

# 1 *Teach Yourself to Think*

2 (by [Edward de Bono](#))

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## 16 *Why?*

17 I breathe.

18 I walk.

19 I talk.

20 I think.

21 I do not have to think about these things, so why should I think about thinking?

22 Thinking is natural.

23 You pick it up as you go along.

24 Intelligent people can think without having to learn to think.

25 Other people cannot think no matter what they do.

26 What is wrong with that view?

## 27 *Because...*

28 Because thinking is the most fundamental human skill.

29 Because your skill in thinking will determine your happiness and your success in life.

30 Because you need thinking to make plans, take initiatives, solve problems, open up opportunities and design your way forward.

31 Because without the ability to think you are like a cork floating along on a stream with no control over its destiny.

32 Because thinking is fun and enjoyable – if you learn how to make it so.

33 Because thinking and intelligence are quite separate.

34 Intelligence is like the horsepower of a car.

35 Thinking is like the skill of the car driver.

36 Many highly intelligent people are poor thinkers and get caught in the 'intelligence trap'.

37 Many less intelligent people have developed a high degree of skill in thinking.

38 Because thinking is a skill that can be learned, practiced and developed.

39 But you have to want to develop that skill.

40 You need to learn how to ride a bicycle or drive a car.

41 Because traditional education at school and university only teach one aspect of thinking.

42 ***What about feelings and values?***

43 You may believe that feelings and values are the most important things in life.<sup>xxx</sup>

44 You are right.<sup>xxx</sup>

45 That is why thinking is so very important.<sup>xxx</sup>

46 The purpose of thinking is to deliver to you the values you seek just as the purpose of a bicycle is to get you to where you want to go.

47 A bicycle uses less energy; gets you there faster and allows you to go much further.

48 So thinking allows you to enjoy your values more effectively.<sup>xxx</sup>

49 You are locked in a room.

50 You desperately want to get out.

51 You want freedom.

52 Your feelings are very strong.

53 Which is the more useful, this very strong feeling or a key to the lock?<sup>xxx</sup>

54 Feelings without the means to carry them out are not much good.

55 At the same time, the key without the desire to leave the room is also not much good.<sup>xxx</sup>

56 We need values, feelings and thinking.

57 Feeling is no substitute for thinking.

58 Thinking without values is aimless.<sup>xxx</sup>

59 This book is about thinking.

60 Values and feelings are equally important but insufficient without thinking.

# 61 Foreword

## 62 *A Simple Approach*

63 In writing this book I had to choose between writing a complicated and comprehensive book which would cover all aspects of thinking and writing a much simpler and more accessible book.

64 In the end, the decision was made by the title of the book: Teach Yourself to Think.

65 This was to be a book for anyone who was interested in further developing his or her skill in thinking.

66 Few people would be interested in picking up or reading through a complicated book.

67 So I have chosen to keep it simple and practical.<sup>xxx</sup>

68 I know from experience that some commentators are terribly upset by simplicity.

69 Such people feel that something simple cannot be serious.

70 Such people are also frightened of simplicity because it threatens the complexity which it is their job to explain.

71 If something is indeed simple then they are without a job.<sup>xxx</sup>

72 My preference has always been for simplicity.

73 I have always sought to make things as simple as possible.

74 That is why the thinking 'tools' that I designed have been taught equally to six-year-olds in rural black schools in South Africa and to the top executives of the world's largest corporations.<sup>xxx</sup>

75 The very widely used Six Thinking Hats framework is very simple in principle but very powerful in use.

76 The framework provides a practical alternative to the traditional argument system that has been in use for 2,500 years.

77 That is why this framework is now being taken up both in education and in business and government areas.<sup>xxx</sup>

78 The L-Game was invented as a result of a challenge by a famous Cambridge mathematician, Professor Littlewood, to invent a game in which each player had only one playing piece.

79 The game has now been analyzed on computer and is a 'real game' (no winning strategy which the first player could use).

80 I recently invented an even simpler game, The Three-spot Game.<sup>xxx</sup>

81 Above all, simplicity is easy to learn and to use.<sup>xxx</sup>

## 82 *Who will be the readers of this book?*

83 Over the years I have written many books on thinking and it is impossible to predict who the readers will be.

84 The letters I have received suggest that the readers range very widely indeed.

85 The common thread is motivation and an interest in thinking.

86 I believe that the mass media (TV, radio and press) seriously underestimate the intelligence of the mass market and believe that this market only wants fun and moment-to-moment distraction.

87 That has not been my experience.

88 ***There are people who are very complacent about their thinking.***

89 Such people believe they have nothing to learn.

90 They usually win arguments and believe there is nothing further to thinking than having and defending a point of view;...

91 There are people who are highly intelligent and do not make mistakes in their thinking.

92 They believe that intelligence is enough and that thinking without mistakes is good thinking....

93 There are people who have given up on thinking.

94 They have not done particularly well at school and they are no good at solving 'puzzles'.

95 So they come to believe that thinking is not for them.

96 They are content to get by, day to day, as best they can....

97 Complacency is the enemy of all progress.

98 So is resignation.

99 If you believe you are perfect, then you make no effort to get better.

100 If you have given up, you also make no effort....

101 This book is directed at those who feel that thinking is an everyday, practical, messy and confusing matter.

102 They want to improve their thinking in order to make it simpler and more effective.

103 They want to have thinking as a skill which they can direct to any matter they choose.

# Introduction

*I advise you to skip this section.*

It is rather more complicated than the rest of the book and may give you the wrong impression about the rest of the book.<sup>...</sup>

For some readers, however, I need to include this section to point out why our traditional thinking habits are excellent but inadequate.<sup>...</sup>

The rear wheels of a motor car are excellent but inadequate on their own.<sup>...</sup>

We have developed one aspect of thinking and we are very proud of this and very happy with this.

It is time we realized that this aspect is excellent but inadequate.<sup>...</sup>

This introduction is also necessary to frame the rest of the book.

Imagine a kitchen in which a lot of food is piled up on a table in the centre of the room.

The cook proceeds to cook or 'process' the food.

The cook is very skillful and makes a good job of it.

There are no mistakes in the cooking.<sup>...</sup>

Then we ask: how was this food chosen; how was it grown; how was it packaged; how was it brought to the kitchen?

In other words we shift attention from the cooking process to the ingredients themselves.<sup>...</sup>

It has been the same with thinking.

We have paid a lot of attention to the 'processing' part of thinking.

We have developed excellent mathematics, statistics, computers and all the various forms of logic.

You feed in the ingredients, the processing takes place and out comes the result.

But we have paid far less attention to where the ingredients come from.

How were they chosen and how were they packaged?

The ingredients for thinking are provided by perception.

Perception is the way we look at the world.

Perception is the way we carve up the world into chunks that we can handle.

Perception is the choice of matters to consider at any one time.

Perception chooses whether to regard a glass as half empty or half full.

Most of everyday thinking takes place in the perception stage of thinking.

It is only in technical matters that we apply such processes as mathematics.<sup>...</sup>

In the future, computers will probably take over all the processing aspects of thinking, leaving to humans the extremely important aspect of perception. (See the manager and the moron)<sup>...</sup>

132 The excellence of processing in computers will not make up for inadequacies  
in perception.<sup>xxx</sup>

133 So the perception part of thinking will be even more important in the future.  
<sup>xxx</sup>

134 Most of the errors of thinking, outside puzzles, are not errors of logic at all  
but errors of perception.

135 We see only part of a situation.

136 Or, we see a situation only in one particular way.<sup>xxx</sup>

137 Yet we have persisted in believing that logic is the most important part of  
thinking and have done almost nothing about perception.

138 There are reasons for this.<sup>xxx</sup>

139 When Western thinking habits were being established at the end of the Dark  
Ages and the beginning of the Renaissance, much of the thinking was being  
done by church people, since they were the only group that had maintained  
throughout the<sup>xxx</sup>

140 Dark Ages an interest in scholarship and thinking.

141 Also, at that time, the church was very dominant in society and ran  
universities, schools, etc.

142 So the 'new thinking' that came in with the Renaissance was mainly applied  
to theological matters and to dealing with heresies.

