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IT'S IMPOSSIBLE, SO WE'LL DO IT
The recovery of the Jerada mine

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Abstract

Can they close the mine? Will they close the mine? Jerada is on the verge of disaster. An outsider is dropped in as the new director, and although his training is in American high finance and he has no experience of mining, his attitude shows a certain mad defiance: "*The situation is desperate, which means we've still got a chance.*" His turnaround strategy is both forceful and practical and brings to mind Samuel Johnson's remark: "*When a man knows he is to be hanged... it concentrates his mind wonderfully*"

*The Association des Amis de l'École de Paris management school organises discussions and distributes accounts of these on the understanding that the ideas therein are solely attributable to their authors.
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I - PRESENTATION

Situated in the north-east of Morocco, the Jerada mine is the Moroccan Coal Board's only production site. Active since 1927, the mine employs 5,700 people including about 75 engineers; it is also the birthplace of the Moroccan trades union movement. The turnover is approximately one thousand million Dirham, that is, around six hundred million francs (\$110 million).

Mining is carried out to a depth of 1,000 metres, where the deposits can be found along many faults, the marked effects of strong tectonic activity and narrow seams. It is a difficult and complex deposit where security is a constant worry both in terms of defining procedures and implementing them. Nonetheless, the mine produces very high quality anthracite. On the basis of current knowledge of reserves, geologists estimate that production could continue until 2005.

The actual mining operations are difficult to mechanise. Shortly before I arrived they had tried to mechanise mining one more time and again met with failure; mining is therefore still carried out with hammer drills. Working conditions are difficult: the coal dust is not fully humidified and masks, although obligatory, are infrequently worn. As a result, there are numerous cases of silicosis. When I arrived there were still many accidents, causing up to ten deaths a year.

The miners themselves mostly come from the south of the country, which has a strong mining tradition. A town of 70,000 inhabitants has developed near the site to support the mine and is still somewhat isolated from the rest of the country.

The outsider

When I took over the mine two years ago it was in serious trouble. Productivity was low and it seemed that Jerada anthracite could no longer compete on international markets, particularly in the face of cheap coal from Russia and South Africa. The mine was about to be shut down and a preliminary package of measures provided for 2,000 redundancies. The prospect of a major social conflict in this area, both significant in trades union terms and close to a neighbouring country in a state of turmoil, terrified many people: Jerada was scary.

Why me? True, my father had been a miner in the north of France, but I wasn't born to the job or the place - something which would, in turn, prove to my advantage. After finishing my thesis in psycho-sociology, I did an MBA in finance in the US, which led me to work for various major American banks all over the world - from the United Arab Emirates to Nigeria. When I was approached I was back in Casablanca, where I ran Citibank's financial engineering department.

As a business banker, I had frequent meetings with the minister for Energy. Considering Jerada's critical situation, and faced with the resignation of its directors, he had decided to make a bold move and appoint a director with neither engineering background nor local connections. My background and experience seemed to fit his image of 'the outsider' - in his opinion, the only person who could take up such a challenge. The challenge interested me: I was getting tired of American banking mentality and of restructuring plans managed from Wall Street offices. I decided to go for it.

I am your last chance!

When I arrived at Jerada things were really bad. Not only had productivity dropped dramatically, but it seemed as though the mine's managers were totally paralysed. They followed one guiding principle: don't rock the boat! Better to let everything rot than to make any change!

After a frosty welcome - I clearly wasn't wanted - I had a trying first few weeks. I had to deal with everything imaginable - from the production manager who left immediately on a month's pilgrimage to Mecca, to the drivers who abandoned me in the middle of nowhere, as well as intimidation, attempts to oust me by witchcraft and telephone threats. I was also under pressure from various quarters to favour this or that employee - which I categorically refused to

do. However, it wasn't long before this psychological warfare turned to my advantage and gave me the chance to turn the situation around quickly.

The Office of Mining Research, a panel of expert engineers, was in charge of constructing a ventilation shaft indispensable to the mine's development. The project, staffed by professionals from Rabat, was already behind schedule and was nowhere near completion. I had only just arrived when I was told that the entire team was taking a month's holiday! I wasn't going to wait, so I took advantage of this to promote local talent, previously out of favour with former management. The Jerada miners got the work done in good time and the project was completed at a lower cost. This also gave me an early opportunity to restore the pride and self-esteem of local teams.

