11.29/30;13.28/29;15.4/29/35)
- 11.5 By *Accepting the past*; or, at least by being open minded about the past, Society avoids dissension and unrest [268]  
 [Tearing up the past, questioning everything, leaves nothing revered] (14.5/10)
- 11.6 *"Handing on information,"* wanting to "tell" others, is a universal custom [269]  
 [Possibly, by informing others, we feel we are paying our "rent"] (7.24;11.7;14.5/6)
- 11.7 *Teaching the children well* should be a primary aim of all society [269]  
 [We have to live with history. We must accept that much of the first information we acquire as children may be suspect] (7.24;11.6)
- 11.8 We should be constantly aware of the unforeseen *Influence of the label* [270]  
 [Careless and thoughtless labelling may create false images and standards by which people are later wrongly branded and judged] (3.22;6.8;14.15)

- 11.9 **Conformity** is sometimes as undesirable as **Prejudice and bias**. A healthy scepticism of all things, even of one's own beliefs, is wisdom [271]  
 ["This above all: to thine own self be true"—William Shakespeare.]  
 (1.6;11.13/14;14.15;15.17)
- 11.10 **Persuasion** by information is a sane and civilised way to influence people [272]  
 ["Jaw jaw" is always better than "War war"] (13.9;14.7/10/32)
- 11.11 The **Power of unshakeable belief** is typified in the motivation of terrorists who intentionally commit suicide while killing others [273]  
 [The influence of information, once inside the human mind may be as evil and awesome in some people as it is good in others] (1.15;11.1;14.15)
- 11.12 **The Beginnings of deceit** using information may be deliberate, innocent, silent, obvious, in pictures, or in words [274]  
 [Harm may be caused by implication, as much as by what is actually said or done. Some words and actions have unintended effects] (3.14/19;7.21/23/25/26;14.15)
- 11.13 The lines that separate **Manipulation** of information from **Disinformation**, and falsification of information, are sometimes very difficult to draw [274-275]  
 [The best defence for us all is to be alert and question whatever does not ring true. In the absence of truth, rumour and supposition flourish]  
 (1.1;4.31;11.9;13.15/19;14.15/25)
- 11.14 The dissemination of warped and twisted information by Governments, Religion, the Media, or other bodies is **Delusion of the masses** [276]  
 [The mass induction of hatred, bigotry, racialism, ethnic aversion, or immorality, is not the work of the devil, but of ourselves] (11.9;13.10/19;14.15/25;15.33)
- 11.15 **Bewildering opportunity, digitology, volumes, and complexity of data**, are some of the terrors of Information Technology (IT) [276-278]  
 [IT still has much to do to protect its users] (4.24;11.16-18;13.15/19/22;14.17/25-29;15.10)
- 11.16 **Automania** is a craze for using Information Technology without thought of the consequences. It is often an excuse for not using people [279]  
 [Peoples' requests are often read and inadequately handled by computer, without human intervention. The victim is Customer service] (5.17/27/30;11.15/17;14.25)
- 11.17 **Dividing society, Impersonal dominance, Vulnerable systems, and Opportunity for crime**, are charges that IT has still to account for [280-282]  
 [To avoid its darker sides, IT systems need to be continuously checked and reviewed for undesirable effects] (11.15/16/18;14.25)

- 11.18 Many security measures are capable of *Protecting the Good and the bad*. Both honesty and crime may benefit from good security [282]  
 [Threats, risk of attack, costs, inconvenience, and the dual nature of some techniques, have to be carefully evaluated before implementing them] (1.1;4.24;5.1;11.1/15/17)
- 11.19 In some people, there is a strange yearning that draws them into the *Magic and sorcery* of the Occult [283]  
 [Followers of the occult are often persuaded to experiment with—and act on, ill founded, misguided, perverse, and devious, information] (11.20/21)
- 11.20 *Fear and Superstition*, gruesome *Rites and ritual*, and attempts at *Releasing powerful forces* (e.g. voodooism) are all a part of the Occult [284-285]  
 [The instrument that helps and guides occult activities is information] (8.15;11.19)
- 11.21 Belief in *Witchcraft and witches*, was a strange, degrading, and shameful, period in Western history [286]  
 [In all cases, the incriminating evidence against witches was based on false and malicious information] (11.19;14.20)
- 11.22 *Minds possessed, Conducive conditions* for superstition, and fear of *Possession by evil spirits*, gave rise to *The Exorcist* [286-288]  
 [If exorcism teaches us anything, it is that information has power; and like any power, it has to be tamed and controlled] (10.28;15.36)
- 11.23 For the purpose of *Relieving pain and boredom*, people turn to drugs. Drugs are often a first step in misusing information and *Bending the truth* [289-290]  
 [Whether for kicks, relieving boredom, or more ulterior motives, the erratic use of drugs is dangerous. All such uses are “bending” information] (10.31)
- 11.24 The fact that human memory can be so easily influenced by chemicals and drugs seems to give weight to *The microdot connection* [290]  
 [Any interaction of drugs and memory particles would probably cause serious mental confusion] (6.22;10.31)
- 11.25 Physically *Changing the particles* of people’s memory (in the same way as memory is changed in a computer) could lead to the end of our species [291]  
 [People would cease to have minds of their own. Except perhaps for a “ruling elite,” people would be no more than slaves or zombies] (1.17;8.25;11.27)
- 11.26 *The Mind as protector* has so far (with a few near misses) saved us from wildly misusing information and permanent disaster [291]  
 [Despite the mind’s great successes in thinking and reasoning, it has still to pass its greatest challenge i.e. protecting itself from “us”] (4.24;10.26)