143 In such areas there were tight definitions of 'God', 'justice' and such matters.

144 It became a matter of working 'logically' with such fixed definitions.

145 So perception was not an important part of this sort of thinking.

146 Perception was also far too subjective in such theological matters.

147 There had to be basic agreement on the starting terms.<sup>xxx</sup>

148 We have also believed that logic itself should be able to sort out  
perceptions.

149 This is rubbish because logic is an enclosing system which can only work  
with what is there.

150 Perception is a generative system which opens up to what is not there.

151 This misconception about the power of logic is one of the major faults of  
traditional thinking.

152 The misconception arises from the failure to distinguish between foresight  
and hindsight.<sup>xxx</sup>

153 It is perfectly true that in hindsight logic can point out inadequacies in  
perception but that is not the same as pointing out these inadequacies in the  
first place.<sup>xxx</sup>

154 Every valued creative idea will always be totally logical in hindsight.<sup>xxx</sup>

155 The numbers 1 to 100 can be added together in about five seconds using an  
idea that is completely logical in hindsight – but getting to that idea needs  
creativity.<sup>xxx</sup>

156 What are the chances of an ant on the trunk of a tree getting to one  
particular leaf?

157 At every branch point the chances diminish because the ant might have taken one of the other branches.

158 In an average tree the chances are about 1 in 8,000.

159 Now imagine the ant sitting on that leaf.

160 What are the chances of that ant getting to the trunk of the tree?

161 The chances are 1 in 1 or 100 per cent.

162 If the ant simply goes forwards and never doubles back there are no branches.

163 It is exactly the same with hindsight.™

164 What is obvious in hindsight may be invisible in foresight.

165 The failure to realize this is responsible for many of our misconceptions about thinking.™

166 Perhaps the main reason why we have not paid more attention to perception is that until about twenty years ago we had no idea how perception worked.

167 We believed, quite wrongly, that perception and processing both worked in passive-surface information systems.

168 In such systems the information and the surface on which the information is recorded are passive and have no activity of their own.

169 There is a need for an external processor to organize the information, to move it around and to extract sense from it.

170 We now believe that perception occurs in a self-organizing information system operated by the nerve networks in the brain.

171 This means that the information and the surface have their own activity and the information arranges itself as groups, sequences and patterns.

172 The process is similar to rain falling on a landscape and organizing itself into streams, tributaries and rivers.

173 Those interested in such processes should read my books *The Mechanism of Mind\** and *I am Right - You are Wrong*. Jonathan Cape, 1969, Penguin Books, 1977. †Viking, 1992; Penguin Books, 1993.™

174 **The Gang of Three**

175 After the fall of Rome in AD 400 there came the Dark Ages in Europe.

176 The learning, thinking and scholarship of the Roman Empire was largely lost.

177 For example, Charlemagne, who at one time was the most powerful ruler in Europe, could not read or write.

178 The Dark Ages ended with the Renaissance, which was triggered by the rediscovery of classic Greek and Roman thinking (partly through Arabic texts coming into Europe through Spain).™

179 This 'new' thinking was a powerful breath of fresh air.

180 Humankind was given a more central position in the universe.

181 Humankind could use logic and reason to work things out instead of having to accept everything as part of a religious faith.



182 Not surprisingly this new thinking was eagerly embraced by the Humanists  
or nonchurch thinkers.

183 More surprisingly, this new thinking was also embraced by church thinkers.

184 So this new/old thinking became the dominant thinking of Western culture  
and has remained so to this day.<sup>xxx</sup>

185 What was the nature of this new/old thinking?

186 We need to go back to the Gang of Three who fashioned this thinking.

187 They lived in Greece in Athens between about 400 DC and 300 BC.

188 This Gang of Three was made up of Socrates, Plato and Aristotle.

### 189 ***Socrates***

190 Socrates never set out to be a constructive thinker.

191 His purpose was to attack and to remove 'rubbish'.

192 Most of the arguments in which he was involved (as written up by Plato)  
ended with no positive outcome at all.

193 Socrates would show that all suggestions offered were false but would not  
then offer a better idea.

194 Essentially he believed in argument (or dialectic).

195 He seemed to believe that if you attacked what is wrong, then eventually you  
would be left with the truth.

196 This has left us with our obsession with criticism.

197 We believe that it is much more important to point out what is wrong than to  
construct what is useful.

### 198 ***Plato***

199 Plato was an Athenian patrician who, as a young man, knew Socrates.

200 Socrates never wrote anything but Plato wrote up Socrates as a character in  
dialogues.

201 Plato did not much believe in Athenian democracy, which he believed to be  
a rabble too easily swayed by populist arguments.

202 Plato seemed to be an admirer of the very fascist Sparta.

203 Plato was influenced by Pythagoras, who had demonstrated ultimate truths  
in mathematics, and Plato believed there were ultimate truths everywhere if  
only we looked hard enough for them.<sup>xxx</sup>

204 Plato was also reacting against the 'relativism' of some of the Sophists, who  
believed that something was not good or bad in itself but only in relation to  
a system.

205 Plato realized that society could never be run on such a complicated basis.

206 Plato was a fascist.<sup>xxx</sup>

207 From Plato came our obsession with the 'truth' and the belief that we could  
establish this logically.

208 This belief has been a powerful motivator to all subsequent thinking.

### 209 ***Aristotle***

210 Aristotle was a pupil of Plato's and also the tutor of Alexander the Great.

211 Aristotle tied everything together as a powerful logical system based on 'boxes'.

212 These were definitions or classifications based on our past experience.

213 So whenever we encountered something we had to 'judge' into which box that thing fitted.

214 If necessary, we analyzed the situation down into smaller parts to see if we could fit these into standard boxes.

215 Something was either in a box or 'not' in. lox.

216 It had to be one or the other and could not be anything else.

217 From this came a powerful logic system based on 'is' and 'is not' and the avoidance of contradictions.<sup>xxx</sup>

218 In summary, from the Gang of Three came a thinking system which was based on:

- 219 • analysis
- 220 • judgement (and boxes)
- 221 • argument
- 222 • criticism.

223 We find our way around by fitting new experiences into the boxes (or principles) derived from the past.

224 This is perfectly adequate in a stable world where the future is the same as the past—but totally inadequate in a changing world where the old boxes do not apply.

225 Instead of judgement we need to design our way forward.

226 While analysis does solve a great many problems, there are other problems where the cause cannot be found and if found cannot be removed.

227 Such problems will not yield to yet more analysis.<sup>xxx</sup>

228 There is a need for design.

229 We need to design a way forward, leaving the cause in place.<sup>xxx</sup>

230 Most of the major problems in the world will not be solved by yet more analysis.

231 There is a need for creative design.<sup>xxx</sup>

232 The traditional thinking system is very lacking in constructive energy, creative energy and design energy.<sup>xxx</sup>

233 Description and analysis are not enough.<sup>xxx</sup>

234 If this traditional system is indeed so limited, then how is it that Western culture has made such tremendous progress in science and technology?

235 Plato's search for the truth has been a prime motivating factor.

236 Aristotle's classification has also helped.

237 Socratic questioning and attack has played a part.

238 But by far the most important factor has been the possibility system.

239 This is an immensely important part of thinking.

240 The possibility system gives hypotheses in science and visions in technology.

241 That is what has driven Western achievement.

242 Chinese culture, which was far ahead of Western technical culture two thousand years ago, came to a halt because they moved into description and never developed the possibility system.

243 Even today in schools and universities very little attention is given to the 'possibility' system, which is so very important a part of thinking.

244 This is because there is the belief that thinking is all about the 'truth' and 'possibility' is not truth.

245 Later in this book I intend to give a lot of attention to the possibility system because it is so very important.

246 Argument is a rather poor way of exploring a subject because each side soon becomes interested only in winning the argument rather than in exploring the subject.

247 At best there might be a synthesis of thesis (one side) with antithesis (the other side) to give a synthesis, but this is only one possibility amongst many which would otherwise have been designed.<sup>xxx</sup>

248 Instead of argument we can have parallel thinking

249 (\*Parallel Thinking Viking, 1964) in which all parties seek, in parallel, to explore the subject (for example with the Six Hat framework -- Six Thinking Hats, Penguin Books, 1985.<sup>xxx</sup>

250 So we have a traditional thinking system which is excellent as far as it goes but inadequate for the following reasons:

251 1. It does not adequately deal with 'perception', which is by far the most important part of thinking in everyday affairs.

252 2. Argument is a poor way of exploring a subject and sets up unnecessary adversarial positions.

253 3. The 'boxes' derived from the past may not be adequate to deal with a changing world, which is very different from the past.

254 4. Analysis is insufficient to solve all problems. There is a need to supplement it with design.

255 5. The notion that criticism is enough and that somehow useful progress will be made is absurd.

256 6. There is insufficient attention to the generative, productive, constructive and creative aspects of thinking.

257 7. The huge importance of the possibility system is largely ignored.

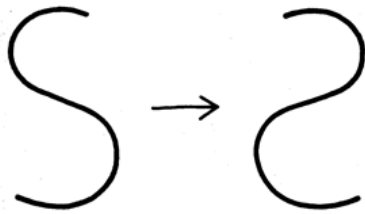
258 Nevertheless, I do want to emphasize that the traditional thinking system has value and excellence and its proper place.

