



THINK TANK ^{T.M.}

A new tool for the mind

INSTRUCTION BOOKLET

by

DR. EDWARD de BONO

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*HOW TO GENERATE NEW IDEAS
BY THE RANDOM WORD TECHNIQUE*

INSTRUCTION BOOKLET

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Dr. Edward de Bono

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Note on the Author

Dr. Edward de Bono is an international authority on the thinking process and creative thinking in particular. He is the originator of “lateral thinking” which involves escaping from fixed ideas and moving sideways to provoke and discover new ones. His nine books have been translated into sixteen languages and have been the best-seller list in several countries. He has been invited to lecture all over the world from London to Tokyo, Buenos Aires to Toronto, Zurich to New York. The audiences have included management, universities, scientists, engineers, educators and artists. His international management seminars are always overbooked and his instruction in creative thinking has been sought after by such corporations as Shell, Esso, 3M, IBM, Monsanto, ICI, Procter & Gamble, Unilever, Univac, American Airlines etc.

Dr. de Bono was a Rhodes Scholar at the University of Oxford where he took a degree in psychology followed by a D.Phil. He has held faculty appointments at the universities of Oxford, London, Harvard and Cambridge where he is now. He is also the founder of the Cognitive Research Trust, which is developing ‘thinking’ as a full curriculum subject in schools.

Dr. de Bono has been concerned with thinking as a practical skill rather than as a philosophical abstraction. That is probably why his ideas have been of interest to both management and educators and especially to those who are involved in generating new ideas.

Books written by Dr. Edward de Bono

THE FIVE DAY COURSE IN THINKING

(Basic Books, New York
Allen Lane the Penguin Press, England and
Penguin books, England)

THE USE OF LATERAL THINKING

(USA title: NEW THINK)
(Basic Books, New York and Avon Books, New York
Jonathan Cape, England and Penguin Books, England)

THE MECHANISM OF MIND

(Simon & Schuster, New York
Jonathan Cape, England and Penguin Books, England)

LATERAL THINKING: A TEXTBOOK OF CREATIVITY (USA title: LATERAL THINKING: STEP BY STEP CREATIVITY

(Harper & Row, New York
Ward Lock Educational, England)

LATERAL THINKING FOR MANAGEMENT

(The American Management Association, New York
McGraw-Hill, England)

THE DOG EXERCISING MACHINE

(Simon & Schuster, New York
Jonathan Cape, England and Penguin Education, England)

PRACTICAL THINKING

(Jonathan Cape, England)

PO: A DEVICE FOR SUCCESSFUL THINKING

(Simon & Schuster, New York,
Penguin Books, England)

CHILDREN SOLVE PROBLEMS

(Allen Lane the Penguin Press, England and
Penguin Books, England)

Foreword from Dr. Edward de Bono

I have agreed to write this explanatory booklet for the THINK TANK device because I feel that in designing this device Savo Bojicic has provided a very practical way of carrying out some of the basic principles of lateral thinking. This type of thinking is very different from traditional sequential logic. Traditional logic is concerned with working out the ideas we have but lateral thinking is concerned with escaping from old ideas and provoking new ones.

There are very many ways of carrying out logical thinking - mathematics is one of them. But there are very few practical ways of carrying out creativity which is of course the purpose of lateral thinking. The THINK TANK provides just such a practical way. Moreover, it is so very simple to use that within a few minutes a person can actually start to generate ideas for himself.

How the THINK TANK works. What the THINK TANK is used for. And why the THINK TANK works will be described in this booklet.

Ideas matter

Ideas are the most important product of the mind of man. The history of humankind is the history of ideas. And each of those ideas, whether they were colossal or quite humble occurred in the mind of one man at one time.

In every field, ideas have been the rungs on the ladder of progress. In art, in politics, in philosophy, in technology and in business it is ideas that have mattered. Some innovators have had to be content with fame, others have made fortunes, and many have simply been ignored but their ideas have lived on forever after them. The Howard Hughes Empire was founded on inventions to do with oil drilling, the Polaroid camera was in the mind of one man, the Xerox copying idea on which so many business fortunes have been founded was also in its time the idea of one man. Yet the inventor of the safety pin sold out for \$300 at a very early stage.

Sometimes an idea is a brilliant innovation like Einstein's idea of relativity or the Crick and Watson unraveling the secret of DNA. At other times a succession of ideas has steadily advanced forward an original idea by a series of small steps. This was the case in the development of the airplane and television.

Some ideas require a detailed knowledge of a particular field. But other ideas are incredibly simple and require no specialized knowledge at all. One of the most important inventions of all time was the invention of movable type by Gutenberg. There had been books before but each one had to be hand-written or printed from letters carved into a wooden plate that represented a whole page. The very simple idea of putting individual letters on separate blocks so accelerate the printing process that books became available and with them knowledge.

Ideas and invention

Most people think of new ideas in terms of new inventions. Nylon was an invention by a single man, but it did require some knowledge of chemistry. Minute rice, which has been extraordinarily successful, Was the idea of a single man who had nothing to do with the organization who have produced the idea - and it did not require any technical knowledge beyond simple cooking skill. Even things that seem almost perfect can be developed by further ideas.

For a long time, the bicycle was considered to have reached a state of perfection. Then Alec Moulton came along and did some re-thinking. The resulting bicycle with its much smaller wheels was a great success. Christopher Cockerel invented the Hovercraft with a vacuum cleaner and a tin can. The hoola-hoop was someone's idea and so was the Frisbee and they are about as simple as you can get.

Ideas and organization

Many people have made fortunes in business not from inventing but from finding a new way of doing something, a new way of organizing some business. Fortunes were made from the simple idea of leasing IBM computers.

A single advertising idea like "We try harder" from Avis have changed a company's history. We often tend to think of ideas as physical things made of steel or plastic but some of the most worthwhile ideas have been ideas of organization: new ways of building, new ways of running a shop, new ways of lending money and new ways of selling.

The Sears Roebuck organization is today so big that it is not easy to look back and see that it was based on the simple idea of selling by mail. Within five years, an unknown Indian in England rose to be amongst the largest ship-owners in the world. His tankers are far bigger than any other tankers afloat. He did this by finding new ways of financing his shipping.

Ideas and problems

New ideas may seem a luxury. Not everyone feels the urge to be an inventor. Not everyone wants to be a shipping magnate. Not everyone wants to make a fortune. Many people are content to go their own way without any great ambition to be more successful. But no one can escape from problems. However much you may want to be left alone problems come chasing after you. The problems may be your own making but even if you carefully avoid these there are always the problems made for you by other people or bad luck. Some problems can of course be solved by straightforward logical analysis, but others cannot. These stubborn problems that do not yield to logic require the creative idea. When that creative idea arrives the solution is often seen to be so very simple that it seems incredible that it should ever have seemed so impossible to solve.

Ideas and people

People have problems about themselves and problems about other people. To everyone else such problems may seem very tiny and unimportant but to the person inside his own problem it is so big that it blots out everything else. What is worse these are often the problems that are the most difficult to solve because from within his own way of looking at things it is very difficult for a person to find the new way that will solve the problem.

No one can ever really solve the sort of problem for you. At best, someone else can suggest a new way of looking at things. It is much more successful if you manage to do this for yourself - but much more difficult.

Ideas and fun

Ideas do not always have to be useful. Ideas can be inventions, they can solve problems, or they can help people - or they can simply be fun. The mind is probably a tool that has to do useful things for us. We consider it as an automobile that has to get us places, if we choose to drive in that direction. We forget that it is possible to enjoy driving for the sake of driving if we know how. We can enjoy thinking about problems that we are never

going to be asked to solve. We can enjoy inventing things that do not need inventing. We can enjoy playing our minds as we enjoy playing our bodies in sport or an instrument in music.

How?

Ideas are vital for human progress. Ideas are useful and can be very rewarding for an individual. Ideas are fun.

But ideas are difficult - very difficult. Even a very creative person who is always full of ideas knows just how difficult it is to have ideas. He may have very many ideas from time to time but just when he needs a new idea to solve a problem it is impossible to call one up to order.

It is a sad paradox that whereas ideas are the most important product of the human mind the mind is extremely poor at producing ideas. So poor is the production of ideas by the human mind that as an idea-producing machine it must be considered an utter failure. It may take millions of minds and several centuries for a single brain to come up with an idea, that once reached is obvious. Spectacle lenses had been in use for a long long time before Galileo thought of putting one in front of the other and in so doing produced the first telescope.

So although everyone recognizes the need for ideas and appreciates the value of ideas there remains the rather large problem of how to have ideas.

Why?

Why is the human mind so very bad at producing ideas?

The surprising answer is that the mind is bad at producing ideas because it is deliberately designed to work in the opposite direction. In my books *THE MECHANISM OF MIND* (Simon & Schuster N.Y. 1969, Jonathan Cape London 1969) I describe the way the mind works as a self-organizing pattern making system. I do not want to go into those details here. It is enough to say the mind works to make sense of the world around it.

That is what makes life possible. If it were not so then it would be very difficult to cross the road, almost impossible to drive an automobile and hopelessly confusing to go shopping. In all these things, we have to allow

patterns and to expect our expectations to be fulfilled. You could hardly open every package of detergent you bought to be sure it did not contain coffee.

But ideas are the very opposite to the usual and the expected. Ideas jump right out of the well-established pattern and present a new and unexpected view. A mind that is designed to make the strange familiar cannot work in the opposite direction to make the familiar strange.

That is why the mind is so very bad at producing ideas. The mind is moderately good at logical thinking because logic moves in a steady manner from step to step. But ideas involve strange steps that could not be predicted.

Computers are good at logic but no good at generating ideas. That is why ideas are more important than ever today. Computers can do our reasoning for us but we need to develop the ideas for them to work with. Computers are vertical thinking devices, which work on the ideas we give them. But to create the ideas in the first place our mind has to use lateral thinking.

Creativity is the unnatural behavior of a patterning system.

Try

Consider the following three situations, which call for some new ideas. Spend just five minutes with each situation and in that, five minutes see how many *different* new ideas you can come up with.

1. An improvement for automobile tires.
2. A way of eliminating poverty without wrecking the system that creates the wealth.
3. A father is trying to persuade his drop-out daughter of 15 to come back home.

One of these is an invention situation, another is a mammoth organization problem and the third is a people problem.

What Can Be Done?

How did you do on those three situations? Did you produce five new ideas on each problem in the five minutes allotted to each? Are you really satisfied that the ideas you turned up were new and interesting? You may answer yes but the chances are that in the short time allowed, you turned up only a few ideas and even these were re-hashes of things you had thought or heard before.

What can be done about creativity and new ideas?

The first step is to appreciate that something can be done and that it is not a matter of mystical gift or magic or mumbo-jumbo. The three things that can be done are as follows:

1. Appreciate the difference between lateral and vertical thinking.
2. Put aside some of the rules and inhibitions of traditional (vertical) thinking.
3. Learn to provoke and stimulate new ideas.

In practical terms, this would involve reading one of the books on lateral thinking (e.g. LATERAL THINKING FOR MANAGEMENT, published by the American Management Association 1971) and using the THINK TANK device.

THINK TANK

This is a plastic sphere filled with some 13,000 different words and equipped with a shuffling device, which allows the words to be mixed randomly and presented at a window in a random fashion. The device seems simple enough and yet it can function effectively as an idea machine.

The THINK TANK is an idea machine or rather it is half of an idea machine. The THINK TANK cannot function on its own but requires the human mind. The THINK TANK is half the idea machine and the human mind is the other half.

The THINK TANK does not do the mind's work for it but it does stimulate the mind to produce its own ideas.