- 11.27 Probably, *Nature keeps its secrets* from us until we are able to make use of them safely [291]  
[The horrors that we could perpetrate, by changing people's memory physically are too terrible to contemplate] (6.27;9.1;11.25)
- 11.28 The subconscious is a ghost of the human mind. It is the *Origin of our thoughts*, and [292-293]  
has many *Other connections* with what we do  
[Our subconscious may have answers to many of the questions we are asking about the mystery of life] (1.28)
- 11.29 What on earth are we, and, why do we exist, are *Two eternal questions* to which we [293]  
labour in vain to find the answers  
[It is hard to accept that, while we are on Earth, we may never know the answer to why we are here] (5.2;11.4/30;15.18)
- 11.30 *Are we chosen or are we random?* The 50:50 outcome of so many issues we meet in life [294]  
seems to suggest we too could be random  
[If we are not random; but instead are locked in a contest of goodness against evil, why have we been chosen as the contestants?] (2.17/18;5.2;11.4/29)
- 11.31 *Are we still evolving* If we have evolved from nothing, as some Evolutionists say, we are [294]  
presumably still being fashioned  
[If we are still progressing and improving our species, this at least is a good enough reason to be living] (1.37;5.2/3;8.25)
- 11.32 Whether individually we believe in *Desolation or religion*, the main purpose in all our [295]  
lives can still be to produce *A higher and better existence* for those who are yet to come  
[By not misusing information, and by trying always to move upwards through the hierarchy of "data, information, knowledge, wisdom, and truth," we will have a worthy aim] (1.33;5.32;13.21;15.33/35)

## Chapter 12: Information and the Paranormal

- 12.1 Whenever we talk about *A link with the paranormal*, *A note of caution* is advisable. [297-298]  
Much of our information at such a time is in limbo  
[Lively imaginations can think of the most implausible scenarios. They lead us quickly down paths of amazing incredulity and coincidence] (2.1;10.6)
- 12.2 It could be that sometimes we leave *Memories beyond the body*, like stray data [298]  
sometimes left on audio tape; and occasionally they "come back to life"  
[Both within and outside the body, it may be that microdots of memory are just waiting for suitable signals from a brain in order to be "remembered"]  
(1.17;4.5;6.4;9.1;12.3/8-17)

- 12.3 **Four states of microdot**, Active, Dormant, Descriptive, and Instructional, could possibly be controlled by a **Microdot force** emanating from the brain [299-300]  
 [Just as faint electrical signals (with the help of suitable gear) may be amplified to initiate huge projects, so tiny signals from the brain might be magnified to do things that are yet unimaginable] (1.17;4.4;12.2/16/21)
- 12.4 **Supersense to Supernatural**. Rays and waveforms have no intelligence but like ghosts and people in dreams they move easily through barriers and walls [300]  
 [“Outside forces” are able to change cells in our body and affect the way we think and behave and they do this without our permission or knowledge] (1.17;9.27;12.5)
- 12.5 **Radiation, Radio waves**, and/or **Brain waves** could one day, deliberately or subconsciously, provide **A basis for telepathy** [301-302]  
 [Information seems to reach many creatures in mysterious ways] (1.17/28;12.4/6/24)
- 12.6 Like any conveyor of meaning, **Telepathy requires a carrier** and a model for preparing and sending out data [303]  
 [The Letter “U” in Information Technology could also be a model for Telepathy. It could be a capability we once had but, unlike some creatures, have now lost] (1.17;4.28;10.30;12.5)
- 12.7 Some paranormal **Experiences** are **not easily dismissed**. Occasionally they leave us with an uncomfortable feeling of being derisive [304]  
 [Paranormal phenomena, whether true, false, or distorted, are still information. They are part of life’s mystery. They cry out for explanation] (1.17;12.15)
- 12.8 **Spiritualism** could have an **Explanation in microdot terms**, memory particles could be “released” in the tense and stressful aura of the séance [305]  
 [In the anxious emotion of a séance, information about the departed could be passed to the medium by a kind of osmosis] (1.17;12.2/17)
- 12.9 Although some messages “passed on” at a Spiritualist séance, may seem plausible, they provide **No evidence of discourse with the dead** [306]  
 [“Microdots” left behind in people’s minds, on clothes, or in the home, etc., would not be “live.” They would be messages left over from the past and “remembered again” by matching signals from the medium’s mind] (1.17;12.2)
- 12.10 Some paranormal phenomena (in **Futurology, clairvoyance, and other deeds**) may be due to metaphysical forces we do not yet understand [307]  
 [Mediums, and other operators, are possibly able to elicit information from other people during self imposed trances and concentrated thought] (1.17;10.7;12.2)