259 The danger lies in assuming that it is sufficient and allowing the system to dominate all our intellectual effort.

260 I believe that our civilization would have been at least 300 or even 400 years further advanced if we had not been trapped by such an unconstructive thinking system.

261 You do not have to agree with me.

262 Consider a reversed 'S' shape.



Consider a reversed 'S' shape.

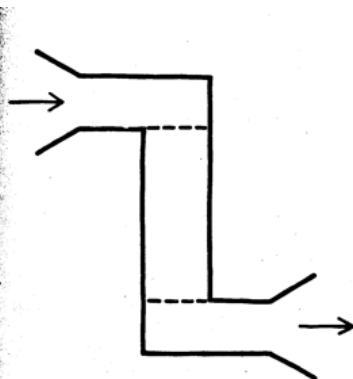
263

264 Consider a snake with an open mouth who takes in something at one end and puts out something at the other.



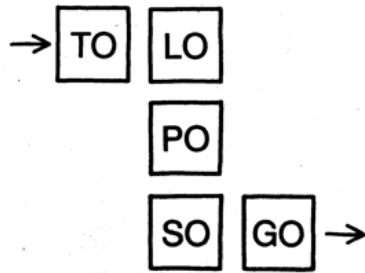
265

266 Consider a special type of coffee filter. You put in water at the top and the filtered coffee comes out at the bottom.



267

268 Following the perceptions on the previous pages look at the shape shown here.



269

270 Think of the five boxes as forming a sort of processing pipe.

271 You go in at the top with your intention to think about something.

272 At the bottom out come the results of your thinking.

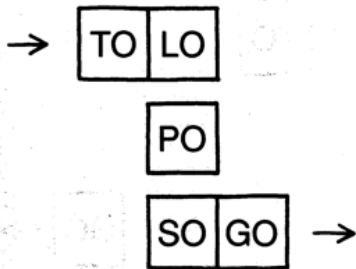
273 This is the basic diagram which we shall be using for the rest of the book.

274 Keep it clearly in your mind.

275 You may also regard the two top boxes (TO and LO) as the 'input' side.

276 The two boxes at the bottom (SO and GO) are the 'output' side.

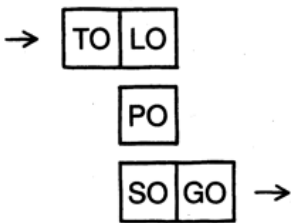
277 The bridge or link between input and output is the PO box.



278

## 279 The Five Stages of Thinking

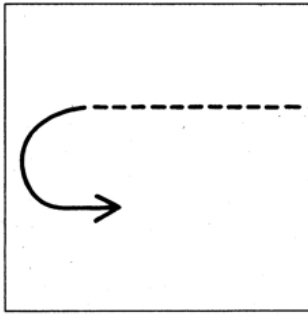
280 This book is based on a five-stage process of thinking.  
281 These five stages are not based on an analysis of the normal thinking process.  
282 Analysis is useful for description but usually quite useless for operations.  
283 It is a mistake to believe that analysis of the thinking process can provide the tools necessary for thinking.  
284 Tools have to be practical and usable. In the same way, the five stages of thinking used in this book provide a formal framework for the practical operation of thinking.  
285 The stages are designed to be practical.  
286 The basic figure that has been considered in the last few pages is shown here again.



287  
288 You enter at the top as shown by the arrow and you exit at the bottom as shown by the arrow.  
289 Each of the five boxes contains the word associated with that stage.  
290 What do these names mean?  
291 The names of the five stages are outlined below and will be considered much more fully in each section.  
292 For each stage there is both a word and also a symbol that indicates in a visual way the nature of that stage.  
293 TO indicates the aim, purpose or objective of the thinking.  
294 Where are we going to?  
295 With what do we want to end up?  
296 LO indicates the information available and the information we need.  
297 What is the situation?  
298 What do we know?  
299 Perceptions come in here as well.  
300 PO is the stage of possibility.  
301 Here we create possible solutions and approaches.  
302 How do we do it?  
303 What is the solution? This is the generative stage.  
304 SO narrows down, checks out and chooses from amongst the possibilities.  
305 This is the stage of conclusion, decision and choice.

- 306 This is the result stage.
- 307 GO indicates the 'action step'.
- 308 What are you going to do about it?
- 309 What next?
- 310 What follows on from your thinking?
- 311 The symbols that accompany each stage are shown on the following pages.

312 ***TO symbol***



313

314 The broken line indicates that we know where we want to go.

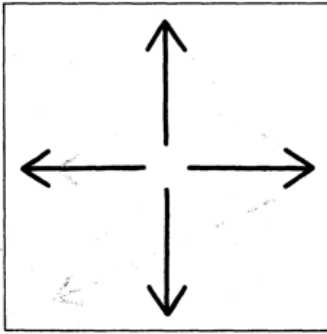
315 We pull back from that objective to where we are at the moment.

316 Then with the solid line we seek to move towards the objective.

317 So the symbol indicates a knowledge of the purpose of the thinking and the desire to achieve that purpose.



318 ***LO symbol***



319

320 This symbol indicates looking around in all directions.

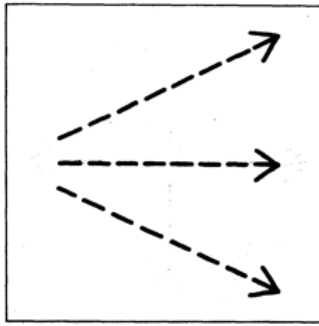
321 We are looking all around for information.

322 The arrows suggest looking in every direction.

323 What do we see?

324 What information is there?

325 ***PO symbol***



326

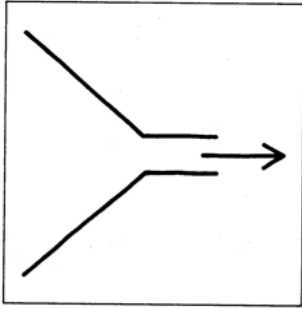
327 The broken lines indicate possibility.

328 This is the stage for creating multiple possibilities.

329 These are not yet lines of action but possibilities that have to be worked out and made solid.

330 There is an emphasis on more than one possibility.

331 ***SO symbol***



332

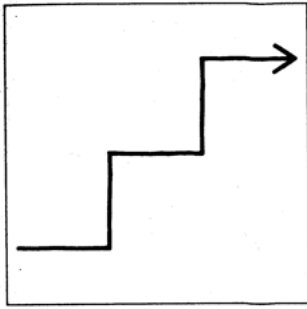
333 The symbol suggests a narrowing down to one outcome.

334 This illustrates the forming of one usable outcome.

335 Multiple possibilities have now come down to one outcome or result.

336

## ***GO symbol***



337

338 This symbol suggests progressing forwards and upwards.

339 This implies positive and constructive action.

340 The symbols may be used interchangeably with the words for each stage.

341 The symbols provide a visual illustration of the process required at each stage.

342 When you are thinking with the help of written notes you can use the diagrams to illustrate the different stages of your thinking.

343 Later sections in the book will go through each of the five stages in thinking in much more detail.

344 ***Thinking situations differ greatly***

345 In some situations you will need to spend much more time in one stage and  
in other situations the emphasis may be on another stage.

346 You do not need to learn or memorize the stages at this point.

347 When you get to the end of the book you will find that you can remember  
them very easily:

348 there is an input stage and an output stage and in between is a vertical stack  
of three thinking stages.

## 349 **Some Basic Processes in Thinking**

350 It is useful to have an overview of some of the most basic processes in  
thinking before we look in detail at each of the five stages.

351 These processes come in at every stage so it is useful to have a preview of  
them here.

352 The basic processes that are going to be considered here are:

353 1. Broad/specific

354 2. Projection

355 3. Attention directing

356 4. Recognition

357 5. Movement.

358 I am aware that these matters can be looked at in many ways.

359 Each of these broad areas could be subdivided and each subdivision could  
claim to be a basic process in its own right.