The THINK TANK does for the mind what the mind can never do for itself. The THINK TANK gets outside the mind in order to provide it with a new stimulus. The mind cannot get outside itself and so keeps on going round and round the same tracks when it is trying to escape from them to find a new idea.

The fascination of the THINK TANK is that it is so very simple and yet the effect can be so powerful.

There is nothing magical about the THINK TANK and it will not work on its own. It will only work in conjunction with a human mind. But it can help a mind that has never been creative to start producing ideas. The THINK TANK works best with a mind that has developed a confidence and skill in using it. But it will also start to work for the beginner.

How the THINK TANK works

You turn the knob on the side of the sphere and an arm sweeps through the 13,000 words and presents a random selection of words in the window. For instance, as I turn the knob on the THINK TANK in front of me the following words appear in the window:

daze
document
endless
eminence
blindfold
motion

These are the words that are easy to read. In addition, there are other words, which are partly hidden.

The THINK TANK is simply a device for shuffling 13,000 words and then presenting a random selection of words for the user to read. In this respect, the device is very simple. It is a device for presenting random words.

There are many other ways of presenting random words including the use of a table of random numbers and a dictionary.

The THINK TANK device developed by Savo Bojicic happens to be a particularly convenient and effective way of carrying out this function.

The words presented in the window of the device are truly random. There is no connection whatsoever between the words nor is there any connection between the words and the problem which is being considered. Why then does the THINK TANK work?

Why the THINK TANK works

To understand why the THINK TANK works it is necessary to understand the difference between lateral and vertical thinking. Vertical thinking is traditional logical sequential thinking.

It is based on reason. It is based on moving by sensible steps from one idea to another related idea. Each step in vertical thinking is reasonable. If there is no reason for making a step you do not make it. Vertical thinking explores relationships. Vertical thinking deals only with what is relevant. One of the essential processes of vertical thinking is a concentration on what is relevant.

It is easy to see that lateral thinking is almost exactly opposite in nature to vertical thinking. With the THINK TANK device a series of completely random words are presented. They are not there because they have any relevance to the problem. On the contrary, they are there precisely because they have no relevance. Whatever the problem being considered the set of random words turned up by the THINK TANK on a particular occasion would have been the same.

How can any word be connected with any problem?

Although the THINK TANK device does not make sense in terms of logical thinking, it makes a great deal of sense in terms of lateral thinking. Consider the following statement:

“There may not be a reason for saying something until after it has been said.”

In logical thinking, we must assemble our reasons and then move from those reasons to a statement. But in lateral thinking, the statement itself acts as a provocation to open up new ideas and new ways of looking at things.

Consider the statement: “Men have primitive animal instincts that are only lightly disguised by the habits and requirements of civilization”. This is the sort of statement that might be made by a reasonable psychologist, anthropologist or sociologist. There are reasons for making such a statement and it might be a useful way of looking at man.

But consider the statement: “Men are machines only capable of making mistakes”. There are no good reasons for making this statement and one has only to point at man’s technical achievements to show that man is capable of being very right and very precise. How else could he undertake the superbly accurate task of landing himself on the moon and then returning?

The statement makes no logical sense, but it does make lateral sense. It can provoke us into considering that an animal that does make mistakes but can then adjust to them might be very successful. For instance, it might have been a mistake of man to try and live in a climate that was too cold for him but by learning how to house, clothe and heat himself man profited from the mistake. The statement provokes us to consider what the nature of a mistake. A mistake is something that does not fit in with expectations or the accepted order of things. But all man’s progress has resulted from a refusal to fit in exactly with the current order of things.

It was Bernard Shaw who said that progress must be due to the unreasonable man since the reasonable man adapted himself to circumstances, but the unreasonable man tried to alter circumstances to suit himself. The statement may also provoke us to realize that we might expect too much of virtue from man. To realize that is we appreciated his enormous capacity for making mistakes we would not demand too much and might even organize our systems so that mistakes were not catastrophic.

Basic Difference Between Vertical and Lateral Thinking

The basic difference between vertical and lateral thinking is fully explained in various books of mine including LATERAL THINKING FOR MANAGEMENT, (the American Management Association); LATERAL THINKING: step by step creativity (Harper and Row) and PO: a device for successful thinking (Simon & Schuster). We can nevertheless summarize this distinction as follows:

The fundamental operation of logical thinking is judgement. We judge whether an idea is right or wrong. We judge whether an idea fits in with our established patterns of experience. If the idea does not “fit”, we reject it with the NO device. The word NO is simply a very effective way of cutting off a train of thought. Once we have such a device then any train of thought which cannot be cut off remains as true and valuable and proved.

But what does logical thinking judge? Logical thinking judges whether an idea fits in with the established pattern of experience. For instance, if I were to suggest that $2 + 2 = 5$ you would reject that idea because you know that in our number system this is not true. If I were to suggest that square automobile tires were a good idea you would reject this idea because you could not see how they would fit in with our experience of an automobile and how it functions. If I were to suggest that George McGovern won the 1972 American presidential election, you would reject this because it does not fit history.

If you start at the beginning of any pattern, then you expect to move along that pattern to the end. If someone suggests something that is different from or even contradicts the pattern, you judge it wrong and you reject it.

We must acknowledge that the logical system with its judgment basis has been immensely effective in developing ideas once they have come about. But by definition, it is not so useful in generating new ideas. At first, a new idea must seem to run contrary to established ideas otherwise, it would not be regarded as new. Almost every scientific idea and every invention has at

first been attacked as being unsound because it did not fit established patterns of experience.

Lateral thinking is very different from logical thinking because it is based on **movement rather** than on judgment.

An idea is used as a stepping-stone to another idea. Lateral thinking is never concerned with whether an idea is right or wrong but with where it leads. An idea, which seems wrong, may lead somewhere very useful. An idea, which is actually wrong, may lead somewhere.

An idea, which is contradictory and will always be wrong, may still lead somewhere useful. Lateral thinking is concerned with exploration not with proof. Lateral thinking is concerned with generating new ideas.

Is Lateral Thinking New?

In one sense, lateral thinking is new. In another sense, it is very ancient and has always been used by creative people. In his writings, Albert Einstein made it quite clear that he had to take provocative steps outside accepted experience in order to come up with his new theories.

Again and again creative scientists talk about the chance happening or the provocative leap that have opened up new pathways of thought. Poets use the provocative processes of lateral thinking all the time. For a poet the statement "There may not be a reason for saying something until after it has been said" makes perfect sense because that is what a poet is doing all the time, Painters and sculptors are forever breaking away from established patterns of experience in order to provoke new insights. Photographers who started out by carefully posing their subjects in studios now go out and look for the happy accident - the chance picture that cannot be planned.

The importance of chance inputs is now readily acknowledged in science and art. It may have been a hence observation, a mistake in an experiment, a chance meeting of two people. It is acknowledged that in order for a person to break out of the established patterns of thought there may have

to be some chance input from outside. This input has to be chance because anything that is actually sought for can only be sought for within the current patterns of ideas. The second ingredient is the willingness to make a provocative leap - think things that seem impossible or wrong. The third ingredient is to be ready to challenge accepted ideas. These three ingredients are the three basic processes of lateral thinking:

1. The use of 'impossible' ideas as steppingstones.
2. The deliberate use of random inputs.
3. The challenging of accepted concepts.

These processes are described in more detail in the books on lateral thinking. The THINK TANK device offers a very practical way of carrying out the random input process in particular and the other two processes to a lesser extent.

So in certain very creative minds the processes of lateral thinking have always been used. What then is new about lateral thinking?

What is new is the deliberate focusing on lateral thinking as a definite and essential part of the thinking process. Although creative people had tended to use lateral thinking this was always regarded as a matter of chance or a quirk of temperament. The lateral process was something, which was concealed or apologized for. The only respectable way to think was sequential logic. What is new is that lateral thinking has become a respectable part of thinking. It is now acknowledged that it is as much part of thinking as sequential logic. Lateral thinking generates ideas and logical thinking then develops them.

I, myself, invented the terms lateral thinking precisely to bring about this effect. The term creative thinking is not satisfactory because it has too many connotations of natural gift and artistic production. I invented the term lateral thinking to apply precisely to that type of thinking involved in changing concepts and perceptions.

Once this term is available then we can immediately see the distinction between the two types of thinking. In the same way the deliberate invention of the word PO: can do for lateral thinking what the word NO has done for logical thinking. The use of the word PO is described more fully in the book PO: a device for successful thinking (Simon & Schuster and Penguin).

The Mind As a Patterning System

It is one thing to say that the lateral thinking process has seemed to lead to creativity in practice and another to claim that the very nature of mind makes the process essential. We no longer need to regard the mind as a mystery box as did the philosophers of old. We now know a good deal about the way information systems work. Our knowledge of cybernetics and self-organizing systems, our knowledge of random nerve networks, and our knowledge of how nerves function all lead us to a view of the brain that was quite impossible until recently. Let us consider two different sorts of systems one of which we can call the “discrete system” and the other a “patterning system”.

Discrete System

Imagine a towel lay out on a table. Nearby is a bowl of ink. You take a spoonful of ink and put it on to the towel. The ink leaves a stain. The towel represents the memory system. The ink represents the input of experience. The ink-stain represents the resulting memory.

You repeat the procedure again and again until in the end you have several stains on the towel. If you wanted to make use of these memories, you would need an outside person to come and count them or erase them or something.

This is the type of information system that operates in a computer. It is also the type which traditionally we have assumed to operate in the brain.

Patterning System

Instead of a towel, we now have a shallow dish of gelatin (jelly or Jell-O). The bowl of ink is now heated. When a spoonful of hot ink is placed on the surface it dissolves some of the gelatin but stops dissolving it when the ink cools down.

So we have a shallow depression which corresponds to the ink stain on the towel. Each time the superfluous fluid is poured off. If we repeat, the same arrangement of spoonfuls we shall end up with a channel cut into the surface of the gelatin. This is because a new spoonful of hot ink will flow into an existing depression and make it deeper still.

The channel in the surface of the gelatin means that a spoonful placed at one spot can flow along the channel to end up somewhere quite different. This means that one input is changed by the surface into another. For instance, a spoonful placed at spot G might end up at spot H just as if a spoonful had been placed at H. Thus, the surface is moving the input from one place to another. This can be likened to thinking in which we move from one idea to another. The channels on the surface are patterns since the ink is forced to flow along them.

The interesting thing is that the patterning system requires no outside processes because the patterns themselves process the information. Moreover, the surface does not itself set up the patterns. It simply allows the incoming information to organize itself into the patterns.

All the evidence now suggests that the human brain at least in its perception acts much more like the gelatin system than the towel system. If it did not optical illusions and burnout would, both be impossible.

A full account of the self-organizing processes of the brain is given in my book "THE MECHANISM OF MIND" (published by Simon & Schuster, N.Y., Jonathan Cape, England, and Penguin books).

The important point about the two systems is that if we believe that the human mind is like the towel system then lateral thinking makes no sense at all. But if we believe that the mind is like the gelatin system then lateral thinking not only makes sense but is absolutely essential otherwise we remain locked in the same patterns for ever.

Patterns and Roads

Imagine the streets of a city. You know your way to work, to certain restaurants, to cinemas etc. You would tend to use the routes that was familiar to you even though many other routes exist. There would be no reason for trying the other routes because the one you know would always be adequate. One day a taxi takes you by a new route, which you at once realize to be much quicker than your usual route. Thereafter you use that route.