- 12.11 In the sceptics view, the *Cause and motivation* behind the reporting of ghosts is to be found mostly in fraud or in ‘phantoms’ of the mind [307]  
[Ghosts are sometimes created only by trickery and fraud. Possibly, as in the story of Flatland, they could exist in another dimension] (1.17;2.22;12.2)
- 12.12 The *Starting point for ghosts* could be some terrible deed when blood was spilled, and memory particles of the victim and others were scattered [308]  
[Possibly someone later (with a perfectly “matching” mind) activates the scattered memory. The ghosts of Auschwitz may have yet to appear] (1.17;6.20;12.2)
- 12.13 *Dormant microdots revived* could be an explanation of *The Ghosts of Roman legions* “seen” by a Yorkshire plumber [309]  
[For centuries, particles of memory may have lain dormant in the bricks and mortar of ancient ruins. Suddenly, by chance, the memories were “re-awakened”]  
(1.17;6.20;9.1;12.2)
- 12.14 “*Microdots disturbed*” could be a reason why some ancestral homes are said to have “haunted” bedrooms, eerie passages, and other fearful areas [310]  
[Reactivated microdots in “haunted” homes would be mere remnants of different peoples’ memory and subject to many different interpretations] (1.17;6.20/26;12.2)
- 12.15 Visions of *The French Revolution, Fotheringhay Church*, and other cases, could be due to ejected microdots actively responding to “matching” minds [310-311]  
[If people are unwilling or afraid to talk about their “visions,” we might never find the explanations we are seeking] (1.17;2.32;6.20;12.2/7)
- 12.16 Tales are told of *Poltergeists and psychokinesis* and *Telekinesis*. If true, some strong and mental psychic energy would be required to transmit and activate the necessary (?microdot) instructions [311-312]  
[Faint signals at the receiving end would need to be amplified by “appropriate equipment,” in much the same way as we do in electronics] (1.17;12.2/3)
- 12.17 Our *Fondness for objects* and old possessions may be increased possibly by microdots that are left lying around, resting on the objects concerned [313]  
[There could be much more in “object appeal” than meets the eye] (1.17;12.2/8)
- 12.18 Near death Experiences, and feelings of *A blissful state*, may be entirely *Within the mind*. Bliss may be the mind’s last “made-up story” [313-314]  
[Alternatively, the end of life could be like a huge electrical power surge before the blowing of a fuse, causing our entire memory to pass by in a flash]  
(1.17/26;4.4;11.3;12.19)

- 12.19 *Microdots and Out of Body Experience* may be caused by microdots taking leave of the body, especially at crucial times [314]  
 [We often say people died peacefully in their sleep; but it could be that, near to death, “private worlds” explode and their microdots are scattered] (1.17;11.3;12.18)
- 12.20 Every death is the *End of a personal world*. Each death may be compared with the end of a star in the heavens [315]  
 [Before gaining their freedom, it is possible that our microdots demonstrate some of their extraordinary powers] (1.8/17;11.3)
- 12.21 *Personal and en masse* experiences (like apparitions and hallucination) might one day be found to have *Microdot connections* [315-316]  
 [Descriptive microdots might produce visions (say of the Madonna), while instructional ones might even interact with the people who watch] (1.17;12.3)
- 12.22 *Inherited features*, aptitudes, skills, and even our personal memories, are possibly built on, and controlled by, memory particles [316]  
 [Even memories once held in our ancestors’ minds may perhaps one day be found; say, in the non coding (Intron) part of our DNA sequence] (1.17;6.6;8.2;10.34;15.5/18)
- 12.23 If personal memory “transfer” were ever feasible, the idea of associating microdots with *Reincarnation* and *Transmigration* might not be unreasonable [317-318]  
 [Although memory transfer may sound plausible, it is impossible to believe that anyone anyone could ever have been a member of another species] (1.17;2.3)
- 12.24 Well known and reputable people claim to have witnessed *Projection of the human body* (i.e. being in two places at the same time) [318]  
 [While projecting the body seems most unlikely; projecting a vision seems possibly more feasible] (1.17;4.28;10.30;12.5)
- 12.25 Before asking whether something is paranormal we need first to ask whether what we are witnessing is *Illusion or reality*. Many reported sightings of UFO’s and aliens, and so on, may be illusion [319]  
 [We see “faces” in the fire, but we know there are no faces there; nor are there ever likely to be] (5.6;9.20;12.26;13.8/11)
- 12.26 In most accounts of seeing or meeting with UFO’s and Aliens, *Human beings are the target* and are seldom in control [319]  
 [Reported communication between Aliens and human is like that between different species. “Visitors from Space” appear to have the upper hand] (12.25)