360 For the sake of simplicity I have made the above choice.

361 ***Broad/Specific, General/Detail***

362 Imagine a short-sighted person seeing a cat for the first time.

363 There is a blurry image and the person sees 'a sort of animal'.

364 As the cat gets nearer the details gradually emerge and now the person gets a true picture of a cat.<sup>xxx</sup>

365 Imagine two hawks.

366 One of them has excellent eyesight but the other is short-sighted.

367 Both of them live on a diet of frogs, mice and lizards.

368 From a great height the hawk with excellent eyesight can see and recognize a frog.

369 It dives and eats the frog.

370 Because this hawk has such excellent eyesight it can live on a diet of frogs and soon forgets about mice and lizards.<sup>xxx</sup>

371 The hawk with poor eyesight cannot do this.

372 This hawk has to create a general concept of 'small things that move'.

373 Whenever it sees a small thing that moves the hawk dives.

374 Sometimes it gets a frog, sometimes a mouse, sometimes a lizard and occasionally a child's toy.<sup>xxx</sup>

375 Most people would immediately regard the hawk with superior eyesight as a superior hawk.

376 In some ways they would be wrong.

377 If frogs died out the first hawk would also die but the second hawk would carry on with very little disturbance.

378 This is because the poor-eyesight hawk has flexibility.

379 This flexibility arise' from the creation of the general, broad and blurry concept of 'small things that move'.<sup>xxx</sup>

380 Some electronic students were given a simple circuit to complete.

381 Ninety-seven per cent of them complained that they did not have enough wire to complete the circuit ...

382 Only 3 per cent completed the circuit.

383 The 97 per cent wanted 'wire' and since there was no wire they could not complete the task.

384 The 3 per cent had a broad, general, blurry concept of 'a connector'.

385 Since wire was not available they looked around for another type of connector.

386 They used the screwdriver itself to complete the circuit.<sup>xxx</sup>

387 Most of the advantages of the human brain as a thinking machine arise from its defects as an information machine.

388 Because the brain does not immediately form exact, detailed images we have a stock of broad, general and blurry images which become concepts.

389 These broad, general and blurry images are immensely useful in thinking.™™™

390 Consider the difference between the following two requests:

391 • 'I want some glue to stick these two pieces of wood together.'

392 • 'I want some way of sticking these two pieces of wood together.'™™™

393 The first is very specific.

394 If glue is not available then the task cannot be done.

395 It may also be that glue is not the best way of sticking the pieces together on this occasion.™™™

396 The second request includes many alternative ways of sticking the two pieces of wood together: glue, nails, screws, clamps, rope, joints, etc.

397 This both allows for flexibility if glue is not available and also allows consideration of the other options.™™™

398 Good thinkers have this great ability to keep moving from the detail back to the general, from the specific to the broad and then back again.™™™

399 When we look for a solution to a problem we often have to consider it in very broad terms first.™™™

400 'We need some way of fixing this to a wall.'™™™

401 Then we proceed to narrow down the broad to something specific.™™™

402 In the end we can only 'do' specific things.

403 But the broad, blurry concepts allow us to search more widely, to be more flexible and to evaluate options.™™™

404 This ability to move from the detail to the general is sometimes called abstraction – a term that is more confusing than helpful.™™™

405 As we go through the five stages of thinking you will see the frequent changes from the broad to the specific and back again.™™™

406 In thinking we are always urged to be precise.

407 This is one area where you are encouraged to be broad and blurry.

408 Of course, you have to be 'blurry' in roughly the right direction.

409 If you are looking for 'some way to fix something to the wall' it is not much use looking for 'some way to fry an egg'.



## 410 **Projection**

411 Imagine that you have a video player in your mind.

412 You press the button and you see played out in your mind a particular scene.

413 • Projection means running something forward in your mind.

414 • Projection means imaginings

415 • Projection means visualizing.

416 We can see things in the world around us.

417 Projection means looking inwards into our minds and seeing things there.<sup>sss</sup>

418 A car is painted white on one side and black on the other side.

419 Imagine what would happen if that car was involved in an accident.

420 In our mind's eye we can see witnesses in court contradicting each other:  
one declaring the car to be black and another declaring it to be white.

421 Most humor involves projection.

422 We need to imagine the scene.<sup>sss</sup>

423 Projection is a very basic part of thinking because we cannot check out  
everything in the real world.

424 So we have to 'see what would happen' and to check things out in our  
minds.

425 We may be wrong and we may not get a very clear picture but at least we  
can get some indication.<sup>sss</sup>

426 'What would happen if all public transport were to be free?'<sup>sss</sup>

427 Someone will imagine the benefits to poorer people.

428 Someone will imagine the overcrowding.

429 Someone will imagine the benefits to in-town shops.

430 Someone may even imagine the cost being put on everyone's taxes.<sup>sss</sup>

431 'What would happen if a block of ice floating in a glass of water melted?

432 Would the level of water in the glass go up, go down or remain the same?'<sup>sss</sup>

433 You would need some understanding of physics to answer that question.

434 Our imagination is limited by our knowledge and experience but we have to  
use it as best we can.<sup>sss</sup>

435 'What would it look like if we removed that circle and replaced it with a  
triangle?'<sup>sss</sup>

436 A designer always has to project and visualize what would happen if  
something were to be done.<sup>sss</sup>

437 The famous thought experiments used by Einstein depend on projection.

438 In a thought experiment you run the experiment in your mind and see what  
happens.

439 You may reach a point when you have to say to yourself that you do not  
know what would happen.

- 440 This now becomes a point for further thinking or for carrying out an experiment.<sup>xxx</sup>
- 441 In some cases thinking is indeed carried out with figures and mathematical symbols on paper.
- 442 We may even play around with words.
- 443 But most thinking takes place within our minds, using our ability to 'project'.<sup>xxx</sup>
- 444 What you project in your mind is not always right.
- 445 You may have left out something very important.
- 446 You may have insufficient knowledge or experience of the subject.
- 447 You should never be arrogant or dogmatic—about your 'projections'.
- 448 Be willing to accept that they may be wrong or limited.

## 449 *Attention Directing*

- 450     ▪ What time is it?
- 451     ▪ 'How old are you?
- 452     ▪ 'Did you like the soup?
- 453     ▪ 'Do you want some more coffee?
- 454     ▪ 'What is the current exchange rate between the US dollar and the Japanese yen?
- 455     ▪ 'At what temperature does this plastic melt?

456 All questions are attention-directing devices.

457 We could easily drop out 'questions' and instead ask people to direct their attention to specified matters.

- 458     ▪ 'Direct your attention to the time.'
- 459     ▪ 'Tell me the time.'
- 460     ▪ 'Direct your attention to your age and tell me what you find.'
- 461     ▪ 'Direct your attention to the melting-point of this plastic and tell me what you know.'

462 An explorer returns from an expedition to a newly discovered island.

463 The explorer reports on a smoking volcano and a bird that could not fly.

464 But what else was there?

465 The explorer explains that those were the two things that caught his attention.

466 That was not good enough.

467 So the explorer was sent back with specific instructions to use a very simple attention-directing framework.

468 'Look north and note what you see.

469 Then look east and note what you see.

470 Then look south and note what you see.

471 Then look west and note what you see.

472 Now come back and give us your notebook.'

473 The N-S-E-W instructions provided a very simple framework for directing attention.

474 Our attention usually flows in three ways:

- 475 1. What catches our interest or emotional involvement at the moment.
- 476 2. Habits of attention established through experience and practice.
- 477 3. A more or less haphazard drift from one point to another.

478 A great many of the deliberate processes of thinking involve a specific direction of attention.

479 Socratic questioning (Drucker) is just such a direction of attention.

480 There is nothing magical about it.<sup>xxx</sup>

481 The CoRT Thinking Program for schools (to be described later) includes a  
number of attention-directing tools.

482 For example the OPV tool asks the thinker to direct his or her attention to the  
views of the other people involved.

483 Some thinkers might have done this automatically.

484 Most do not.

485 So there is a need for a deliberate attention-directing tool.

486 The important process of analysis is an attention-directing instruction.

487     ▪ 'Direct your attention to the component parts making up this  
situation.'

488     ▪ 'Direct your attention to the different influences affecting the price of  
oil.'

489     ▪ 'Direct your attention to the various factors involved in the  
effectiveness of a police operation.'

490     ▪ 'Direct your attention to the parts making up a skateboard?

491     ▪ 'Direct your attention to the ingredients of our current strategy.'

492 Comparison is another fundamental 'attention-directing instruction'.

493     ▪ 'Direct your attention to the points of similarity between these two  
proposals.'

494     ▪ 'Direct your attention to the points of similarity and the points of  
difference between the two pipes of packaging.'

495     ▪ 'Direct your attention to the relative advantages and disadvantages of  
these two routes to the seaside.'

496     ▪ 'Compare these two microwave ovens. Direct your attention to how  
they compare on price, capacity, reputation of maker, service, etc.'

497 For attention-directing we can use a deliberate external framework (as with  
the CoRT tools) or we can use simple internal instructions such as analyze  
and compare.