The mind is full of routes, or ways of getting from one idea to another, of associations, or trains of thought. But we always tend to follow the same familiar route because that is the nature of a patterning system. The ink in the jelly model really has no choice but must flow along the deepest channel (ie. the most used one). The other routes are there waiting to be used - if only we can somehow get on to them.

Consider the following problem, which I often use to demonstrate the difference between vertical and lateral thinking.

There is a singles tennis tournament of the elimination type. Each player plays one other player and the winner goes on to play another winner and so on. For this tournament, there are 111 entrants. How many matches would there have to be in all?

The problem is simple enough. You can start to work out how many games there would have to be in the first round and how many byes, then proceed to the second round, and continue until you had reached the winner. You could even start at the other end and count how many matches there were in all.

But with a simple piece of lateral thinking, you move *sideways* and instead of considering how to produce the winner, you consider how to produce 110 losers. Since each loser must be produced by one match, there must be 110 matches. It is that simple.

Once you reach the answer it becomes obvious in hindsight, just like the new route in a city.

There is a famous Irish joke about the couple who lost their way and stopped to ask an Irish farmer for directions to get to Tipperary. He scratched his head for a long while and then he said: “You know, if I was going to Tipperary, I certainly would not start from here”. We may think that story is daft but in much of our thinking we do try and set off from the wrong starting point — the wrong way of looking at the situation. It is the purpose of lateral thinking to help us find the better way just as in the tennis problem we could switch from starting with the players to starting with the losers.

The THINKTANK and Lateral Thinking

The THINK TANK is not a magic gimmick but a practical way of carrying out one of the basic operations of lateral thinking: bringing in a stimulus from outside. We have seen that in many of the discoveries of science it has been a chance happening that has set off a new train of ideas.

Do we then have to sit and wait for chance to provide some stimulus? This might take a long time. It would be very useful if we could hurry chance up and get it to provide some new stimulus when we wanted it to. This is precisely the function of the THINK TANK.

The words in the THINK TANK act as chance inputs. Each word carries with it a whole range of concepts. The words would never work on their own and that is why the THINK TANK is only half of the idea-machine. The other half is the human mind. The human mind is full of associations, routes, tracks, pathways etc. Unfortunately, it always tends to follow the same old familiar routes. The random words produced by the THINK TANK start the

mind off at a different point so that it has to explore new routes. And that is where the new ideas come from.

Try Again

Having discussed the background to the THINK TANK device and how it works we can now go back to the three problems we faced at the beginning of the booklet and try to generate some more ideas. This time, however, we shall use random words presented by the THINK TANK as a chance stimulus to get our thinking moving in new directions.

Problem

Think of some new improvements for automobile tires.

We turn the knob on the THINK TANK and read the following words in the window:

ghetto
ministry
hood
absorbency
slenderizing
instep

Putting these words, one at a time, together with the problem, see what new trains of thought are set off. Try and do this for yourself before turning to the next page.

Problem

Think of some new improvements for automobile tires.

ghetto: Gives rise to ideas of separation, of separate compartments. Leads to idea of having several separate compartments in parallel in the tire. Tyre would be filled by same hole and each compartment would have

simple valve on it. Compartments would go in circular fashion round tire. Punctures would be unlikely to affect all compartments. Blow-outs might also be reduced. By special design it might be possible to arrange compartments so that support of the car on central high-pressure compartment could be combined with low pressure for adhesion in other compartments. Ghetto and separation. Why is separation necessary? Why is separation of wheel and tire necessary? Perhaps a single unit that can be fitted to all cars. Tire and wheel no longer separable. When you need new tire you change whole wheel. Metal (or nylon) part goes back to factory to be attached to new tire. Constant circulation of wheels and tires Less garage work. More safety. Blow outs no longer a danger. Ghetto and walls. If tires consisted of long thin tubes wound round and round there would be much less strain on tire walls since the radius of each tube would be so much smaller.

ministry: In the political sense implies a department with a special function. If tires were more easily changeable then they could be much more specialized (for snow, ice, rough ground, high speeds, towing etc). In the religious sense implying church. Churches often have a special smell of incense (Catholic ones). Perhaps there should be a 'smelling' layer in tiers. If the tire got too worn away and so becomes unsafe this smelling layer would be in contact with the road and would give out a sharp smell which would be obvious to the driver. Similarly, this smelling layer could be in the walls of the tire so that if pressure fell the walls would come into contact with the road and would also smell.

hood: Hood implies sort of cowl or flap. Perhaps there should be forward facing cowls or flaps fitted to tire so that as the tire rotates a jet of air was thrown on the road in front of the tire. This would serve to disperse layers of water and so reduce the risk of the very dangerous phenomenon of aqua-planning which happens at speeds over 70 mph and causes the driver to lose control completely.

Perhaps these cowls could also be designed so that they gave out a whistle whenever a car exceeded the speed limit. So the police could tell at once whenever a car was speeding. Hood as covering.

Perhaps tire should be designed in two pieces: a support structure which was inflated and then wear structure which could very easily be replaced as soon as the tread was worn. This tread structure would fit over the tire and would be inflated simply to keep it in position.

absorbency: Absorbing water. Rubber does not normally absorb water unless made in sponge form. Perhaps a water-absorbing layer on the tire surface might give better adhesion in wet weather. An egg dropped on a dry layer of rubber sponge will break but if the sponge is wet the egg does not break for the water being forced through the holes in the sponge cushions the fall of the egg. Perhaps a layer of sponge wet with a viscous fluid would make tires far more shock absorbing because they would add the viscous element that is lacking from current tiers. Absorbing bumps. Perhaps if the tire was placed inside the wheel instead of outside it would absorb bumps better. This would mean having a solid outer wheel and then a small tire between this wheel and the axle. In this way the cushioning function of the tire could be separated from the adhesion function and it might be possible to use a much better adhesion material. Absorbency means taking up and holding. There could be a special resin containing small particles. When tires were beginning to wear you would drive to a special place where this resin was constantly sprayed on to a surface. You would then drive around on this surface and finally drive through a shallow bath of curing agent which set the resin and stopped it peeling off. In this way you could renew the adhesion properties of your tires whenever you wished.

slenderizing: Suggests thin. Back to the idea already mentioned of tires as long thin tubes wound around the wheel. Slenderizing as a process of making something thinner. Perhaps a method of making the tire thinner or thicker as required. Imagine a tire squeezed between two discs.

As the discs squeezed closer together the shape of the tire protruding from the edge of the discs would change. Perhaps some device on the wheel would be able to alter the thickness of the tire rather like a device in the hub could alter the pitch of the propeller in propeller driven aircraft. Suggests a thin disc attached to the outside of the wheel but not in contact with the ground. If there was a blow-out this disc would act as a temporary

wheel and prevent dangerous loss of control. Perhaps two or three thin tires on each wheel instead of one fat one. These might have advantages in terms of adhesion and would also reduce risk of tire failure since they would act independently.

instep: Instep of a shoe. The instep never gets worn. Perhaps a tire would first take the wear but when these were quite worn there would be a layer which suddenly wore away very quickly. The 'instep' between the ridge would now take all the wear. Perhaps a simple system of deliberately uneven wear to prevent tires becoming bald and smooth. Instep suggests in step. Might there be some advantage in coordinating the adhesion of the different tires in a car. Perhaps there could be a system so that adhesion alternated from rear to front tires to prevent locking in skids. Perhaps brakes and tires were somehow in step so that application of the brakes altered the adhesion area of a tire—perhaps by an actual tilt in the whole wheel to bring more of a specially designed tire into contact with the road.

From each of the above words many more ideas are of course possible. You yourself will most likely have arrived at a set of ideas completely different to those suggested above. The ideas outlined above were not the result of hours spent on this problem but occurred in rather less than ten minutes. The whole point of the random input technique is that it is not an analytical procedure but a provocative one. You allow the chance words to set off new ideas you do not analyze them to see what ideas they contain.

How To Use Random Words

The random word may stimulate and provoke your thoughts in a variety of different ways. The four main ways are, however, as follows:

function
association
direct
pun

We can look at each of these in turn.

Function

Here you take the function or process out of the word and see how it applies to the problem. For instance, the process involved in the word “ghetto” is separation or containment within separate compartments. This function is of course applicable to a lot of other situations. Discrimination is also derived as a function from the word “ghetto”.

The word “ministry” implies a special role or function. In the political sense it also implies centralization and control or even layers of organization. Functions are expressed in very general terms. Random words which at first seem very exotic may often be found to have a function that is very basic.

The function of a “hood” is as a detachable cover. That function can also be found in a dust bin cover or a milk bottle top. The function of a hood is also to protect from the elements or from sight.

As practice in extracting function and process from a random word try the following selection of words which were obtained from the THINK TANK:

victory
cuckold
pawnbroker
dupe
causeway
anemometer

In each case try and look at the function involved and then try and express this function in very general terms. Do this before turning over to the next page.

Function examples

We can now look at some of the functions suggested by the random words on the preceding pages.

victory: A clash between two opposing forces with one side triumphing. A sudden change of state with achievement of an objective. Winning as in a competition, performing better than others. A tangible reward for performance. Celebration.

cuckold: The basic process of deception: Things not as they seem to be. Breaking some law either moral or legal. A third party intruding between two other parties. Luring or tempting away. Unexpected attraction.

pawnbroker: Exchanging something later for something now. Emergency procedure to tide one over. A reservoir or repository. Exchanging time for money. The principle of interest and percentage. The principle of loans and security.

dupe: Being led astray. A series of actions which seem correct but are not. Illusion and deception. The planned process of deception. The operator and the person operated upon. Mistakes, errors, and contexts.

causeway: A path, passage or route A bridge or the function of carrying over. A causeway saves changing from car to boat. Usually artificial and built for the purpose. A means of separating (two stretches of water). Transport and communication function.

anemometer: Measurement. Measurement of force or speed. Measurement of something that cannot be seen. Rotation. Turbine effect of rotation through pressure. Must be placed in suitable position. Used for weather-forecasting or predicting.

None of the above are meant to be exact definitions of the function involved in each case but are the sort of different functions that can be suggested by the random word provided.

Association

Association is quite different from function but is nevertheless one of the basic processes behind the use of random words in lateral thinking. Philosophically speaking the function of a word is really an association of that word but in practice, it is useful to make a distinction between the two. For instance, a cat may be associated with a mouse but a mouse is not a function of a cat. The function of a cat would include mouse-catching, hunting, or protection (from mice).

Association will lead from one thing to those other things that are usually to be found as part of the same scene. For instance, a knife will lead to the idea of a fork or it may lead to the idea of blood.

Association may lead from an idea, other ideas which are part of the same class of things. Thus, a knife will lead to other things, which could also be classed, as weapons such as a dagger, a gun, or a club.

Association may lead through something that is only part of the thing. For instance, knife may lead to the idea of steel, or forging, or sharpening, or the knife sharpener.

Association may work through contrast. A knife, which is sharp, may be contrasted with a spoon, which is blunt. A knife, which signifies attack, may be contrasted with an olive branch, which signifies peace. Something, which is rigid may lead by contrast association to something that is flexible and so on.

Associations may also work through very personal memories. For instance to a certain person the word knife may immediately have associations with a particular pen knife he had as a child. How this knife was given to him by an uncle and how this uncle may have been killed by a horse. So in this case the knife leads to an association with a horse.

There is no limit on the way associations work. Nor is there any special advantage in separating the different types of association. The essential point of lateral thinking is to move from one idea to another. Association is clearly one way of doing so. In practice with the use of random words association is probably not quite as useful as extracting the principle or function. This is because association can only suggest new contexts rather than new ways of doing things. Sometimes the new context itself provides a new idea but usually you still have to go through the process of extracting the function.