- 12.27 The possibility of *Communicating by microdot* leads us very quickly into the realms of Science Fiction [320]  
[Even if Science Fiction is implausible, it is still information. It requires a place in any Information study (12.28/29)]
- 12.28 The *Disassembly and re-assembly of matter* is Science Fiction and an intriguing idea [321]  
[Why our minds enjoy such imaginative activity is a mystery] (12.27)
- 12.29 Trying to explain the Paranormal leads us to the *Limits of credulity* [322]  
[Credulity applies not just to the paranormal but to life itself. We just don't know what lies behind life's great mystery. We assume a premise] (12.27;13.1)
- 12.30 Scientists and others encourage us to think of *Black holes and Worm holes* that allow us to make big jumps in space and time [322]  
[The thought that we may one day have a Rapid Transport System across the Cosmos is a pleasing fantasy. We can but dream] (2.12/28)
- 12.31 Our species is continuously *Expanding human powers*, acquiring new information, exploiting new technology, and overcoming physical barriers [323]  
[If our vast information is well managed, and our theories kept within bounds, we can hope to do well. If it is not, cataclysm and oblivion are not impossible] 4.27;8.25)

### Chapter 13: Information and Illusion

- 13.1 We never know what is truly real. We have no alternative but to build and share a *Make believe reality* with others [325]  
[In mathematics we start with a premise; so in life itself, we do the same. We start with illusion] (1.6/23;12.29;13.20/29)
- 13.2 There is an *Absence of proof* in most things; but, in some there is more proof than in others [326]  
[To the extent we recognise illusion, the nearer we are to reality] (13.14/30)
- 13.3 When *Collecting information*, our perceptions are based mostly on what we have collected before [326]  
[It is illusion to believe that we "take in" all that we see. Up to 90% of what we "see" is already a part of us] (1.25)
- 13.4 When *Comparing information*, people's interpretations differ from person to person depending on the background of each [327]  
[Most things are not what they seem, either to us or to others. This is the start of illusion] (1.25;2.32)

- 13.5 At *Work and worship*, the nearest we get to reality is when we know what is not real [329]  
[A belief that all occurrences are “positive” may be overturned by a single “negative,” no matter how many “positives” there have been—Karl Popper] (11.2)
- 13.6 *Optical illusions* may often start by our seeing in two dimensions something that in [330]  
“real” life we know is definitely in three  
[It is difficult for us, living in a Universe of three dimensions, to imagine another Universe that has other than three] (2.22)
- 13.7 *Stubborn minds* (obstinately) refuse to see what is plainly there; or they continue to see [330]  
things that are not there at all  
[The mind accepts its own preconceived ideas of “what is there,” often instead of strong evidence to the contrary] (10.12)
- 13.8 *Wishful thinking, Natural causes, Relative perceptions, and Virtual Reality*, are all [331-332]  
a part of illusion  
[Illusive information reaches us in many forms and in many ways] (2.14;12.25;13.23)
- 13.9 *Linguistics* and *Chosen words* are often reasons *Behind the illusion* [333-334]  
[When language is persuasive enough, whole nations may be moved against all odds to do great things] (3.13/14;11.10)
- 13.10 *Propaganda, Advertising, Absurdity, Celebrities and fashion, Press and the Media, Theatre, Films, Radio, and TV*, all add to our illusions [335-338]  
[Influenced by outside persuasions, our minds often wander into different zones of Time and Space, far removed from the lives we lead] (2.28;11.14)
- 13.11 *Planned and unplanned* fantasy and illusion are a part of growing up. In them we [338-339]  
recognise *The power of the image*  
[Children, and most adults (except perhaps the mentally ill), are able to shake off their illusions as they shake off their dreams] (2.31;3.22;10.2;12.25)
- 13.12 *Escapism*, reveries, and daydreams, can be therapeutic; but, they are not permanent. [340]  
They are illusion. They are still information even if it is not true  
[Truth eludes us most when we diverge from “reality”] (2.31;13.31)
- 13.13 Covering the body, *Dress and behaviour*, are particularly human ways of creating [340]  
illusion and impressions  
[No other creature covers its body to impress others] (5.10;10.13)
- 13.14 People often have a desire to *Return to basics* and be rid of illusion [341]  
[Not to engage in bogus practices, like deception and ostentation, would be a good way to avoid illusion] (13.2/30)

- 13.15 *Phoney finance* and *Invisible assets* are sometimes as intangible and inaccessible to us as the electrons in the systems they use [341-3427]  
[For proof of ownership, people usually prefer something physical]  
(11.13/15;13.16/17)
- 13.16 *Arbitrary evaluations* are a questionable way of doing business [343]  
[As Omar Khayam expounds, one wonders what the vintners buy one half as precious as the goods they sell?] (13.15)
- 13.17 A *Stock Exchange Nightmare* is usually built on illusion, rumour, and gossip. Panic results from fallacious information [343]  
[Disaster need not strike but often, because of illusion, it does] (13.15)
- 13.18 *Our idea of self* is an illusion of what we want to be. Our illusions are often shattered, and sometimes to our advantage [344]  
[A perverse feature of life is that we often learn best from misfortune] (1.6)
- 13.19 *Politics, Medicine, Law, And Society* all suffer abuse because of illusion [345-346]  
[By misusing information, people create illusion and untruth] (11.13-15)
- 13.20 *In every land*, from the beginning of time, people have pondered the mystery of life. All of us reason, imagine, and create illusions [347]  
[Life is an incomprehensible journey, and illusion an important prop that helps us along the way] (13.1/21)
- 13.21 *To fill the void* and *To prove the reality* of life many people find invaluable support in religion [348]  
[The miracle of life, for many people, is proof enough of the Divine]  
(11.32; 13.20; 15.33)
- 13.22 We often have *Feelings of power* when Information Technology, *Unseen and as if by magic*, seems to solve our problems [349]  
[People often believe, all too readily, that technology is right. The outcome is not always so. Truth can be both illusive and elusive] (11.15)
- 13.23 *Virtual experience*, is the brainchild of Information Technology. Some virtual experiences are edifying, but they are still undiluted illusion [350]  
[Bodily sensations (including sexual ones) created by virtual experience are unpredictable and can be harmful] (2.5/14;13.8)
- 13.24 In all that we think, believe, and do, there is a *Wonder that drives us all* [350]  
[Each of us are often both victor and victim as a result of information's great wonder. It is a wonder without boundaries] (1.1; 15.27)