498 Another form of attention-directing is the request to focus on some aspect of  
a situation.

499     ▪ 'I want you to focus on the political effect of raising the tax on diesel  
oil.'

500     ▪ 'I want you to focus on the security, arrangements at the banquet.'

501     ▪ 'I want you to focus on who is going to exercise this dog you want to  
buy.'

502     ▪ 'I want you to focus on the benefits of going to a technical college.'

503     ▪ 'I want you to focus on the disadvantages of taking this fixed-interest  
mortgage.'

504 In the Six Thinking Hats framework (to be discussed later) this focusing is  
obtained by an external framework.

505 For example, use of the 'yellow hat' implies an exclusive focus on the values  
and benefits in the situation under discussion.

506 Use of the 'black hat' implies an exclusive focus on the dangers, problems,  
drawbacks and caution points.<sup>xxx</sup>

507 Although most people claim to carry out attention-directing internally, in  
practice they do not.

508 For example, in a group of highly educated executives one half were asked  
to judge a suggestion objectively and the other, random, half were asked to  
use the yellow and black hats, deliberately.

509 Those using the hats turned up three times as many points as the others.

510 Yet most of the others would claim always to look at the 'pros and cons' in  
any situation.<sup>xxx</sup>

511 That is why it is sometimes necessary to have external, formal and deliberate  
attention-directing tools.

512 They may seem simple and obvious but they are effective.

513 ***Recognition and Fit***

- 514 A common child's activity toy consists of a box or board with different-shaped holes in it.
- 515 The child is required to put different-shaped blocks or pieces into the different-shaped holes.
- 516 Some fit and some do not fit.<sup>xxx</sup>
- 517 Someone is coming towards you from a distance.
- 518 You have no reason to expect a particular person.
- 519 As the person gets closer you begin to think that you might recognize her.
- 520 She gets close and suddenly you are sure: recognition 'clicks'; there is a 'fit.'<sup>xxx</sup>
- 521 A wine expert tastes wine from a bottle with a masked label.
- 522 After a while she declares that it is from the Casablanca region in Chile.
- 523 Recognition and identification have taken place.<sup>xxx</sup>
- 524 The brain forms patterns from experience.
- 525 Actually experience self-organizes itself into patterns within the brain.
- 526 That is why we can get dressed in the morning.
- 527 Otherwise we might have to explore the 39,816,800 ways of getting dressed with just eleven items of clothing.
- 528 Without patterns we could not cross the road or drive or read or write or do anything useful at work.
- 529 The brain is a superb pattern-making and pattern using system (which is why it is so bad at creativity).<sup>xxx</sup>
- 530 We seek to fit things into the appropriate pattern.
- 531 We seek to use the boxes and definitions derived from experience –just as Aristotle wanted us to do.
- 532 We usually call this recognition, identification or judgement.
- 533 Mostly it is extremely useful.
- 534 Occasionally it is dangerous, when we trap something in the wrong box or when we seek to use old-fashioned boxes on a changed world.<sup>xxx</sup>
- 535 We set out to look for something.
- 536 We are very happy when we find something that 'fits' what we are looking for.
- 537 We look no further.<sup>xxx</sup>
- 538 There is a sort of 'click' about recognition.
- 539 This really means that we have switched into a well established pattern and are no longer 'wandering around'.<sup>xxx</sup>
- 540 I prefer the word 'fit' to the word 'judgement' because judgement has a much wider meaning.
- 541 Judgement may mean evaluation and assessment, which are specific attention-directing processes.

542 The word 'fit' is closer to 'recognition'.<sup>542</sup>

543 In some ways the purpose of thinking is to abolish thinking.

544 Some people have succeeded in this.

545 The purpose of thinking is to set up routine patterns so that we can always see the world through these routine patterns, which then tell us what to do.

546 Thinking is no longer needed.

547 Some people have succeeded in this because they believe that the patterns they have set up are going to be sufficient for the rest of their lives.

548 There is no prospect of change or progress for such people.

549 But they may be complacent and content.<sup>549</sup>

550 In thinking we try to move towards 'recognizing' patterns.<sup>550</sup>

551 We note when we have a recognition.

552 We also need to note the value – or danger – of that recognition.

553 Using stereotypes of people or races is a form of recognition but one that is more harmful than useful.

## 554 ***Movement and Alternatives***

555 The basic thinking processes mentioned up to this point will be familiar to most traditional thinkers but movement will not be familiar.<sup>555</sup>

556 'Movement' simply means 'How do you move forward from this position?'<sup>556</sup>

557 In its most extreme form movement is used along with provocation as one of the basic techniques of lateral (creative) thinking.<sup>557</sup>

558 In a provocation we can set up something which is totally outside our experience and even contrary to experience.

559 As a provocation we might say: 'Cars should have square wheels.'

560 Judgement would tell us that this is nonsense:

- 561     ▪ it is structurally unsound;
- 562     ▪ it would use more fuel; it would, shake to pieces; speed would be very limited;
- 563     ▪ tremendous power would be needed; the ride would be most uncomfortable, etc., etc.

564 Obviously, judgement would not help us to use that provocation because judgement is concerned with past experience whereas creativity is concerned with future possibility.

565 So we need another mental operation and this is called 'movement'.

566 How do we move forward from the provocation?<sup>566</sup>

567 We might get movement from imagining the square wheel rolling (the projection process).

568 As the wheel rises on the corner point the suspension could adjust and get shorter so the car remained the same distance from the ground.

569 From this comes the concept of suspension that reacts in anticipation of need.

570 This leads on to the idea of 'active' or 'intelligent suspension', which is now being worked out as a real possibility.<sup>570</sup>

571 Movement covers all ways of moving forwards from a statement, position or idea.

572 Movement can include association.

573 We move from one idea to an association.<sup>573</sup>

574 Movement can include drift or day-dreaming, in which ideas just follow one another.<sup>574</sup>

575 Movement also includes the setting up of alternatives.

576 If we have one satisfactory way of doing something why should we seek out alternatives?

577 There is no logical reason therefore we have to make a deliberate effort to generate parallel alternatives.

578 This involves movement: 'How else can we do this?'<sup>578</sup>

579 The value of seeking further alternatives is obvious.



580 The first way is not necessarily the best way.

581 A range of alternatives allows us to compare and assess them and choose the best.<sup>581</sup>

582 'Movement' may be directed by an instruction or attention-directing request.

583 We may instruct ourselves to direct attention to 'other members of the same class'.

584 So we move to these other members.<sup>581</sup>

585 Movement is a very broad process and overlaps with other processes.<sup>581</sup>

586 Movement is also the basis of 'water logic' which is described in my book Water Logic.

587 In water logic we observe the natural flow from one idea to another.

588 In the more deliberate process of movement we seek to bring about movement from one idea to another.

589     ▪ 'Where do we go to/from here?'

590     ▪ 'What alternatives are there?'

591     ▪ 'How do we get movement from this provocation?'

592     ▪ 'What follows?'

593     ▪ 'What idea comes to mind?'<sup>581</sup>

594 It could be said that the whole of thinking is an effort to get 'movement' in a useful direction.

595 We use many devices for that purpose.

## 596 Frameworks

597 I intend to outline here two frameworks which I shall be referring to from  
time to time in the rest of the book.

598 There is no need to know these frameworks.

599 You can simply ignore all references to the frameworks when you come  
across them.

600 The book will work just as well without them.<sup>xxx</sup>

601 There is, however, a need to mention these frameworks in the book because  
many people familiar with my other work in thinking will wonder how the  
frameworks they know fit in with this particular book.

602 But making this connection might confuse those readers who did not know  
anything about the other methods.

603 They would get annoyed and confused when they came across a reference  
that did not make sense to them.

604 So I am outlining the frameworks here so that readers of this book will be  
prepared for the references.

605 They can then ignore them if they wish.<sup>xxx</sup>

606 It is also possible that readers may then wish to follow up these references  
and also acquaint themselves with the other material.<sup>xxx</sup>

607 At this point you can skip the rest of this section and simply ignore all future  
references which you do not understand.

608 That will not affect the usefulness of the book.

## 609 ***The Six Thinking Hats***

610 This very simple and powerful framework is now in use in schools and also in business around the world.

611 There are many reasons why the framework has been so widely adopted.

612 1. It provides an alternative to traditional Western adversarial argument.

613 2. It is usable across a very wide range of cultures which do not accept Western argument.

614 3. It is much more creative and constructive than traditional argument.

615 4. It is very much quicker (an IBM lab reported a reduction in meeting times of 75 per cent).

616 5. It gets the best out of people.

617 6. It allows the thinker to do one thing at a time and to do it very thoroughly – instead of trying to juggle all aspects of thinking.