“Wall” is an association of “ghetto” because ghettos often had walls surrounding them and in a more general sense there is always a metaphorical wall around a ghetto.

“Smell” is the result of a two-step association from “ministry”. The first step is to church and the second step to incense. Smell is then the extraction of the function of incense.

The experiment involving dropping an egg on a wet sponge is the result of a personal association from the word “absorbency”.

The association from “instep” to “shoe” is a very direct one since instep applies to foot and so to shoe.

It is much easier to generate associations than to extract functions. Try and generate at least four associations for the following random words presented by the THINK TANK.

tissue
bullfrog
abroad
bungalow
rot
aureole

Try and do this before turning to the next page.

Association examples

Four associations are given for each word. Your own associations are very unlikely to be the same.

tissue: Body tissue and health. Common cold. Telling lies. Presents wrapped up.

bullfrog: Man with thick neck. Pond. China ornament. Encyclopedia.

abroad: Passport. Airport. French police. Suitcase.

bungalow: Old people. Children's drawing of a house. Smoke from a chimney. Lake.

rot: Wood beams in an old house. A corpse in war. Bad teeth. An angry politician.

Aureole: The North Pole. A child with golden curls. A bird (mistaken for "oriole"). Gold.

Because associations are relatively easy to find but not so useful as functions it is suggested when using the THINK TANK that you first try and use functions but if these are not getting you anywhere then you can follow an association to a new place and then try with functions again.

To some extent associations are a way of introducing new words. That is to say, if you do not like the words presented by the THINK TANK you can follow an association to get new words. Thus instead of the words: tissue, bullfrog, abroad, bungalow, rot and aureole you might have generated for yourself the words: health, encyclopedia, suitcase, lake, teeth and gold.

This is allowed but first you must make some effort to work with the words presented.

Direct

The direct use of the words presented by the, THINK TANK is very easy to follow. For instance in designing the device Savo Bojicic had some difficulty with getting the mixing arms to rotate. From the device itself came the word “bent”. This immediately led him to bend the arms of the device, which solved the problem.

The direct use of the words means applying them directly to the problem situation.

In the motor tire problem the word “hood” was applied directly to suggest cowls on the tire itself.

In the same example, “absorbency” was applied directly to making, the tires absorb water or bumps or a new adhesive surface. “Slenderizing” was also used directly in order to consider tires that were thinner.

The direct use of random words may be regarded as an instruction to use the process suggested by the word directly. In practice, this is the easiest possible use of the random word.

Unfortunately, random words that can be used directly do not often present themselves. They also end to be more useful for ideas about things than for other ideas.

Pun

Sometimes the random word suggests another word, which has the same sound or spelling? In these cases, the connection between the words depends solely on the spelling or sound and has nothing to do with function or association. For instance, the association of “aureole” with “bird” depends on the word “oriole” having a similar sound.

The move from “instep” to “in-step” also depends on a pun. The move from “slenderizing” to “tenderizing” would have depended on a similar sound rather than an exact pun.

Often a particular word will have two meanings. In that case either or both meanings can be followed. For instance, the word “vice” might lead to ideas of wickedness and sin or to a carpenter’s vise for holding things. It could also lead to the idea of “vice-president” or even to the idea of “vice-versa”.

All these are of course perfectly valid because the THINK TANK is not an analytical machine but a provocative one. It does not matter in which direction you move so long as you move.

Further Example

The second problem posed at the beginning of this booklet is a good deal harder than the first. This is because it deals with a much larger subject affected by such things as human values and political emotions. But if the THINK TANK device is going to be any good at stimulating new ideas it must be capable of dealing with all manner of situations.

The problem:

Think of ways of eliminating poverty without wrecking the system that creates the wealth.

From the THINK TANK we get the following stimulus words:

**busboy
gantry
culprit
noiseless
carbolic
battlement
nincompoop**

Pause here and try these words for yourself before moving on.

busboy: I am not quite sure what this word means. Is it a person who works on buses? We can take it as such whether it is or not. Buses suggest trams and trams have fixed rails. Instead of dealing with poverty when it is already obvious perhaps we ought to pay more attention to the point at which a person enters on the track or rail that we know to lead to poverty. In other words we should set up mechanism to catch people as soon as they enter the track rather than when they have reached the destination called poverty.

Perhaps we could provide sidings or shunt places along the track to prevent further travel along this track. Perhaps a little money spent early on before the process is irreversible through loss of spirit and morale might actually save much money spent later. Busboy suggests collection of a bus fare. But transport is a necessity of life. Perhaps there could be a license system in which everyone gets a license for transport, basic food, housing, education and health services. This license would cost so much every year.

The license would be exactly the same, but the cost would vary according to the means of the person buying it. Thus, a very poor person might get a free license. No one would know how much the license had cost so there would be no question of people being looked down upon as there is with many welfare schemes.

gantry: A gantry is a structure to hold railway signals or it could suggest a type of crane. We have structures to create wealth but no structures to distribute wealth except the tax system. Are there alternative forms of distribution systems for wealth? There could be. Imagine a system in which a person could earn up to ten times the basic wage of his employees without taxation. He would have an incentive to raise their wage and to do so would try and increase productivity.

Any structure that distributed responsibility for poverty might be an improvement on the straight tax system, which left the responsibility with the state. Railway signals prevent collisions. Are the signals in society clear enough? Perhaps

industry and the government could react better if there were generally agreed signals, which could be anticipated.

For instance if inflation reached a certain level there would be an automatic freeze on profit margins and wage increases or a food subsidy. Such pre-arranged signals might be better than ad hoc reactions with clash and disagreement.

Culprit: Culprit implies blame. In an open society based on the ethic of hard-work to be poor is often regarded as almost a crime. Disinclination to work, shiftlessness, laziness and lack of forethought probably do account for a small amount of poverty but how much?

In most people's minds they probably account for more than is in fact the case. Perhaps a first step would be to do an accurate research survey to see just what the proportion was. If the proportion was very low, then it would be impossible thereafter to shrug off poverty as being self-imposed.

Instead, we would have to regard it as a part of our system and therefore to be corrected not blamed.

Just how much are profits in one section? Responsibility for poverty in another? If there is a connection is it one that could be foreseen or is it always unexpected. If it could be foreseen then free enterprise might be curtailed to the extent that it would be prevented from making those decisions which were clearly going to lead to poverty in some area. Should decisions only be made by those who are going to benefit from them?

noiseless: Noise implies action and bustle and speed. A rapidly moving economy will always increase the separation between the rich and the poor. How important is speed as such?

Is steady growth and potential just as good controllable? A car is not always driven flat out but can be driven with power and acceleration in reserve for when it is needed. Perhaps there should be controls on economic speed rather than on anything else. Noiselessness implies lubrication. On the whole society is singularly lacking in lubricants to

smooth the interaction between the different parts. Lubrication is quite different from control or regulation.

Control and regulation is the, business of the government but lubrication is no one's business.

Perhaps it is no longer enough to rely on the goodwill of people to lubricate society. Charities and such-like often serve this function especially in helping the very poor. Perhaps this could be put on a more sound basis.

For instance any person might be allowed to use any part of his tax to help others or better still to set up means whereby they can help themselves. Something of the sort works well in Brazil for the development of backward areas.

carbolic: suggests disinfectant. The ideal disinfectant attacks the germs without damaging the healthy tissues. The ideal disinfectant is used to protect against germs rather than to try and kill them after they have taken hold. But is poverty a disease of society or the product of a certain type of system and human nature? Is poverty some factor that infects the system like a germ or some defect like a vitamin lack. It could well be a combination of the two: the germ attacking system weakened by vitamin lack. We sometimes tend to feel that poverty might be infectious. That if life was made too easy for poor people everyone else would give up working.

Do the facts support this or is it another myth? If it were a myth then we could make radical changes in our treatment of poverty. Carbolic suggests hospitals. We spend a great deal of time, effort, goodwill and research to treat disease because we know that it can happen to anyone. Everyone is interested in preventing ill-health because no one is sure that he can avoid it. But we are much less interested in treating economic ill-health because we do not feel at risk. Perhaps this risk could be increased. Not by making rich people poor but by a system of pairing. A rich district would have responsibility for a poor district. A rich family would have responsibility for a poor one. This would change the motivation very quickly.

battlement: Battlement suggests a wall, which goes up and down as in a child's fort. Perhaps taxes should fluctuate in a similar manner so that one

year there was no tax and the next year double tax. This might make it easier for some people to accumulate a little capital and put it to use and this would eventually create more wealth for distribution. Battlement suggests battle and the usual clash between those that have and those that have not. Any structure that would make the one responsibility for the other might help.

In Yugoslavia workers in a factory were paid no wages at all because the factory was not making any profit. They had to live on bank loans that were repayable. Participation and co-ownership is only one way to achieve his. Profit increases geared to wage increases is another and there are many others once the traditional clash situation is discarded. One could even imagine a situation where industrial profits were geared not so much to product output as to service to society of which only one component would be product output.

nincompoop: We usually try sensible and sane solutions which do not seem to work very well. Suppose that on a small scale we tried very silly solutions even to the extent of increasing welfare payment for each week a person was out of work. If we tried enough rather strange ideas and carefully followed what happened we might find that some unexpected things happened. For instance, increasing welfare payments each week might counteract the sinking morale of unemployment and also put pressure on the community to increase employment or bear additional tax burdens. Nincompoop suggests village idiot. The village idiot had his place because it was a way of life which was not likely to attract others. Perhaps poverty could be treated as a way of life rather than a disgrace. After all monks, hermits, drop-outs and hippies actually seek a simple life - provided there is community support in times of emergencies. Perhaps we should concentrate not on eliminating poverty but on eliminating discomfort, disease, poor housing etc.

Using the same stimulus words, you may have come up with a completely different set of ideas. Some of the ideas suggested above are solutions, others are approaches, some are no more than questions. Generating ideas about a situation does not only mean coming up with cut and dried solutions, which are guaranteed to work. Ideas are the substance

of thinking and new thinking about a situation is what the THINK TANK device is about. Some of the ideas suggested above may seem rather farfetched but none of them is fantastic.

All of them touch ground at some point. The aim of lateral thinking is not to provoke a whole string of completely wild reason. An idea as it passes through its various stages may well swing out of the orbit of reason but in the end, it swings back in.

How To Use The THINK TANK

The THINK TANK is a sphere made of the same plastic material as is a telephone. On each side of the sphere is a knob. You turn one or both knobs away from you in a clockwise direction. As you turn the knobs the sweeper arm moves through the 13,000 plastic chips and brings a fresh selection to the clear acrylic-viewing window. Each of the white plastic chips bears a word printed on one side.

The words shown in the window may be in any position. Some of them may be easy to read but others may be partly hidden behind other words. On average about six words are usually easy to read. These are the words you use to provoke new ideas. There is no need to make a great effort to read all the words that are partly hidden.

What you must never do is to leave out some of the obvious words because they do not seem very helpful. This destroys the whole purpose of the THINK TANK for as soon as you start choosing words you like then the words are no longer random. Your choice would be determined by the ideas you already had and this is no way to provoke new ideas. For the same reason you should never turn the knobs, look at what you have got and then turn the knobs again in order to get some better words. Once you start doing that you might as well throw the device away. No matter how exotic, unpromising, farfetched or dull the words in the window may seem *these are the ones that have to be used.*

From time to time, you can take up the whole THINK TANK and give it a good shake. This helps to mix the words even more thoroughly. You then turn the knobs as usual to get a set of words.

In using the THINK TANK the two most important things are that you must deliberate and you must be confident.