- 13.25 *Illusions, natural and contrived* are always with us. Contrived illusion, however well intended, plays deliberate tricks on our senses [351]  
[There comes a time to stop or, at least, a time to pause and reflect] (10.13)
- 13.26 *The wonder of Art* is not illusion but, it is helped by illusion [352]  
[Art is a mirror of life. Through art, we visualise and dream. Our lives may take on a different meaning as we take its lessons to heart] (10.33;13.27)
- 13.27 Both *Art and Philosophy* address life's problems. Some latter day philosophers even say that art and philosophy are the same. [352]  
[Shakespeare's beautiful language is Art. Philosophically, too, his works deal brilliantly with the human predicament. Information is at the root of it all] (13.26)
- 13.28 One's own inner life is possibly the *Greatest illusion of all* [353]  
[In the great scheme of things, everything could be illusion] (1.28;11.4;13.29)
- 13.29 Whatever answers we find to "*Who we are*" and "Why life should be," we always come back to yet one more illusion [353]  
[All our answers to the puzzle of life have to start with an assumption] (2.20;11.4;13.1/28)
- 13.30 By recognising *Degrees of illusion*, and ridding ourselves of bogus beliefs, we may at least have a way of approaching "reality" [354]  
[The more we recognise the trivial trappings of illusion the more likely we may find something worthwhile] (13.2/14)
- 13.31 Whatever illusions we have, we always return eventually to *Real living*. What ever "real living" is, we cannot escape it [354]  
[Reality can only be found by accepting genuine information, and using it with all the skills of reasoning, logic, and presentation, we can muster] (13.12)

#### Chapter 14: Information and Society

- 14.1 Information is Society's *Most precious possession*. It is the sum of all its members' memory, consciousness, and understanding [355]  
[Information enables people to live, and Society to function] (1.1/3/36;3.26;15.36)
- 14.2 Nobody lives alone, and *No man is an island* said *John Donne* [355]  
[In Society, millions and millions of minds are linked together; and the most important link that connects them is information] (3.26;14.18/19)
- 14.3 *Information for an ideal Society* is when it is *Owned by everyone* [356]  
[Society's information is best when it is a common possession] (1.36;3.26)

- 14.4 Rarity adds value to most things, and this often leads us to *Temptations of secrecy*. [357]  
Information is no exception  
[People often see advantages in keeping information to themselves] (3.26)
- 14.5 *Simply to live*, during *School days*, *Student days*, *Adulthood*, or, *Whatever one's age*, [357-360]  
to have information is a lifetime need  
[Information is a gift of life; we should accept it with due humility] (3.26;11.5/6)
- 14.6 All creatures have an innate tendency *To be led and to lead*, i.e. to obey and to [361]  
command  
[The modern day barons of Society are the officials in authority who make  
decisions and direct us. Their instrument of power is Information] (3.26;11.6;14.7)
- 14.7 The force that moves nations is people, but the force that moves people is a desire [361]  
to protect their *Position, Pay, and Pension* (PPP)  
[Peoples' concerns are mostly survival, prosperity, and power. Personal desires  
greatly influence the decisions that people make] (3.26;5.10;11.10;14.6/8/12;15.16)
- 14.8 *Greedy motivations* and *Selfless acts* occur frequently throughout society [362]  
[Society's most saving graces are the generous and unselfish deeds of of its people]  
(3.26;10.33;14.7/31)
- 14.9 *Competing voices and influence* are opposing strengths and weaknesses in a democracy [363]  
[If people in a democracy are too concerned with personal money, wealth, and power,  
it is no longer a democracy. It is a plutocracy] (3.26;14.10)
- 14.10 In a successful democracy, there is *Always an opposition. Every issue is a contest* [363-364]  
[Contrary views are encouraged. Opinions often appear to have a connection with  
the random 50:50 divisive phenomenon in nature (2.18;3.26;11.5/10;14.9)
- 14.11 As a way of achieving the best for society, *Voting is not infallible*. Large and small [364]  
majorities both have their dangers  
[Large majorities can lead to ruthlessness, and ill considered haste; small majorities  
may bring indecision, timidity and delay] (3.26)
- 14.12 The most important ingredients of democracy are the *Fitness of officials* and the [365]  
*Will of the people*  
[In a parliamentary democracy, competent officials are expected to work and vote  
for what they believe is the wish of most of their constituents] (3.26;14.7)