618 7. It removes the ego and politics from thinking.

619 8. It provides the 'parallel' thinking needed to design the way forward when traditional 'boxes' are no longer adequate.

620 9. It is very easy to learn and to use.

621 10. It is practical.

622 There are now certified trainers worldwide in the teaching of the Six Hats method.

623 Peter and Linda Low in Singapore have trained over 3,000 people in a very short time.

624 There are also special courses for schools.\*<sup>111</sup>

625 There are six imaginary thinking hats.

626 Only one is used at a time.

627 When that hat is used then everyone in the group wears the same hat.

628 This means that everyone is now thinking in parallel in the same direction.

629 Everyone is thinking about the subject-matter and not about what the last person said.

## 630 **The White Hat**

631 Think of white paper and computer printout.

632 The white hat indicates an exclusive focus on information.

633 What information is available?

634 What information is needed?

635 What information is missing?

636 How are we going to get the information we need?<sup>111</sup>

637 All information is laid down in parallel even if it is in disagreement.

638 The quality of information may range from hard facts which can be checked to rumors or opinions which exist.

## 639 **The Red Hat**

640 Think of fire and warm.

641 The red hat allows the free expression of feelings, intuition, hunches and emotions without apology and without explanation.

642 The red hat asks a person to express his or her feelings on the subject at this moment in time (later the feelings could change).

643 There must never be any attempt to justify or give the basis for the feelings.

644 Feelings exist and should be allowed into the discussion provided they are signaled as feelings and not disguised as logic.

645 Intuition may be based on a great experience of the field and may be very valuable.<sup>sm</sup>

646 For further information on formal Six Hats training and schools material, please fax London 0171-602 1779 or write do Penguin Books.

## 647 **The Black Hat**

648 Think of a judge's robes, which are usually black.

649 The black hat is for caution and stops us doing things which are dangerous, damaging or unworkable.

650 The black hat is for risk assessment.

651 The black hat is for critical thinking: why something does not fit our policy, our strategy, our resources, etc.<sup>sm</sup>

652 The black hat is a most useful hat but, unfortunately, is very easy to overuse.

653 Food is good for you but overeating is bad for the health.

654 This is not a fault of the food but of its overuse.

655 In exactly the same way the black hat is very useful and the fault lies only in its overuse.

656 The tendency to overuse the black hat arises directly from the Gang of Three, where Socrates felt it was enough to be negative and the truth would eventually emerge.

657 So there are people who feel that it is enough to be negative.

## 658 **The Yellow Hat**

659 Think of sunshine and optimism.

660 The yellow hat is the logical positive hat.

661 Under the yellow hat the thinker seeks out the values and benefits.

662 The thinker looks to see how the idea can be made workable and put into practice.<sup>sm</sup>

663 The yellow hat is much harder than the black hat and requires much more effort.

664 The brain is naturally tuned to point out what is wrong and what is not as it should be.

665 In order to avoid danger and mistakes we are naturally cautious.

666 The yellow hat requires effort.  
667 Often this effort is well rewarded.  
668 Suddenly we see values and benefits which we had never noticed before.  
669 Without the yellow hat creativity is almost impossible because we would never see the benefits of an emerging idea.

## 670 **The Green Hat**

671 Think of vegetation, growth, energy, branches, shoots, etc.  
672 The green hat is the creative hat.  
673 Under the green hat we put forward alternatives.  
674 We seek out new ideas.  
675 We modify and change suggested ideas.  
676 We generate possibilities.  
677 We use provocations and movement to produce new ideas....  
678 The green hat is the action hat.  
679 The green hat opens up possibilities.  
680 The green hat is the productive and generative hat.  
681 At the green-hat stage things are only 'possibilities'; they have to be developed and checked out later.

## 682 **The Blue Hat**

683 Think of blue as sky and overview.  
684 The blue hat is the control hat.  
685 The blue hat is concerned with the management of the thinking process.  
686 The conductor of the orchestra manages the orchestra and gets the best out of the musicians.  
687 The ringmaster in a circus makes sure that there is no confusion and that things follow in the proper sequence.  
688 So the blue hat is for looking at the thinking process itself....  
689 The blue hat is concerned with defining the problem and what is being thought about.  
690 The blue hat is also concerned with outcomes, conclusions, summaries and what happens next.  
691 The blue hat sets up the sequence of other hats to be used and ensures that the rules of the Six Hat framework are adhered to.  
692 The blue hat is the organizer of the thinking process.

## 693 **Use Of The Hats**

694 There are two broad methods of using the hats.  
695 A single hat may be used on its own in a meeting or discussion to request a particular type of thinking for a defined time.

696 For example at a certain point further alternatives may be needed.

697 So the facilitator of the meeting asks for 'three minutes of green-hat thinking'.

698 This aligns the thinking of the members of the group so that for three minutes every one of them is seeking to find further alternatives.

699 At the end of the three minutes they return to the discussion.

700 Later there is a need to consider an action proposal so the facilitator requests 'three minutes of black-hat thinking'.

701 For that three minutes everyone focuses on the dangers and potential problems of the action proposal.<sup>xxx</sup>

702 In this 'occasional' use the hats become symbols that allow a particular type of parallel thinking to be requested.

703 Everyone now thinks in parallel instead of in the adversarial mode.

704 In the sequential use, a sequence of hats are used one after the other.

705 The sequence may be pre-set at the beginning or may evolve.

706 With an evolving sequence the first hat is chosen and then when this has been done the next hat is chosen.

707 For inexperienced groups it is much better to use the pre-set sequence to avoid long arguments over which hat is to be used next.<sup>xxx</sup>

708 There is no one fixed sequence in which the hats can be used.

709 The sequence will vary with the situation and also with the participants in the thinking.

710 There are some general guidelines which are given in the certified trainer's course.

711 In general, start with a blue hat and end with a blue hat and choose any reasonable sequence in between.

## 712 ***The CoRT Thinking Program***

713 This program\* was designed specifically for the direct teaching of thinking as a school subject.

714 \*For information on the CoRT Thinking Program please fax London 01 71--602 1779.

715 We have had over twenty years of experience with the program, which is now widely in use around the world in various ways (Canada, USA, Mexico, Venezuela, UK, Ireland, Italy, South Africa, Malaysia, Singapore, Australia and New Zealand).

716 The use may vary from being mandatory across a whole country, as in Venezuela, to use in certain schools or school districts.

717 In Malaysia the MARA senior science schools have been using the program for ten years. <sup>1995</sup>

718 The essence of the CoRT Thinking Program is the tool approach. <sup>1995</sup>

719 This is a very direct approach to the teaching of thinking.

720 Students practice the tools on a variety of short thinking items.

721 They build up skill in the use of the tool, which can then be used on any other situations.

722 Students often take the tools home to help them help their parents make decisions and plans.

723 It is the transfer aspect of the tools that is most important. <sup>1995</sup>

724 The best research on the use of the CoRT program has been done by Professor John Edwards at James Cook University, Queensland, Australia. <sup>1995</sup>

725 The CoRT program is designed to be simple and practical.

726 Teachers can quickly learn to teach it and students love it.

727 Whenever CoRT thinking is formally on the curriculum students always choose it as their favorite subject.

728 Perhaps because there is little else in the curriculum that allows free thinking. <sup>1995</sup>

729 The CoRT program is divided into six sections each of which deals with one aspect of thinking.

730 Each section contains ten lessons.

731 CoRT 1 - Breadth

732 CoRT 2 - Organization

733 CoRT 3 - Interaction

734 CoRT 4 - Creativity

735 CoRT 5 - Information and feeling

736 CoRT 6 - Action

737 CoRT 1 contains certain basic 'attention-directing' perceptual tools.

738 These are now very widely used.

739 Each tool is assigned a name so that the tool can be learned and used deliberately.

740 These names have a useful perceptual purpose.

741 The names are derived from the initials of the process that is being requested.

742 The basic tools are as follows: <sup>xxx</sup>

743 PMI Plus, Minus and Interesting.

744 Direct your attention to the Plus points, then the Minus points and finally the Interesting points.

745 The result is a quick assessment scan. <sup>xxx</sup>

746 CAF Consider All Factors.

747 What should we take into account when we are thinking about something?

748 What are the factors involved? <sup>xxx</sup>

749 C&S This directs attention to the 'Consequences and Sequels' of the action.

750 The request is for a forward look at what will happen later.

751 Different time-scales can be requested. <sup>xxx</sup>

752 AGO What are the Aims, Goals and Objectives?

753 What are we trying to do?

754 What are we trying to achieve?

755 Where are we going? <sup>xxx</sup>

756 FIP First Important Priorities.

757 Direct attention to those things which really matter.

758 Not everything is of equal importance.

759 What are the priorities? <sup>xxx</sup>

760 APC Alternatives, Possibilities and Choices.

761 Create new alternatives?

762 What are the possibilities?

763 What are the choices? <sup>xxx</sup>

764 OPV Direct attention to Other People's Views.

765 Who are the other people involved?

766 What are their views?

767 The tools are used explicitly and directly.

768 They are a formal way of directing perceptual attention in a defined direction.

769 'Do a PMI here.'