Deliberate

The THINK TANK is an artificial and formal device for generating random words. Although the words themselves are random the use of the device should be formal. You must sit down with the device and turn the knob. You must then write down in a deliberate fashion the words that appear in the window. You now concentrate on these words and working through each one of them, you see what new ideas are provoked.

The deliberate nature of this procedure is important. If you just casually turn the knobs and wait for some word to spark off an inspiration nothing will happen. You will just find yourself looking at words, which have nothing to do with the matter in hand.

Ideas do come about by chance. The THINK TANK device is simply a convenient way of accelerating the chance process. Nevertheless, the use of the device must be deliberate. After all if you are playing roulette or dice the outcome may be a matter of chance but the ritual involved is very deliberate and formal. It is precisely the formality of the ritual, that gives values to the chance outcome.

Confidence

Confidence is not easy to prescribe. Telling a child not to be shy does not make it less shy. Telling someone to be confident does not make that person more confident.

Confidence is usually acquired through practice and as you use the THINK TANK more and more so your confidence must increase. It is a relaxed sort of confidence that knows that whatever words turn up

something can be done with them. This is very different from approaching the device in a hesitant way hoping that some useful word might be found.

There should be no doubt in your mind that the words will trigger off ideas.

To be sure some of the ideas may be very interesting and others may be pretty ordinary, but this does not matter at first. The main thing is to be confident that ideas will occur.

Although it seems preposterous to suggest that any one of the 13,000 words will link up with any problem at all the basis for saying so is strictly logical. Every word has so many associations and connections that eventually it can be made to connect up with any problem.

Anyone who is not convinced by his own results but wants to examine the logic behind the process should try and read "THE MECHANISM OF MIND" (Simon & Schuster N.Y. or Penguin books, London) which describes the behavior of patterning systems.

The THINK TANK device only makes use of associations already present in the mind of the user. But it serves to bring into consciousness ideas that would otherwise always remain hidden. Sometimes a whole idea may be provoked. More often, it is only a new starting point which eventually leads to a new idea.

Since the THINK TANK is only half the idea-machine it works best when the other half is working well. Confidence ensures that the other half is working smoothly.

Disappointment

You will be disappointed if you expect the THINK TANK to produce ideas on its own for you. It is your mind that has to produce the ideas under the provocation of the device. This may happen at once if you have a particularly lively mind. Otherwise, you are likely to be disappointed at first, as the only ideas turned up seem pretty ordinary.

This is because you have not yet learned to step quickly from one idea to another in the 'movement', process that is the basis of lateral thinking. If you expect an idea to be reasonable at every stage then you will only find ideas that are already familiar. If this is the case, make an effort to be a little outrageous until you overcome your inhibitions. Consider the example below.

In the first case the thinker is timid and conventional but in the second he dares to be outrageous. Problem: A new design for a toothbrush

Random Word: **eddy**

First case: Eddy suggests water so perhaps toothbrush should have an inbuilt water supply or even a jet. Eddy also suggests whirlpool so perhaps bristles could be spiral shaped to allow better penetration of crevices.

Second case: Eddy suggests Teddy and Teddy bear. Teddy bears are often well chewed. Perhaps the toothbrush should consist of disposable, chewable material, which was both brush and toothpaste at the same time. Perhaps even a sort of cap which you could bite into and then leave over your teeth all night.

Write Down

As you work through the ideas write each one down. This is part of the formality of the procedure. Furthermore, as you write down the ideas, new ones will occur to you.

The very process of writing something down helps to slow down the brain and so allow other ideas to be spotted.

Individual use

Most of the time you will be using the THINK TANK on your own. At home or in your office, you will sit down with the device either to solve a real problem or to practice your creative skill.

When you are using the THINK TANK on your own it is important that you should be on your own. A sort of conversational use of the device in which you read out the words to your wife, your secretary or your colleagues does not work. You need to be able to concentrate on generating ideas not on holding a conversation.

The device can be used in group situations but this is quite different from chatting to someone as you use it.

Time

How long should you spend with the THINK TANK device on any one problem? Each session should be relatively short. You turn the knobs and get a selection of words which you write down. You then work through those words and that is that. You do not go back to the device and turn the knobs again. You may use the device again for the same problem later that day or preferably next day but do not sit in front of it trying again and again.

As ideas continue to flow from the set of words you continue to put them down. If no more ideas seem forthcoming, you go on trying only for a short time, say five minutes. There is no point in sitting for half an hour trying to cudgel your brains into using the words. That is not the way a stimulus works.

Group use

Everyone knows about brainstorming sessions for generating ideas. The idea was originated by Alec Osborne. A number of people sit in a group

throwing up different ideas. Each idea is supposed to spark off further ideas in other members of the group. The main feature of the brainstorming session is that no criticism or evaluation of the idea is allowed. For some people these sessions do work reasonably well.

The main disadvantage is that you need creative people to start with. A brainstorming session with creative people will produce creative results. A brainstorming session with uncreative people will not be very productive because there is nothing to get their minds moving on to new ideas. There is also the possibility that very creative people are actually slowed down and inhibited in brainstorming sessions because they have to react to the ideas of other people instead of pursuing their own.

The THINK TANK device makes it possible for any person to hold a brainstorming session with himself. With its random words the THINK

TANK provides the stimulation that would normally be provided by the other people in a brainstorming session. No longer does one have to wait to get together a group of people before starting to generate new ideas.

Nevertheless, there is still some advantages in a group setting - not instead of individual creativity but in addition to it. Different people have different minds with different emotions and different experiences. The ideas that come from different minds can provide new ways of looking at things if not the new ideas themselves. As a practical device for providing different starting points the THINK TANK device allows two new sorts of creative group work: the Cascade session and the Saw-tooth session.

The Cascade Session

This is a silent group session of 6-8 people who come together to work out some new ideas on a particular situation. In fact the group do not even need to be physically together so long as the lines of communication between them are good. The session is organized by the chairman.

The Chairman

It is the chairman's business to organize the session. He sets a time and date and invites the participants. He also defines the problems that are to be considered. During the session itself he looks after the mechanics of the operation. After the session it is his responsibility to put together into a report the ideas that have been offered.

This report goes back to each of the participants for further comments.

Definition Of The Problem

This is very important. If the problem is defined in too narrow a manner then the ideas will all be rather restricted. On the other hand if the problem is defined in too general a sense the ideas generated may be interesting in themselves but not of much use for the immediate situation in question. I remember a session in which two groups were trying to generate new ideas about "doors".

In one group the problem was defined as: "How could we improve that door behind you". This led to a very narrow range of ideas about new handles, color, flap table etc.

The other group defined the problem as: "Ideas about entering and leaving spaces." Before long they were discussing architecture and town-planning and insulated clothing.

The proper definition of the problem should have fallen somewhere between the two extremes and might have taken a form such as: "New ideas on the design of doors but capable of being used in existing buildings".

A practical definition of the problem does not mean that during the session itself wild ideas must not be used. This would negate the process of creativity. Wild ideas can be used but they are used as steppingstones to move to other ideas. In the end the ideas must come back again into the orbit of reasonableness

Mechanics Of The Session

Requirements: -6-8 people
-a THINK TANK large note-pads
- and pens a central table or individual tables.

The chairman turns the knob on the THINK TANK. He then writes down each of the words presented on a separate slip of paper. If there are not sufficient words he turns the knob again to obtain the extra words.

Each slip of paper bearing one of the words is then passed to a member of the group. Each person working on his own uses the word as a stimulus word to generate ideas. These ideas (but not the word itself) are written down on the top sheet of the notes pad which is then separated from the pad.

The participants are allowed 5 minutes to generate ideas. At the end of this 5 minutes each participant hands his sheet to the next participant in a clockwise direction (including the chairman). For the following five minutes, each participant works on the ideas presented to him on the sheet. He can develop these ideas further or add to the sheet a new idea of his own which has been suggested by the others.

At the end of 5 minutes, the sheets are handed on once more. This happens three times in all. After that a new set of random words are obtained from the THINK TANK as at the beginning of the session.

A further 5 minutes is allowed and participants add the new ideas to the sheet in front of them. This is followed by a 10 minute open discussion session which seeks to consolidate the ideas generated up to that point.

Each participant reads out the ideas on the list in front of him. There will of course be much duplication but the different ideas are noted so that they will eventually be put together by the chairman in his report.

The session can be summarized as follows:

1. Get random words from THINK TANK and put on slips, which are passed to participants
2. 5 minutes individual work using stimulus word then pass on sheet.
3. 5 minutes reacting to ideas passed on then pass sheet again.
4. 5 minutes reactions to new sheet then pass on again.
5. 5 minutes reaction to new sheet.
6. Chairman gets new random words.
7. 5 minutes individual work on new random words
8. 10 minutes open discussion and summarizing

TOTAL TIME: 35 - 40 minutes.

Example

We can look at how an individual sheet might go. The problem is the one mentioned before: “New ideas on the design of doors but capable of being used in existing buildings”.

The random word: **auction**

First 5 minutes: Prices go up and up. Perhaps doors should rise up out of the way on a sort of flap or drawbridge basis. Auction bids are decided on a signal from the bidder. Perhaps a signal of sorts could be used to open doors from a distance rather like some garage doors are opened by radio control. Auction implies competition. Competition between walls and doors. Perhaps doors should always be treated as part of the wall instead of separately.

Second 5 minutes: Doors on a roller blind principle. Portcullis effect. The special signal could be a certain floor board or tile you had to step on to open the door or the sound of your voice (“Open Sesame”). Doors operate like light switches.

Third 5 minutes: Two sorts of doors: people doors, which simply allowed people through and were of a sliding type; and more massive doors for furniture moving etc. The sliding small door could be a part of the massive door. So the door would come as one unit and part of this would be the sliding people door.

Rather like a large church door or barn door with a smaller door for people.

Fourth 5 minutes: Doors, which only prevented access. An electrified curtain acting like an electric fence for cows. Doors which rolled forward on tracks instead of hinging. In this way the entire door could be removed if you wished. Roller blind type doors, which were always open but could be closed when necessary like a jeweler’s shop window. Head switches so that when your head touched a hanging ball the door opened.

New random word: **cocoa**

Beans suggest separate particles. There could be variable shaped doors consisting of small-scale like panels that slid over one another to assume different shapes. Chocolate is a dark

colour. Perhaps doors could be the lighting fixture of a room with internal lights that could be made to change color according to mood: warm red at eating times, cool green in the morning, randomly changing as a feature for entertaining.

Long-distance Cascade Session

Instead of the participants being seated around a table they can be separated in their own homes or office. Communication is then done by mail. All that is required is that a participant notes down his own ideas and then passes the sheets on the next participant. The order in which this happens is determined by the chairman. The timing is also determined by the chairman.

For instance, each stage may last one day or even one week. At the end it would be helpful (but not essential) to have a face to face meeting of all those involved.

Saw-tooth Session

This is quite like a conventional brainstorming session except that, the **THINK TANK** device allows an alternation between individual creative effort and group creative effort. The session is called a 'saw-tooth' session because there is this alternation. It is the alternation that provides the cutting edge of the session.

The session consists of a number of people (4-10) who are brought together to generate ideas about a situation. The people can come from widely different backgrounds but would ideally include the following:

Some people who are very articulate and creative even if the ideas they offer are not very deep.

Some people who are 'slow-burners' and although not able to sustain a flow of ideas can be counted on to produce valuable ideas now and then. Some people who are directly concerned with the situation.

Some people who are not directly concerned with the situation and preferably come from entirely different fields.