- 14.13 *“Free expression unparalleled”* is a welcome freshness, but *Tempering exuberance* and *Keeping reports in balance* are also essential [366-367]  
 [Meanings and impressions depend on the choice of words and the images portrayed. Very seldom can anyone report absolute truths] (3.26;14.26)
- 14.14 Privacy is *A basic human right*. It is the right to be let alone and to keep one’s own information to oneself [368]  
 [Privacy is not a right we can automatically depend on. Intrusive, almost imperceptible, ways of prying into private lives are usually available] (3.26)
- 14.15 *Political correctness*, and timidity of expression for fear of offending, emasculates language and inhibits lively expression [368]  
 [Restraint in what we say should come from within us. It is wrong for law or religion to legislate on people’s choice of words] (1.15;3.26;11.8/9/11-14)
- 14.16 Censorship has an important role in *Public Safety*, but it is important to avoid creating a *Nanny state mentality* [369]  
 [Society’s role is to debate issues, invite peoples’ views, and to ensure they are taken into account, but it is not to over protect its members] (3.26;14.17)
- 14.17 All creatures possibly have a voyeuristic streak but *The human voyeur* gawking at celebrities or the intimacy of others, is a menace [370]  
 [Society needs protection from voyeurism that new IT encourages; but Nanny State laws are not the answer] (3.26;11.15;14.16)
- 14.18 Surveillance and a *Continuous watch* on the environment, are measures to be welcomed; but not if they lead to a *Big brother* State [370-371]  
 [Surveillance, especially by New technology, may improve conditions in a community, but it can also lead to an over bearing and faceless society] (3.26;14.2/26)
- 14.19 *Personal id’s and controls* (particularly the use of biometrics) are the epitome of the good and the bad in information [371]  
 [It is a dreadful thought that we may all one day be implanted at birth with an electronic id] (3.20/26;5.17;14.2)
- 14.20 *An index of a country’s civilisation* is its penal code [372]  
 [Harsh punishment indicates that something is wrong with the society that inflicts it. If rules are too permissive society becomes unstable and uncaring] (3.26;11.21)
- 14.21 Correctly *Assessing guilt* depends on collecting and presenting information fairly without fear or favour to anyone [373]  
 [We have no absolute truth to turn to. We usually have to depend on the information, knowledge, and wisdom, of those who decide for us] (1.33/38;3.26;14.22)

- 14.22 The *Effect of emotion* aroused by a crime is sometimes as traumatic for the general public as it is for the victims of crime [373]  
 [Emotion that arises from crime, as with all emotion, is a testing time for reason. There is never a case for retribution outside the law] (1.33/34;3.26;14.21/32)
- 14.23 Opinion on *Punishing body or mind* for crime has changed over the ages [374]  
 [Civilised society has an unenviable duty to perform. Perhaps, one day, offenders may be given a choice as to which punishment to submit to] (3.26)
- 14.24 Possibly somewhere within each of us there are *Admonitory microdots* that warn us of the consequences of what we are about to do [375]  
 [Admonitory microdots could be part of the “unshakeable” data which in all of us influence our thoughts and actions] (1.15,3.26;8.11)
- 14.25 The “*Information Society*” brings with it great *Opportunity and dangers* [375]  
 [New IT especially is causing a Sea change in all that Society does] (3.26;11.13-17)
- 14.26 *Populism* and *Anonymity*, are opposing consequences of using IT. Both are of serious concern [376-377]  
 [Populism in IT may stir up public emotions far too easily. Anonymity leads to unaccountable action, faceless officials, and impersonal decisions] (3.26;11.15;14.13/18)
- 14.27 Without *Electronic adjuncts* at their fingertips some people feel they are mentally deprived [377]  
 [Soon it may become difficult to think without having electronics nearby and being familiar with IT’s curiously new language and terms] (3.26;11.15)
- 14.28 Prior to IT, we had time to “think again.” Now, IT is so fast, it is harder to benefit from the *Value of second thoughts*. [378]  
 [More IT systems should have built-in time delays that would allow for a change of mind. Second thoughts may often prevent a tragedy] (1.14;3.26;11.15)
- 14.29 Because of IT, we are becoming *A Changing species*. By one means or another we are becoming virtually telepathic [378]  
 [What other species (e.g. ants & termites) have achieved through evolution, we may be doing with IT. Individually, IT could make us more docile] (1.37;3.26;4.27;5.3/7;8.25;11.15)
- 14.30 The implications of doing *Genetic research* show how important it is for Society to be *Arbitrating on issues* of the day. [379-380]  
 [Debate provides a useful period of grace before starting radical research; but, in the end, research may never be stopped completely] (1.36;3.26)