770 'Let's start with a CAF.'

771 'What's the AGO''

772 'Time for an APC.'

773 All this may seem artificial but it works.



- 774 Thinking sometimes has to be made artificial and deliberate otherwise we take it for granted and assume that we do things when in fact we do not do them at all.
- 775 Most people would claim to look at the consequences of an action but experiments show that a deliberate request to look at consequences with a formal C&S request produces a far better scan.
- 776 Attention does need directing deliberately.
- 777 Far too many people assume they are good thinkers when they are not.

## 778 **Situation Coding**

779 There can be a value, sometimes, in having a simple way of describing a thinking situation or thinking need to yourself or to others.

780 'It is this type of situation.'

781 'This is the sort of thinking that is required.'

782 'How would you describe the situation?'

783 'What thinking do we need here?'

784 In this section I intend to describe a simple type of situation coding.

785 This is a subjective coding and is not a formal classification of situations.

786 You use this coding to indicate how the situation seems to you.

787 Someone else might disagree and then you can both focus on the disagreement.

788 Even though you may start out coding a situation one way, you may find that you need to modify the code as you go along.

## 789 ***The Coding***

790 For each of the five stages of thinking (TO, LO, PO, SO, GO) you apply a number from 1 to 9.

791 This 'rating' from 1 to 9 indicates the amount, the difficulty or the importance of the thinking that needs to be done in that stage.<sup>xxx</sup>

792 For example, if you are asked to choose between a fixed set of alternatives then the PO stage does not require much thinking because the alternatives have been given.

793 So the PO stage gets a 1.

794 On the other hand, the SO stage is going to have to do a lot of work so this stage gets a 9.

795 The GO stage may also have quite a lot to do and gets a 6.

796 The TO stage does not require much work because the thinking purpose has been clearly set, so the TO stage gets a 1.

797 The LO stage is important because you need to explore perceptions and find information in order to make your choice.

798 So the LO stage gets an 8.<sup>xxx</sup>

799 The overall coding now becomes 18/196.

800 The break after the first two digits is for ease of pronunciation: one eight / one nine six.<sup>xxx</sup>

801 In another situation there seems to be confusion.

802 The information is present but you do not know what to do.

803 Perhaps the emotional factor is high.

804 The emphasis may now fall on the TO stage.<sup>xxx</sup>

805 'Am I clear as to what I want to achieve?

806 What is the real purpose of my thinking?

807 With what do I want to end up?<sup>xxx</sup>

808 So the TO stage gets a 9.

809 The information is mostly available, so the LO stage gets a 4.

810 The PO stage does require some work but if the TO stage is clear then the PO stage will not be difficult.

811 So the PO stage also gets a 4.

812 The SO stage may be important, especially if there is emotional involvement, so this stage gets a 6.

813 The GO stage may be straightforward and gets a 1.<sup>xxx</sup>

814 So the final coding becomes: 94/461 (nine four / four six one).<sup>xxx</sup>

815 On another occasion the sole purpose of the thinking is to obtain a specific piece of information.

816 The TO stage is clear, so this gets a 1.

817 The LO stage is all important and gets a 9.

818 The PO stage is also important because we may have to consider possible ways of getting the information.

819 So the PO stage gets an 8.

820 The SO stage may be simple if there turns out to be one clear way of getting the information.

821 But this may not be clear and there may be several ways to choose between.

822 So the SO stage gets a 5.

823 The GO stage is relatively simple and gets a 4.<sup>xxx</sup>

824 The overall coding becomes: 19/854 (one nine / eight five four).

825 Another situation is a direct creative demand.

826 You are asked to come up with a good name for a book.

827 The purpose of the thinking is very clear, so the TO stage gets a 1.

828 The information stage is important because you need to know what is in the book, who it is meant to appeal to and where it will be sold.

829 You also need to know the titles of other books on the same subject.

830 So the LO stage is important and gets an 8.

831 Obviously, most of the work is going to be creatively in the PO stage, so this gets a 9.

832 The choice stage is going to be difficult.

833 How do we decide which title to use?

834 So the SO stage also gets an 8.

835 The GO stage is simple because if you have selected the title you simply use that title.

836 So the GO stage gets a 1.<sup>ms</sup>

837 The resulting coding is: 18/981 (one eight / nine eight one).<sup>ms</sup>

838 Only use the 9 rating once in the coding even if two stages both seem very important.

839 The 9 should indicate the most important stage.

840 The other figures should be used as often as you like.<sup>ms</sup>

841 Of course, all stages of thinking are important and you may be inclined to give a high rating to each of the five stages.

842 This would be to misunderstand the purpose of the coding.

843 A stage with a low rating does not mean that stage is unimportant.

844 It means that that stage will require less thinking work than other stages.

845 It is relative.

846 If you are set a specific task then the TO stage is simple.

847 If you simply wish to make a choice then the GO stage may be simple.

848 If you are working in a closed problem where all the information is available then the LO stage may be simple.

849 If you are presented with fixed alternatives then the PO stage may be simple.

850 If you clearly identify a situation in the PO stage then the SO stage may be simple.<sup>ms</sup>

851 In a negotiation situation the purpose may be clear: 'We want to end up with an agreement acceptable by both sides.'

852 So the TO stage is simple and gets a 1.<sup>ms</sup>

853 The information stage may have to explore a lot of information.

854 There will also be a need to explore values, fears, perceptions, etc.

855 So this stage will be important and the LO stage gets an 8.<sup>ms</sup>

856 The PO stage is key because it is here that the 'design' of possible outcomes has to be worked out.

857 There will need to be a lot of activity here.

- 858 So the PO stage gets the 9.<sup>xxx</sup>
- 859 It is difficult to predict how much work will need to be done in the SO stage.
- 860 If one of the possible designs put forward in the PO stage is very good then there will not be much difficulty choosing this outcome.
- 861 But if there is no one outstanding design then the choice process is going to be hard work.
- 862 So the SO stage gets an 8.<sup>xxx</sup>
- 863 The desired outcome of the thinking is an acceptable agreement.
- 864 But some thinking should also be given to its implementation.
- 865 So the GO stage gets a 5.<sup>xxx</sup>
- 866 The final coding becomes: 18/985 (one eight / nine eight five).<sup>xxx</sup>
- 867 If there is a problem to be solved then you may need to spend time defining and redefining the problem.
- 868 So the TO stage should not be automatic and deserves a 6.
- 869 This is particularly so if the problem has been around for a long time.<sup>xxx</sup>
- 870 If the problem has been around for a long time the information may be well known, so the LO stage may also get a 6.<sup>xxx</sup>
- 871 The generative effort has to take place in the PO stage so this gets the 9.<sup>xxx</sup>
- 872 The SO stage may be simple if a solution has turned up in the PO stage.
- 873 If no solution has turned up then the SO stage is also simple because all possibilities will be rejected.
- 874 So the SO stage gets a 5.<sup>xxx</sup>
- 875 The implementation of the solution needs thinking through, so the GO stage gets a 7.<sup>xxx</sup>
- 876 The final coding becomes: 66/957 (six six / nine five seven).

877 ***Should Be***

- 878 The coding is not just a simple description of what is the case but an indication of what you believe the situation 'should be'.<sup>xxx</sup>

- 879 When you are given a problem to solve, the definition of the problem may also be given to you.
- 880 This could mean that the TO stage only merits a 1.
- 881 But if you feel that much more attention should be given to defining, redefining and even breaking down the problem then you should indicate a 7 or an 8- in some cases even the 9.<sup>115</sup>
- 882 In this way the suggested coding becomes not only an indication of the situation but also a 'strategy' for dealing with the situation.<sup>115</sup>
- 883 If you really feel that a thorough information search is going to solve the problem then you would want to give the 9 to the LO stage.<sup>115</sup>
- 884 If you really feel that only creative effort will solve the problem then you give the 9 to the PO stage.<sup>115</sup>
- 885 If you feel that there are already enough possibilities and choice is required then you give the 9 to the SO stage.<sup>115</sup>
- 886 If you feel that the action design will be most important (an acceptance difficulty) then the GO stage gets the 9.<sup>115</sup>
- 887 A 91/811 situation means that the thinker believes that a clear definition of the thinking purpose is all important.
- 888 The information is simple and available.
- 889 There is a need to generate possibilities.
- 890 The thinker believes that a satisfactory possibility will be forthcoming so the SO and GO stages will be simple.<sup>115</sup>
- 891 An 18/195 situation seems to be a decision situation: perhaps a go/no go situation.
- 892 The purpose is clear.
- 893 Information is important.
- 894 There is little need to generate possibilities.
- 895 The SO stage is all-important and the action stage is moderately important.