Chairman

The chairman convenes the session. He invites the people and sets a time and place. It is also his duty to define the problem as for a cascade session. In the session itself his function is to administer the mechanics of the session, to see that too many people do not try and speak at once. Especially to prevent participants from criticizing each other's ideas. If there is a lull in the production of ideas, then the chairman should be able to fill it with ideas of his own.

Note-taker

Each session should be recorded on tape so that it may be played back later. In this way ideas which were not made much fuss of at the time can be looked at again. It does happen that an idea which seems pretty ordinary when offered is later seen to be of much more use because of what has been said in between. But in addition to the tape recorder there should be a note-taker who summarizes the ideas as they are put forward.

This makes it possible for the chairman to call on the note taker to read out the ideas that has been presented so far. Unlike the cascade session there is no automatic recording of the ideas.

The job of the note-taker is difficult because he must summarize ideas in a crisp manner without leaving out the essence of the idea. A bad mistake made by some notetakers is to ignore an idea because it seems too similar to one that has already been recorded.

For instance at one session on new ideas for the police the note-taker did not bother to record the idea that policemen should wear different Colored helmets for different duties because she had already listed an idea that there should be different sorts of police. The ideas may overlap but they are not the same idea. The function of an ideas session is always to explore variation not to reduce it to generalities.

Operation Of The Saw-tooth Session

Ideally, each individual taking part should have his own THINK TANK, which is placed in front of him. Failing that there is a THINK TANK which is passed round from one participant to the others. Each participant writes down the stimulus words he gets. These words are supposed to last him the session so he takes one word at a time and generates as many ideas as he can from it.

The alternation throughout the session is between 10 minute periods of individual work with the stimulus words and 15 minute period of general creativity as in a brainstorming session. The chairman keeps the time rigorously. In the individual periods the participant writes down his ideas. In the general session he discusses these ideas with the others.

An average saw-tooth session would last 75 minutes that is three alternations.

If a participant finds that he cannot generate any more ideas from the stimulus words he can use the THINK TANK again. Too frequent use of the THINK TANK is not to be encouraged because it means that the participant is really waiting to turn up ideas that seem to make sense because they fit in with conventional approaches. For instance with the 'door' problem a random word like 'outward' is clearly less provocative than 'bazooka'.

Advantage of Alternation

The THINK TANK makes it possible to introduce this alternation process into brainstorming sessions because it allowed every participant to

generate some ideas on his own. It allows everyone to get started. The advantage of individual creative effort is that a person can pursue ideas on his own and can pause and reflect before proceeding further. In a group discussion there is no room for pauses because a pause is immediately filled by someone else's idea which becomes a distraction.

In a saw-tooth session, even the most uncreative participant has something to do while he tries to use the random words. He is not just sitting there staring into space and feeling uncreative.

In the saw-tooth session, none of the participants are required to produce the ideas they have generated on their own. This is entirely up to them. Someone who feels he has not generated any interesting ideas can simply react to the ideas of the others as in an ordinary brainstorming session.

Idea Practice

The THINK TANK can be used as a deliberate creative tool for generating ideas or solving problems. The individual and group use of the device have been described. It must not be forgotten, however, that the device can also be used in a less utilitarian way, it can be used for fun and for the playful exercising of the mind.

The borderline between play and exercise is very hard to define if indeed there is any separation between the two.

As animals play they exercise the skills that they are to use in everyday life. Human exercise does not have quite so specific a purpose but still has a large element of enjoyment. The development and use of a skill is an enjoyment in itself and it becomes even more of an enjoyment if there is an element of playfulness and fun as there is in the exercise of creativity.

I believe that thinking is a skill not a gift. I do not believe that thinking skill is simply innate intelligence in action. I have met too many highly intelligent people who were rather poor at thinking - and the other way round.

If thinking is a skill, it needs deliberate practice. The THINK TANK device provides an opportunity for just such practice.

When you sit down to practice creativity the first problem is to find a problem. It is not quite as easy as you might imagine because you tend to find problems for which you already have the answer or which are anyway easy to tackle. You can, however, use the THINK TANK itself to suggest problem areas.

Problem Areas

Turning the knobs on the THINK TANK generates the following random words:

camel
shrine
demon
rate
patrol
bloomers

It should be possible to turn each one of these into a problem.

Camel: suggests desert and an immediate problem. Generate some ideas on how to irrigate deserts or some general ideas on how to make better use of them.

Shrine: shrine suggests religions and beliefs. Many of the troubles in the world arise from a conflict of beliefs. Generate ideas on how conflicting beliefs can be harmonized without destroying the essence of either. How can two traditionally antagonistic beliefs live side by side? Also how can one overcome a belief or taboo, which acts against the best interest of the person holding it - for instance, taboos about food.

Demon: is there such a thing as evil? Problem: how to cope with people who have the specific target of wrecking the society in which they live.

Rate: the sheer rate of progress causes tensions and problems since different parts of the system move at different speeds. How can one slow down the rate of progress and still obtain the benefits of progress?

Patrol: suggests war. Most people are agreed that war is obsolete but how do you cope with other people who do not hold this view?

Bloomers: In their time, these were an innovation. What new ideas in clothes can you come up with (apart from fashion changes)?

So in one turn of the knobs we have come up with six problem areas. Five of these have been pretty huge problems. You may feel that you would rather tackle some smaller scale problems to begin with. Another turn of the knobs produces the following words:

flair
elevator
gallon
buffoonery
swank
tear

We can try and turn each of these into minor problems.

flair: some people have a flair for doing certain things. Try and find a way of telling if someone had a flair for advertising?

elevator: waiting for elevators is very boring. Can you think of several ways of making it less boring?

gallon: gasoline pumps seem a rather clumsy way of filling a car with gas. Can you design a neater way that could be much more automatic?

buffoonery: jokes are difficult to manufacture at the best of times. Devise a joke making machine.

swank: among other meanings means 'show-off'. How would you deal with a neighbor who was a showoff and unfortunately had a lot to show off about?

tear: could mean tear as in tearing paper or tear as in crying. To what special purpose could you put the tearing qualities of paper? Or, devise a method for collecting human tears in order to test their anti-bacterial activity.

These problems are obviously of a much smaller scope than the previous ones. It is usually possible from any random word to generate a big problem or a small one as you wish.

Idea clusters

If I were to assemble the following characteristics of an animal you would have no difficulty in identifying the animal: has a long neck and a hump and lives in the desert.

You would say 'camel' at once. The characteristics fit together to give a very definite concept which you know very well. But what if the characteristics are randomly selected? They might by sheer good fortune fit together to give a well-known concept. But this is unlikely. It is more likely that you would have to do a lot of creative work to try and put the characteristics together to give a plausible concept.

The next exercise with the THINK TANK is to turn the knob and get the usual random words. This time, however, the task is to try and fit those random words into a cluster that describes some concept or situation. It may be an actual concept, a situation, or even a story.

The words could be:

pal
internal
sacrament
saint
element
mark

This cluster seems to suggest a scene in which a seriously, ill man has an internal injury. He is actually dying and is being given the last sacraments which involves being marked with the holy oil. There is a picture of a saint in the room. His pal who has come to see him is not a Catholic and feels out of his element.

This may seem to have been very easy so we can try again:

Novocain
cardiac
airport
roadway
parlor
humbug

This cluster seems to suggest the tension of modern life: transport rush, deterioration in health both cardiac and dental, the humbug of struggling to keep up parlor appearances.

You should set yourself a time limit of 3 minutes for each cluster. You should try and fit in all the words but may have to leave some of them out. What you must not do is to simply add the words together. For instance, there would be little point in saying: "There is a city which has an airport and roadways and dentists and hospitals and many parlors and undoubtedly some people who are humbugs".

This practice in making sense of a random cluster can also, be played as a game. A group sits around the THINK TANK and someone turns the knobs. The words that appear in the window are then read out and each person can if he wishes to, write them down. The first person to produce a plausible cluster wins one point. Participants who cannot produce any cluster lose one life. If a person loses three lives he drops out. The game ends either when there is only one player left or when one player reaches a total of ten points.

The THINK TANK and Random Significance

If you are hungry your eyes are likely to settle on a plate of sandwiches on the table. If you are a boxing fan your eyes are likely to settle on the old boxing photograph hanging over the bar. We tend to notice those things which have the most significance for us - either at the moment or in general.

Since it is very difficult to see into our own minds we could try and reverse the above process and try and deduce what is significant to a person by what he notices. Psychiatrists have of course been doing this for ages.

Whether they get the patient to interpret Rorschach blots or TAT pictures or whether they interpret the significance of dreams, they are trying to use the patients output to get a view of his mind.

Fortune-tellers had been doing the same sort of thing for centuries before psychiatry became an established thing. The fortune-teller would produce the entrails of a cock or he would throw molten lead (or wax) into water and fish out the solidified result or he would pick out events from the day as omens.

In each case he was looking at a pretty unstructured situation and picking out the definite pattern which he thought matched. The pattern was of course the one that had significance for him because of his knowledge of

the person who had approached him. It was not a question of fraud. The fortune-teller would honestly pick out the pattern which he saw so clearly in the entrails, the wax, the lead or the events of the day.

But the reason he saw the pattern so clearly was that it fitted his own internal ideas of the situation. At a conscious level he may well have been totally unaware of these ideas.

So the entrails etc. acted as a way of exteriorizing the fortune-tellers own mind.

In the famous “I Ching” a handful of yarrow stalks were cast randomly on the ground. The person casting the I Ching would then look at the way the stalks had fallen and attempt to see which of the standard patterns they had formed.

Sometimes the pattern would be obvious but often was a matter of interpretation as for the chicken entrails. Even if the pattern is definite (as it can be if you use coins instead of stalks) the interpretation is still subjective.

This is because for each standard pattern there is a standard admonition. But like the words of the oracle each of these admonitions can be interpreted in different ways according to the mind of the person reading them.

The same thing happens with the astrological forecasts to be found in so many magazines today. There are people who swear by them because each time they find under their own sign of the zodiac something that is of very real relevance to them. The point is that the forecasts are written (like the oracles) in a way that covers many possibilities.

It is the expectant mind of the reader which picks out matters of significance. The more confident and expectant the mind of the reader the more of significance he is likely to find. This is not to say the forecasts are false. On the contrary they serve a useful purpose in allowing the reader to look into what is significant for himself at that time. Reading the forecast the

reader is working creatively to find significance just as he would be doing if he was using the THINK TANK device.

Instead of yarrow stalks, oracles, chicken entrails or signs of the zodiac we could use the THINK TANK to produce a random situation. This random situation has no mystical significance and it is not arranged (as far as one knows) by the stars or anyone else. And yet the random situation can serve this rather useful function of allowing the mind to reveal itself to itself by creating significance.

The water diviners forked twig has no mystical powers. Its shape allows it to amplify to a great extent the very slight turning in of the wrists of the diviner. The diviner himself is not aware of this turning in of his wrists and it may well be the subconscious effect of some power to detect water. The stick itself simply acts to make visible to the conscious mind what is present in the unconscious mind at that moment.

The words in the THINK TANK can serve the same purpose.

candelabra
piston
espy
proboscis
misrepresent
bi-lateral

These words in the window of the THINK TANK were shown to a man and immediately suggested to him the troubles he was having with his marriage. The words that had especial significance for him were 'misrepresent' and 'espy'. He was jealous and suspicious of his wife and had tried to spy on her on occasions. He wondered whether this jealousy was well founded or whether it was itself the cause of the trouble.

The same words shown to a girl of 19 had a different significance. She saw them as signifying the quarrel she was having with her parents who always wanted to stick their noses (proboscis) into her business.