- 14.31 In the Ideal Society, *Traditional values still count*—and always will [380]  
[Only if we ask “what can we do for Society, and not what can Society do for us,”  
will Society measure up to all the issues that are emerging] (3.26;14.8)
- 14.32 *Society’s first mission is to reason*. To have information, and the ability to reason with [382]  
it impartially, is one of the greatest gifts we have  
[Having to wrestle with huge volumes of information could be Society’s biggest  
challenge] (3.26;5.12;11.10;14.22;15.35)

### Chapter 15: Information and the Human Condition

- 15.1 *Information is Existence*, or at least is very near to it; but why there is such a thing as [383]  
existence, we do not know  
[Scientists tell us Existence began with the Big Bang. Believers in the Divine say  
that God has always existed; we don’t need any Big Bang to explain it]  
(1.1;15.34/35)
- 15.2 *Reality and Unreality* depend on information and the meaning that our minds derive [384]  
from it  
[The range and scope of information that we deal with is infinite. It comes to us on  
any subject from all directions, and often by chance] (2.32;15.6)
- 15.3 There is Art in *Simplicity*, in keeping information tidy and in good order [384]  
[Simplicity simplifies problems. If our information is complicated, so are our minds  
and lives] (3.3;3.12;4.25;15.13)
- 15.4 There is an *Infinity of What’s and Why’s, And Many other questions* about life and [385]  
its purpose  
[Although we may never know what absolute truth is, there are many questions  
about existence that we look to philosophy to answer] (11.4;15.29/35)
- 15.5 Information is our *Be all and End all*. In the beginning was the *Word*; and for us that [386]  
is in our DNA molecules  
[We did not choose to be born, or where we were born; but, once we are here, we  
are at the whim and mercy of information] (1.2;12.22;15.7/18)
- 15.6 *Existence is through the mind*. Only through a human mind, somewhere, somehow, [386]  
can we know that something (and even ourselves) “exist”  
[Just as “the observer” has a vital role in modern theoretical physics, so a human  
mind is the vital observer in vouching that something exists;] (2.32;15.2)

- 15.7 The three most awesome sets of *“Collective information”* in recent times are arguably [387]  
Nuclear power, DNA, and Information Technology  
[Information Technology is most important because it subsumes the rest. It is the  
“word” that makes the others possible] (1.2;15.5)
- 15.8 *Personal Information*, for the persons most concerned, may be as awesome and [388]  
devastating as a nuclear bomb is to the community at large  
[We may try to avoid information, modify it, and use it to advantage; but, we can  
never completely ignore or remove it] (1.13;10.24/34)
- 15.9 Information Technology has brought about an *Amazing stampede* to acquire [388-389]  
information. It has inspired periods of *Unstoppable invention*  
[If our eminent philosophers of the past had had access to today’s technology, we can  
only wonder what they would have said] (1.18/38)
- 15.10 An IT world is not yet Utopia. *Regrettable impatience*, and having *No escape from* [389-390]  
*contact* (wherever we happen to be), are among its flaws  
[Information at the touch of a button is not an unmitigated blessing. The magic of  
distance that we felt as children has gone for ever] (4.8;10.33;11.15)
- 15.11 *To know or not to know* is not an option; *The curious mind* still prevails [391-392]  
[To take in information is as vital to us as the air we breathe] (5.25;8.14)
- 15.12 *Macro and micro worlds* refer to our everyday large-scale (macro) actions and the tiny [392]  
(micro) actions that lie behind them  
[While specialists may study microscopic detail, ordinary people think and act only  
on a macroscopic scale; or they would never achieve anything] (4.7)
- 15.13 *Honesty and correctness* of information are not to be taken for granted [393]  
[To be a victim of wrong information can be as disastrous as running into a hidden  
obstacle or falling into a hole in the road] (3.12;15.3)
- 15.14 Our body and mind not only “talk” to each other; they are inseparable. There is every [394]  
reason for them to be *Working together*.  
[Harmony of Mind and body is essential for health and stability in all our lives.  
Mind and body interact with all parts of our being] (10.2/21)
- 15.15 The idea of looking at *Memory as particles of matter* (microdots) is fully consistent [394]  
with there being a close relationship between mind and body  
[Memory particles may be connected with mind and body in many ways; they may  
even lie between atoms of matter, even within our own body] (1.17;10.2/21;15.31)