896 **Summary**

897 In this section I have suggested a simple form of descriptive coding for thinking situations.

898 This coding consists of assigning a 1 to 9 rating to each of the five stages of thinking.

899 The higher the rating the more 'thinking work' there is to be done in this stage.<sup>111</sup>

900 The coding indicates what you think should be the case.

901 The coding indicates your intended thinking strategy.<sup>111</sup>

902 You can use the coding to describe a thinking need to yourself or to describe it to others.<sup>111</sup>

903 The coding becomes a way of thinking about and talking about a whole situation.

## 904 Summary

905 At the beginning of the book I wrote that it was my intention to put forward a  
simple and effective method for thinking.

906 At different times it may have seemed to the reader that matters were  
getting rather more complicated.

907 They need not be.<sup>xxx</sup>

908 Think only of the basic framework.

909 That is what you need to use.

910 You can read and reread each section to learn more about each stage.

911 Treat the sections as reference sections which you can go back to.<sup>xxx</sup>

912 It is best to use the framework in a very simple way at first and then gradually  
to elaborate each stage.

913 This is much better than trying to use each stage in its full sense from the  
beginning.<sup>xxx</sup>

914 There are times when some of the thinking refers to business situations  
rather than to personal thinking.

915 Those who are only interested in personal thinking should ignore these  
items.

916 But many readers of the book will need to do some of their thinking in the  
business world, so that aspect does need attending to in the book.<sup>xxx</sup>

917 The strategy for the reader is to be selective.

918 Pick out those things which you can understand and which you feel you can  
handle.

919 Be aware of the other material but do not feel you need to use everything at  
once.<sup>xxx</sup>

920 It is not a matter of reading the book and then putting it down and never  
looking at it again.

921 You will need reminding.

922 You will not get the most out of your thinking unless you eventually do  
attend to the matters in the book.

923 A superficial knowledge is enough to get started, but not enough to build up  
an effective thinking skill.<sup>xxx</sup>

924 As usual, some readers and most critics will assume that, because the bare  
bones of the framework are simple, the whole approach is too simple and is  
indeed something they have always done.

925 In my experience this arrogantly complacent attitude to thinking is always  
misplaced.

926 Many people who consider themselves to be good thinkers are using only  
one approach: analysis, judgement and identification.

927 This is only one part of thinking and leaves out the whole creative, generative  
and productive side of thinking.



928 ***The Five Stages of Thinking***

929 The five stages will be summarized below.

930 The key points will be given.

931 **TO 'Where am I going to?'**

932 What is the purpose of my thinking?

933 With what do I want to end up?

934 This stage of thinking is very important indeed.

935 We usually give this stage too little attention.

936 We need to be very clear on what we are thinking about and what we want to achieve.

937 We need to define and redefine the purpose.

938 We need to seek alternative definitions.

939 We may want to break down the purpose into smaller ones.

940 There are two main types of purpose or focus.

941 In the traditional purpose focus we set out what we want to achieve.

942 This may be solving a problem, achieving an objective, carrying out a task or making an improvement in a defined direction.

943 In the area focus, we simply define the area in which we are looking for new ideas.

944 Keep very clearly in mind that solving problems and putting right defects is only one aspect of thinking.

945 There is far more to thinking than problem solving.

946 **LO 'Lo and behold.'**

947 What can we see?

948 What should we look for?

949 In this stage we seek to gather and to lay out the information we need for our thinking.

950 The search for information should be very broad at times but at other times it may need to be focused.

951 There are fishing questions, where we do not know what answer will emerge.

952 There are shooting questions, where the answer is a 'yes' or a 'no' and we are checking things out.

953 Sometimes we need a guess or a hypothesis in order to know where to look.

954 Use such guesses but be careful not to be trapped by them.

955 Perceptions and values are an important part of this stage.

956 What are the different perceptions?

957 How can things be looked at differently?

958 What values are involved?

959 Do different people have different values?

960 What is the thinking of different people?

961 **PO 'Let's generate some possibilities.'**

962 This is the creative, productive and generative stage of thinking.

963 It is in this stage that we put forward 'possibilities'.

964 It is this stage which links up the purpose of our thinking with the output of our thinking.

965 There are two thinking stages before and two afterwards.

966 This stage is the link between input and output.

967 There are four broad approaches that can be used in the PO stage.

968 **1. Search for routine.**

969 Here we seek to identify the situation so that we can then know what to do and can apply the action that has been established as the routine response to that situation.

970 This is the traditional approach to thinking.

971 **2. General approach.**

972 Here we link starting-point and desired result with a broad, 'general' concept.

973 Then we seek to narrow this down to give us specific ideas that we can use.

974 The Concept Fan is part of this approach.

975 We work backwards, in general terms, from where we want to be in order to produce ideas that we can use.

976 **3. Creative approach.**

977 Here we set out deliberately to generate ideas and then we seek to modify these ideas to fit our needs.

978 There are the formal techniques of lateral thinking such as provocation and the use of a random entry.

979 'Movement' is a key part of creative thinking.

980 We 'move' forward from a provocation to get a useful idea.

981 **4. Design and assembly.**

982 Here we lay out the needs and ingredients in parallel.

983 Then we seek to design a way forward to achieve the 'design brief'.

984 We seek to assemble or to put things together to give us what we want.

985 The purpose of the PO stage is to be generative and to produce multiple possibilities.

986 **SO 'So what is the outcome?'**

987 The purpose of the SO stage is to take the multiple possibilities produced by the PO stage and to reduce these to a usable outcome.

988 There is the development stage, in which we seek to build up and improve ideas.

989 We seek to remove defects.

990 Then there is the evaluation and assessment stage, in which we examine each idea.

991 We seek to list the benefits and values.

992 We seek to list the difficulties and problems.

993 Next is the choice stage.

994 We now lay out all the competing ideas and choose between them.

995 There are various methods for making this choice.

996 We may use one method to narrow down the number of alternatives and then use direct comparison.

997 The decision process is concerned with whether or not we do something.

998 We need to consider the decision frame and the pressures.

999 We must consider the need for the decision.

1000 We must consider the risks.

1001 At the end of the SO stage we may have an idea we want to use or we may have nothing.

1002 **GO 'Go to it!'**

1003 The GO stage is concerned with action.

1004 How is the chosen idea going to be put into action?

1005 What is the action design?

1006 There are stages and sub-objectives.

1007 There is the need to monitor and to check.

1008 We use routine channels and we assess the uncertainties with if-boxes.

1009 The people factor in its various forms is a key part of action.

1010 People need persuading.

1011 Ideas must be accepted.

1012 There is a need for motivation.

1013 People can be obstructive.

1014 All these things need to be considered.

1015 There is also the need to design in the energy of action.

1016 Where is this to come from?

1017 ***Simpler***

1018 An even simpler summary would go as follows:

1019 TO: What do I want to do?

1020 LO: What Information do I have (and need)?

1021 PO: How do I get there?

1022 SO: Which alternative do I choose?

1023 GO: How do I put this into action?

1024 ***Backwards and Forwards***

1025 The five stages of thinking are not sealed compartments.

1026 When you have moved on from one stage to the next you can still go back to an earlier stage.

1027 For example, when working in the PO stage you may find you need some specific information.

1028 So you return to the LO stage.

1029 Or you may find that you want to redefine the situation.

1030 So you return to the TO stage.

1031 Do not overdo this moving backwards and forwards or you will lose all the advantages of having set stages and you will return to the confusion of ordinary thinking where one idea follows another without any discipline or structure.

1032 ***Enjoy Your Thinking Skill***

1033 Thinking does not only have to be about complicated problems and puzzles.

1034 Thinking is not only valid when matters are very difficult.™

1035 Enjoy thinking about simple things where you will get answers.

1036 In that way you will build up your skill in thinking, your confidence in that skill and your enjoyment of that skill.™

1037 Because something is easy does not mean that it is not worth doing.

1038 It is better to do something easy and to do it really well than to seek only to do difficult things and not to succeed at all.™

1039 Far too many people are put off the enjoyment of thinking because they have been led to believe that thinking should be difficult.

1040 It does not have to be.