The candelabra signified the dining table and home for she dined at home on Sundays and this was when she was questioned. The 'piston' signified her very first boy-friend who had had a motor-cycle. Her father had disapproved of the boy regarding him as a hippie just because he had a bike and long hair (misrepresentation).

It might be suggested that the same set of words could be used over and again for they would have different significance for different people. To some extent this is true but the person would never believe that they were random but would regard them as a deliberate selection of words and as a result he or she would try and give the expected answers. If the knobs on the THINK TANK are turned in front of the person then there can be no doubt that the words are a random selection from among 13,000 others.

Opposite Use

In some ways this use of the THINK TANK is exactly opposite to its use to generate new ideas. The 'significance' use of the THINK TANK acts to pick out the ideas that are dominating the mind whereas the provocative use acts to escape from the usual way of looking at things in order to generate new ideas. But if one looks deeper the two uses are not opposite at all but very similar.

The significance' use picks out ideas that are dominant but not necessarily conscious. By making them conscious the THINK TANK can bring about a change in the way the situation is looked at. This is exactly the same as the creative use.

In both cases the mechanism is the same: left to itself the mind repeats the same tracks nor can it jerk itself out of these tracks without some outside help.

The random input of the THINK TANK provides this help. When you look into a mirror you see yourself not the mirror but without the mirror you would not have the opportunity to see yourself.

Random Words and Memory

Just as random words can be used to trigger off new ideas and new trains of associations about a situation so they can also be used to trigger off memory trains. Sometimes we can remember things at will but at other times we have to have some trigger that sets off the memories. The random words turned up by the THINK TANK can serve this purpose admirably.

Let us look at some random words:

shutter
saddle
underground
solicitation
choir

Each of these words triggered off a chain of memories in the mind of one man who was looking at them.

The memories were as follows:

shutter: Camera, photography. My emigration to North America, struggle to start life in a new adopted land . . . I decided to try photography. I took pictures of people on the street. A policeman stopped me. License, he said, license was necessary. My trip to City Hall. No results. What to do? I decided to photograph stores. Pictures were developed, mounted and sold to merchants. The price - one dollar. Some would pay some would not. I asked for 50 cents if refused. Some paid, some didn't. Then I asked 25 cents and most would

pay. Few refused. To them, I donated the photograph since it was useless to me. I had great satisfaction in saying: "Mister, I came here as an immigrant a month ago, you seem to be poorer than I am, here take the picture, it's yours free." The expression of shame shown on their faces was my greatest satisfaction. A Jewish lady paid me five dollars for a picture. Great surprise to me. "Why"? I asked, and she said: "You took a chance to make that picture not knowing if it would sell. Some day you will be a rich man. I want to encourage you." Strange breed, these North Americans!

saddle:

Reminds me of leather, which reminds me of the first pair of shoes my father bought for me. They were brown with wide white laces. I was six. My friend Mike use to kidde about them. He said I looked like a girl. My laces were like the ribbon in Vera's hair. That infuriated me . . . Ah, Vera, that little beast! She was pestering me. She always insisted that I should pull my pants down so she could see better, how I was different than she was. For a string of wild berries she would undress and let us boys examine her as long as we wanted to. My friend Mike, he was a character. I remember we played a game of judging. I was a judge and I sentenced our six year old friend Peter. His sentence was to sit on the grass and let Mike urinate on the top of his head. Mike got scared because he feared two huge spinsters who were Peter's aunts. They always protected Peter. They beat us

up if we did anything to him. Since Mike refused to carry out my sentence, as a judge, I decided to be executioner too. Mike held Peter firmly and I urinated on his head. Eventually I got caught by his two **fat aunts**. They beat the daylights out of me.

underground: Revolutionary turmoil. Internal struggle in my native country. Mr. Bendeck! I remember him. He was a German spy, but I had no idea of his secret activity. For me he was one of us. He had a beautiful girl friend whom he wanted to save from the dangers of war. In a hut one day, he confessed to me about his spying. He wanted my help in saving his girl friend even at the cost of his own life. In an instant I had an urge to kill him. I almost did. But I needed him. We were isolated and a passage through German-held town was essential for my salvation. He had a car. We made a deal. For the price of sparing his life, he would drive me in his car through the territory held by Germans. Here we were in that old car, he, his girl and I. He drove through town. He was stopped several times by German patrols. No problems. He showed them papers hidden in the heel of his shoe. Driving out of town we hit a downhill road. The brakes failed. He could not control the car. Suddenly, shots were fired from the surrounding mountains held by my comrades. They did not know I was in the car. They shot at any car because only Germans could have cars, no civilians. The car was speeding

faster and faster. I saw one way out - jump. I opened the door and jumped out on a spot that looked most favorable. I was badly bruised all over my body. Bendeck and his girl continued uncontrollably downhill. A few moments later the car hit the rocky side of the road and burst into flames. That was the end of Mr. Bendeck and his girl.

solicitation: This reminds me of my door to door selling of unbreakable plastic dishes for \$36.00 a set, down payment \$2.00, balance on a conditional sales contract. The manager told me that the most important thing was to get inside the house. Once there, he said, make a nuisance of yourself until the lady of the house pays you the \$2.00. He told me how to display the merchandise on a table, how to make sure there was a table-cloth, pull it up and hurl all of the dishes around the room, then take plenty of time to collect them. I followed his instructions to the letter. Once the lady told me that I must go, she was preparing dinner for her husband. The baby was crying, she tried desperately to get rid of me. But I was persistent. When I found a dish on the floor I would push it under a chesterfield so I could spend more time looking for it. I never found it until the poor lady, out of sheer desperation, signed my contract and paid me the \$2.00. The irony of all this was that I found out later the same set of plastic dishes was selling in a large department store for \$16.00. What a strange country this North America is I

thought!

choir: This evokes memories of my high-school days. I was singing in a choir. The leader was a beautiful lady teacher. She was perhaps six years older than I. I thought I was infatuated with her. One day I had a chance to dance with her. It was a great thrill. Later on, I succeeded in kissing her. She must have considered my advances as juvenile restlessness and did not react. Some months later she married a man who was teaching in the same school. My disappointment was quite intense. There was nothing I could do. Next year she taught in my class as a substitute teacher. I was surprised and saddened to see that she was in an advanced stage of pregnancy. As she was walking between benches she passed my seat. I did not know what got into me, but I pointed my finger at her stomach, touched her and asked: "Is that a sore?" She looked at me, burst out crying and ran out of the room. It goes without saying that I was severely punished.

The THINK TANK can serve to trigger off real memories so that they can be re-lived and enjoyed. Like looking at an old photo album one can range back through a life of experience not in a systematic way but more enjoyably, in a random way. As you turn the knob of the THINK TANK you have no idea, which words are going to come up. You cannot anticipate where the memory trigger will take you. It is this unexpectedness, which creates the enjoyment of the situation.

The mind is a library of experience but few people bother to go to a library unless they want a specific book. But if a book arrives in the post they would be more likely to enjoy it. In a similar way few people explore

their memories unless they are looking for something specific. The random word picks out a particular area of memory and presents it on its own like a book arriving in the post.

Your memory

Try the following random words on your own memory:

matchbox
author
stem
overturn
outvote
chronometer

Random Words and Fiction

Random words can be used to trigger off real memories but they can equally well be used to trigger off fictional memories. Suppose you are writing fiction but have difficulty in getting started. You know that once you have started the story will take over with its own momentum but to get started from a blank piece of paper is not easy.

You use the THINK TANK to provide some random words that will trigger off memories that never really happened but can be made to happen in the world you are about to create in your mind. There is nothing new about this method because fiction writers have used it for a very long time. What is new is that the THINK TANK offers a convenient and practical way of generating these random words.

The one thing that everyone discovers sooner or later is that you cannot generate random words just by wanting to do so. Of course, it is easy enough to think of a word but you never trust it as being random because you know that somehow there was in your mind a reason for choosing that word. It is the obvious randomness of the THINK TANK device that is its advantage.

Because there is no reason connecting the words you do not spend your energies trying to discover the reason but set about creating reasons. Imagine you are writing a detective story and the THINK TANK turns up the following words:

heartlessness
hawser
surplus
bloom
foreword
parry

See if you can start building some theme around these words in terms of both characters and plot. Pause and try for yourself before proceeding further.

Surplus suggests a crook who instead of trying to minimize the evidence went in the opposite direction and created so much evidence that there was confusion because the cleverer the detective was the more confusing the evidence became. Hawser suggests sea and perhaps a cruise ship setting (pretty standard for a certain type of 'closed' mystery). Foreword suggests an author who in trying to help solve the mystery confuses things still further by using his fictional powers to elaborate matters.

The key to the mystery lies in the fresh flowers which appear daily on the captain's table although the ship has been out of touch with land for some time. Parry and heartlessness suggest fencing with someone who has no heart and is therefore rather difficult to kill.

Similarly if the criminal does not set out from the starting point of fear of discovery he may well be difficult to find. In other words a crime that is so exactly tailored to the mental habits of the person who will be involved in solving it (because he is known to be on board) that it becomes impossible to solve except by the author's fictional methods which are laughed at in the beginning but eventually triumph.

Try a further set of words. But this time imagine you are writing a romantic novel:

raindrop
strip
nougat
gorilla
snarl
sublimation

Random Words and Problem Definition

When I give seminars to management I often get complaints that I do not define the problems well enough. The complainers say that if the problems were more precisely defined then they would find it easier to come up with solutions. This is like saying that if I have solved the problem for them, life would be easier. Outside school textbooks there are no such things as neatly defined problems which you are asked to solve.

Instead, there is a general problem area in which you have to work. The first stage may be defining the problem or rather finding several alternative ways of defining the problem. If you can do that satisfactorily then you are well on the way to solving the problem. So in my seminars I give problem areas not precisely defined problems. It is a function of creativity to help define problems not simply to find solutions for already defined problems.

Since the THINK TANK is a practical device for stimulating the lateral thinking process that leads to creativity we can see how it helps in defining problems.

As an example we can go back to the last of the three problems that were set at the beginning of the book. "A father is trying to persuade his drop-out daughter of 15 to come back home."

We turn the knobs on the THINK TANK and come up with the following random words:

cheetah
tonsil
waltz
ensor
prostitute
minister

Pause here and try these words for yourself. See how each one of them can help you define the problem in a particular way. Taking the words one at a time we can see how they work to help define the problem.

cheetah: A very fast animal that lives in strange parts. Sometimes used for hunting gazelle in the desert. Brief bursts of speed. So re-define problem: “The problem is to persuade his daughter that what she sees as a life-long commitment may be no more than a passing phase of youth. There is also the problem for the father that he should see it as such and therefore perhaps accept it without forcing a long term crisis.”

tonsil: tonsil suggests health and medical attention and therefore help in general. So re-define the problem: “The father’s problem is to let his daughter know that if she needs help at any time he will be there to provide it and that though she wants to drop out and make her own life he will help as long as he can.”

waltz: an old-fashioned dance though in its time it was very daring. Fashions change. So re define the problem: “The problem for the

father is to get his daughter to see whether she really likes the drop out life or is simply conforming to a current fashion. Is her apparent independence really a lack of independence and a need to conform to youth culture?"

censor: This one is pretty obvious. "The problem for the father is to try and get his views across without conveying them through the usual heavy father image. The problem is to communicate rather than seem to be censoring.