- 15.16 ***Building up intelligence*** possibly starts with chemical reactions that by their nature are trying to keep things stable and in balance [395]  
[In living organisms, intelligence possibly begins with an instinct for a safe and steady state in which to survive and reproduce] (5.10/20;8.3;14.7)
- 15.17 ***Self identity*** and ***Conscience*** develop from a total knowledge of oneself, one's sensitivities, and one's innermost thoughts [396]  
[If our conscience is satisfied we are usually content; if it is not, we often feel guilty, edgy, and moody] (3.24;4.10;5.21-23;11.9)
- 15.18 We may never know the answers to ***What are we?*** and ***Who are we?*** [397]  
[Everybody is unique. Sometimes we seem to be just puppets dancing up and down on "***strings***" of probability and chance] (5.2;11.29;12.22;15.5/35)
- 15.19 Emotion is a Product of the Mind and an expression of likes and dislikes [398]  
[Emotion creates electrical like energy that keep us alive. It may be the main reason we are here at all. Without emotion we would be nothing]  
(1.9;4.4/10;5.24;10.20;15.20-22)
- 15.20 Emotion has ***No limit to its scope***, or what it prompts us to do. It often seems to bypass the normal checks and balances of the mind [398]  
[Emotion can sometimes feel as if it is revolving wildly around in the pit of our stomach, completely avoiding the brain] (5.24;10.20;15.19)
- 15.21 ***The better side*** and ***The bad side*** of emotion are ways of displaying personal tension and "letting off steam" [399]  
[Emotion out of control is like steam pushing up the lid of a kettle of boiling water; and every bit as dangerous] (5.24;10.20;15.19)
- 15.22 ***Emotion in computers***, as we feel emotion, is difficult to imagine. Computers can never know, ***biologically***, exactly how people "***feel***" [400]  
[A vivid portrayal of feelings on a computer screen does not mean that computers can, or will ever, "***really understand***" what we mean by emotion] (4.10;5.4/24;15.19)
- 15.23 Dreams and the subconscious are great mysteries of our being. We have ***Much to discover*** about them [400]  
[Dreams and our subconscious often talk to us; but they do this only in ways that are strange to us and far from certain] (1.28;9.2)
- 15.24 Dreams are ***Imagination at work***. If there is ever any "real" meaning in dreams it is conveyed in a ***Language of inference*** [401-402]  
[To know and understand why and how we dream would help us to understand how our minds work and handle information] (3.14;8.18;9.2/7/16)

- 15.25 Dreams have a marked *Effect on our well being* and mood [402]  
 [Even when we don't remember a dream, it may well have an effect on how we feel,  
 —on our happiness as well as our ill temper and depressions] (9.2/31)
- 15.26 When we are in a subconscious state, we are *Not at all unconscious* The mind still [403]  
 provides *Vital support for all we do*.  
 [When unconscious, we are “dead to the world.” When subconscious, our mind  
 and body function normally. We can soon return to the conscious state] (1.28;7.6)
- 15.27 Rather than fear our subconscious, we should *Enjoy the wonder* [404]  
 [It could be that our subconscious is the elusive “we” or “us,” with whom we carry  
 out so many varied and intimate “conversations”] (1.28;13.24)
- 15.28 Human *Memory is far from infallible*. *DNA's great test* has already begun. In VR, our [405-407]  
*Experiences* are *less than real*. In Science Fiction, we imagine *Other life forms* and  
*Materialised Intelligence*. All of them add up to human uncertainty  
 [All information shapes our beliefs, whether it is in the form of memory, thought,  
 imagination, emotion, intelligence, or anything else,] (1.30/35;2.14)
- 15.29 Philosophy is the “political wing” of Science and Maths. All three fields are [407]  
 concerned with the *what's, how's, and why's*, of existence  
 [Philosophy, more than Science and Mathematics, tries to find the answer to Why  
 we are here at all. This is the one great “Why” with a capital “W”] (11.4;15.4/35)
- 15.30 *Zero and Infinity* are valuable symbols and concepts in Science and Mathematics, [408]  
 but their true meanings still perplex us  
 [Remarkable theories now being developed on “strings” and “zero point fields” may  
 one day help us to understand more clearly many of today's great mysteries] (2.25)
- 15.31 Possibly there is *A fourth dimension* in the space between atoms of matter [409]  
 [In volume, the space between atoms of matter is at least equal to all the mass in the  
 Universe. It is the space that provides us with speed of light communication by Radio,  
 TV, the Internet, and Mobile telephones] (2.22;15.32)
- 15.32 The *Effects of an extra dimension*, if ever it was found, would be far reaching. A fourth [409]  
 dimension could well be the home of “memory particles”  
 [A fourth dimension could have connections with dreams, mental illness, illusions,  
 visions, ghosts, paranormal experiences, and even global warming] (1.17;2.22;7.3;15.31)
- 15.33 Religious Faith, for many people who are *Looking for answers*, is indisputably a pillar [410]  
 of strength  
 [Evolutionists have opposing views, but people with Faith have no difficulty in  
 answering the one great question of, Why we are here] (5.2;11.14/32;13.21;15.35)

- 15.34 By *Assuming free will* in life, we have everything to gain and nothing to lose. Without [411]  
free will in what we do, there would be no point to anything  
[In religion, Free will is an essential tenet. For all the terrible atrocities that people  
commit, the Supreme Being is absolved from blame] (5.12;15.1)
- 15.35 Learning our lessons and Finding purpose to life is possible only by facing up to [411-412]  
the infinite mass of information that confronts us  
[The ultimate answer to “Why are we here?” is less important, than leaving the  
Universe a safer and happier place than we found it] (5.2;11.4/32;14.32;15.1/4/18/29/33)
- 15.36 *Our most important possession* is information. It is the sum of all we are and are not. [412]  
It underpins us and it undermines us  
[We are at information’s mercy. We have no alternative but to try to control it, and to  
pass it on to our descendants, never ashamed of it; and never to waver]  
(1.1;8.1;11.22;14.1)