What he says may matter less than the attitude in which it seems to be said.

prostitute: Also pretty obvious. The father probably has an image that his daughter will end up as a prostitute. So may really be worried about the long-term consequences rather than the short-term ones. So re-define the problem: "The problem for the father is to persuade his daughter to try the drop-out life on a temporary basis rather than not to try it at all."

minister: suggests church and religion. There is often a metaphysical side to dropping out. Perhaps the father ought to see where he has failed in this respect and to see how the metaphysical side of dropping out can be separated from the material side. "The problem for the father is to find something worthwhile to offer his daughter rather than just to forbid her to follow her own plans."

In each of the above cases there has been a re-definition of the problem rather than an attempt at solution. Inevitably the re-definition does at once

suggest a number of solutions but work has still to be done on the actual solution before it becomes usable.

When does one work directly for a solution and when does one try and re-define the problem first? The answer is paradoxical: first you try for a solution and then you try and re-define the problem. Then of course you can try for more solutions.

To make the point we can do the following: Random word to suggest a problem area Random word to suggest a solution.
Random word to suggest problem re-definition Random word to suggest further solutions.

All these can be obtained by one turn of the THINK TANK knobs:

To suggest problem area: **standby**

To suggest solution: **daily**

To suggest problem re-definition: **catacomb**

To suggest further solution: **visitor**

Pause and try this exercise on your own before proceeding further.

Problem area

Standby: suggests the problem facing airlines. People make reservations on flights and then fail to turn up. If there are standby passengers these seats are filled otherwise they are lost because few people want to travel without a reservation.

Solution

Daily: This suggests a solution at once. You pay a surcharge for a reservation and if you do not keep the reservation you lose this amount. If you keep the reservation it is refunded. On a daily basis the nearer to flight time that you make the reservation the less is the surcharge so if you tried to book on the day flight itself you would pay no surcharge. The net result is

that only those seriously intending to keep their reservations will make longterm bookings.

Problem re-definition

Catacomb: suggests many hidden passages, suggests religious persecution. So re-define the problem: “The problem is to find and pick out those ‘sinners’ who are not going to use their reservations.”

New Problem Solutions

Visitor: someone who comes for a brief time, no permanence. This suggests making reservations.

self eliminating: unless a reservation is confirmed one week before the flight and one day before it automatically lapses (ie. no permanence in reservations). Special postcards could be given to passengers making reservations for this purpose or a special phone number to ring. This solution would tend to pick out those who were not likely to use their reservations.

With this sort of exercise you find yourself reacting to a random word at each stage. And as you get more used to using random words it can provide good idea practice.

General points about using the THINKTANK

1. The THINK TANK has no magic in itself. It is simply a practical device for generating random words. The idea take place in your mind not in the device. The device acts to provoke new ideas by offering new starting points, which open up new tracks of thought.
2. To understand why random words work and why an apparently illogical procedure is actually based on

logic you need to understand the basic process of lateral thinking and in particular the nature of a patterning system (see THE MECHANISM OF MIND published by Simon & Schuster N.Y. and Penguin books, England).

3. The two most important things in using the THINK TANK are deliberate practice and confidence. Unless you practice you will not acquire skill in using random words. Your practice must also be deliberate. From practice arises confidence. Do not expect your ideas to be wonderful from the very beginning or on all problems. It is enough that you start generating ideas. They will get better and better.
4. Never select from the random words that are provided by the THINK TANK. Never choose the ones that seem most likely. Never give the knobs another turn because you do not like the words offered. Always make a sincere effort to use the words that appear.
5. The use of the **THINK TANK** for generating ideas, solving problems, redefining problems, idea clusters and practice, indicating significance, triggering off memories has been described. Several other uses of the device may suggest themselves. The important point to remember is that there is no magic in the device but that it serves to generate random words.
6. The THINK TANK may be used by individuals or by groups. The device allows an individual to generate for himself that external stimulation that normally only comes from groups or new surroundings. The device also makes it easier for members of a group to start and follow individual lines of thought instead of just reacting to others.

7. The THINK TANK may be used in a serious manner to solve problems or generate ideas. It can also be used in a deliberate practice manner to develop the skills that may later be used seriously. But in addition it can also be used for fun, enjoyment and the pleasure of mental stimulation.
8. It must be emphasized that the THINK TANK like lateral thinking itself is not a substitute for the logic of vertical thinking. Both are needed. If your logical analysis is not getting you anywhere then you need some new approach. Similarly once you have got an idea you need to develop it logically.
9. The aim of the THINK TANK is not to generate a large number of utterly impossible ideas but to come up with worthwhile approaches or ideas. It is possible to use ridiculous ideas on the way there but the final ideas should re-enter the orbit of reasonableness.
10. Even if you do not generate any fantastic new ideas the mere use of the THINK TANK may help you to realize that there is more than one way of looking at things. If you still choose the established way it is because you have considered others not because you could not think of any other ways.

An Experiment

The only way to test the random word technique is to try it out for yourself and to see whether it provokes any new ideas in your mind. Nothing else should satisfy you. It is quite easy in an experimental situation to show how the introduction of a random word will stimulate new ideas.

You let a group of people generate as many ideas as they can and then when they have run out of ideas you introduce the random word. At once a new flow of ideas starts off. The experiment described below is rather different and deals with the use of a random word in tackling a specific problem.

A manufacturer of cast iron soda siphons found that his customers disliked the siphons because they could not tell when they were nearly empty. It was impossible to see through the iron walls and the weight was such that you could not tell that way either.

This problem was given to a group of 44 people who came up with a number of suggestions. These were mainly concerned with cutting windows in the side, using a weighing device or using a pressure measuring device. A random word was then introduced and the group tried again. At the end all the ideas from both sessions were pooled together and the whole group voted for the idea they liked best. The winning idea involved attaching a hollow ball on a wire to the central tube of the siphon. When the water was above a certain level the ball floated. But when the water fell below that level the ball hung free and clanged like a bell clapper against the side as soon as you lifted the siphon.

The preferred idea occurred no less than 14 times as often after the random word as before it. The random word had been picked by number from a dictionary and was in fact “earring”. In hindsight it is easy to see how “earring” would suggest something dangling.

On another occasion, a different random word was deliberately used. This time the word was “knife”. This word turned up a different set of suggestions. There were many suggestions for cutting windows in the side.

There was also the suggestion of making a knife-edge ridge on the bottom so that the siphon would balance upright when full but would tilt when nearly empty. There was a further suggestion of “cutting the siphon into two halves” which immediately led to the idea of always having two siphons so that when one entered you could be sure the other was full.

Different Words and Different Ideas

Many people realize that different random words will provoke different solutions and so they ask how they can be sure the random word they use is the right one. This is a mistake.

There is no ‘right’ word. The function of a random word is to provoke new ideas. Different words may provoke different ideas and some of these ideas may be more useful than others are. But since there is no way of telling which words are going to be the more productive you simply concentrate on generating ideas from the random word you get.

Quite often different random words will actually channel back into the-same solution. For instance in dealing with traffic congestion the words “clothesline”, “gramophone” and “muscles” may all provoke the same solution. Clothesline suggests a line or track. Gramophone suggests a disc and a track.

Muscles suggest athletics and also a track. So in each case you might start to think of tracks for vehicles. But in the problem of designing a new saltshaker, each might turn up quite different ideas. Clothesline suggests a shaker, which could actually be placed in the oven to dry out damp salt. Gramophone suggests a spinning disc, which would sprinkle salt just like a spinning disc can be used for spray painting or planting seeds.

Muscles suggests a rubber device which would squeeze and which for each squeeze delivers a known amount of salt.

What matters is that you should be generating ideas not worrying about whether you are on the track to the 'right idea' which is hidden somewhere beyond your reach.

There is no such thing as one right idea. There are a number of ideas, which could be useful, and if you find any one of them you will be doing well.

Training in the use of the THINK TANK

The THINK TANK is a practical device for generating random words. Having the THINK TANK around makes it rather easier to practice the technique than having to use a dictionary. So the first point is to put the THINK TANK in an accessible place. That is to say on a desk or side-table so that you can use it whenever you want to. Regard it as part of the environment rather than as a book that you take down now and again to study.

The second point is not to try and do too much. Many people get so enthusiastic that they try at once to use the THINK TANK to solve the most pressing problems in the world or their own private lives. Or else they try and solve problems that are so general that no answer will really be satisfactory: for instance, "How do I become a millionaire?" or "How can I be very happy?". There is no harm in trying this sort of problem so long as you are not disappointed if you do not get a fantastic answer within a few minutes.

It is best to start with fairly small-scale problems and develop confidence in this way. If there is a family group you can try the idea practice game suggested earlier in this booklet. Or else each person can write down one random word and then use that word to tackle the same problem as the others in the group. The resulting ideas are then compared.

If you cannot think of any problems then use the THINK TANK to generate the problems as suggested previously.

If you have some actual problems that you want to consider then remember that you can use the THINK TANK not only to generate solutions but also to re-define the problem. If the problem has been around a long time this could be as useful as trying for a solution straight off.

The third point - and easily the most important — is to be deliberate about it. A casual turning of the THINK TANK knob to see if it suggests a wonderful answer at once is useless because it is not the THINK TANK that has to do the work but your own mind.

You have to be deliberate in your intention to generate some ideas and deliberate in your use of the THINK TANK. Many people assume that because the THINK TANK is a chance device that the way to operate it is to casually turn the knobs again and again until some solution suggests itself. They believe that the more words you turn up the more chance there is of getting a solution. THIS VIEW IS COMPLETELY MISTAKEN.

The purpose of the THINK TANK is not to generate a lot of wild ideas some of which might be useful. On the contrary, the purpose of the device is to provide a new starting point for Thinking but then to pursue that point with deliberation and vigor. It is exactly the opposite of casualness. If you use a casual approach you will get no results at all because all you will have will be a number of random words unconnected to the problem. It is the effort you make to move on from those words that opens up the ideas. This point does need emphasizing very strongly because it makes all the difference between success and failure.

The best way of ensuring that you use the THINK TANK with sufficient deliberation is to write down the random words on a piece of paper and then try and generate ideas from each word. These ideas are also written down. The mere fact of writing down the ideas gives your mind time to pursue the word further. If you simply look at the word without writing

anything down, you tend to get discouraged if there is any pause in the flow of ideas.

The fourth important point is not to try and cudgel your brains to make the word work. The right approach is one of relaxed confidence with an element of humor. You must expect ideas to turn up and you explore the words with this expectation. It is never a matter of forcing your brain into action.

Provided you are deliberate about the procedure as suggested above you will have enough concentration without having to make a special effort.

The fifth point concerns time and frequency. It is best not to overdo things at the beginning because you will expect too much too soon. A 10-minute effort everyday would be ideal. This applies to the direct generation of ideas. The other uses of the THINK TANK suggest as the idea practice can of course take much longer as they are done in a group situation.

It is best to use two 10-minute periods separated by at least an hour than to sit for an hour trying to generate ideas. Of course, while ideas are still flowing you can continue. At each session do not turn the knobs more than once. Write down the five or six words that appear and then work on these. Make an effort to use each one of these otherwise you will soon find yourself just picking out the most likely looking one and ignoring the others and this spoils the random effect.

You may occasionally have to turn the knobs very slightly backwards in order to make some of the words easier to read. Read only the easily readable words if there are sufficient and only try the partially obscured ones if there are not sufficient.

The sixth point is to practice on your own unless you are definitely using a group situation. As mentioned earlier practice that is neither solitary nor yet a deliberate group is not much help.

Summary

The THINK TANK is a practical and convenient device for generating random words. Such random words can be used in a variety of different ways as part of the technique of lateral thinking. This type of thinking is just as definite and deliberate as logical thinking. Lateral thinking is concerned with generating ideas whereas logical thinking is concerned with using established ideas.