At the same time I scrapped the original redundancy program which was far too extreme. Instead, I decided to let the necessary reductions in personnel happen over a period of time, taking advantage of natural attrition, professional incapacities, as well as enforcing the legal retirement age - too often bypassed by individual arrangements.

In the face of passive and active resistance I had to act quickly and firmly. To everyone's surprise, I severely sanctioned both the neglect of safety measures, and the professional errors of managers. For the first time ever, engineers were fired. I also pushed undermotivated managers to leave, and replaced them with dynamic individuals who had been kept in junior positions by the previous management for no obvious reason.

Above all, I went down to the coal face. Knowing nothing about mining techniques, I learned the basics of the job from the foremen. I encouraged the managers, who mostly hadn't gone down themselves in years, to do the same since it was clear that they were achieving little above ground.

Choosing the right words

These first steps were taken in a spirit of urgency which was real enough, but which I also used deliberately as a powerful motivator. I took advantage of it to push people, applying Samuel Johnson's principle that "*when a man knows he is to be hanged in a fortnight, it concentrates his mind wonderfully.*"

I played on the reversal of values, and the paradox: "*It's precisely because it's impossible that we'll do it*". I forced everyone else to rethink their approach. "*We have one great strength, in that we have nothing left,*" was the theme, "*The more difficult it is, the more determined we'll be*" was the motto. I was inspired by Bruno Bettelheim and his analysis of men's reactions in extreme situations in order to try and rouse in everyone the will to fight for the mine's survival. "*I'm going to turn this mine around whether you like it or not, with methods you can hardly imagine. Are you prepared to fight for that?*" Everyone had to have faith, or it wouldn't work. I played on their pride: "*This is an experience people would be happy to pay for*", "*We have been chosen because it's so difficult.*" The 'exploitation' department, all too aptly named, was rechristened Production: here, too, symbols have their power.

Dignity is also a powerful motivator. Everyone needs to be acknowledged (the Hawthorne effect¹). In desperate situations when people are cornered, you see surprising forces for renewal emerging, just waiting to be recognised. The Press was invited to witness the undertaking ("*The whole world is watching you*") and some journalists neglected their scoop in order to participate in the adventure of the turnaround.

We also had to be positive about the crisis ("*The scale of the difficulty is equal to our ability and determination*"), to draft the epic of Jerada's recovery, equal to the myth of Jerada the workers' fortress. I also established new rituals: management control is a powerful symbolic tool: "*From now on, someone's watching, someone's checking*", they would think at the coal face. In response to the crisis, meetings ran late into the night: the answer to these problems can't wait, we must act quickly, as quickly as possible, we must decide at once, move at once.

¹ I refer to Elton Mayo's famous study carried out at the General Electric factory in Hawthorne from 1927 to 1932

All these emergencies - sometimes artificially dramatised - kept the flame alight, maintained the creative tension of the teams and kept the pressure on.

Finally one union held out. A first attempt to mobilise the workforce resulted in a partial defeat: our unflinching determination rallied the miners to our common cause. Disbelieving, the union didn't give up at the first attempt. Their second attempt at a strike was an even more crushing defeat: the workforce refused to follow them and came to work en masse. The survival of Jerada was now in their hands.

The mine recovered

And the results?

Statistically, the results speak for themselves:

- increase in production from 552,000 tonnes in 1991 to 604,000 tonnes in 1993, a rise of 10%
- increase in productivity per employee from 647 kg in 1991 to 822 kg in 1993, a rise of 27%
- reduction in personnel of 643 over two years
- reduction in number of accidents: e.g.. no fatal accidents in 1993
- reduction in cost price from 1028 Dirham/tonne to 938, a fall of 9%
- balanced accounts
- no State subsidy for the first time in 1993
- no more coal imports since 1992

- comprehensive application for the first time of contract programme co-signed by the State;

The most telling result is, of course, the continuing operation of the mine, and hence the maintenance of jobs and of the town.

There are also some less quantifiable results which are undoubtedly just as important:

- recovery of self-esteem
- atmosphere of openness, fairness and rigour
- recovery on an individual level
- resurgence of individuals' awareness

What were the principles which guided me in achieving such a result ?

Strategic thinking, direct and forceful action

I didn't formulate this intellectually straight away: you never speak of your own actions, but only in terms of how you yourself see them. Everything happens directly and primarily as action; but in intellectual terms my interests are along the lines of Donald Schön: how does action generate knowledge? The theory is always buried somewhere beneath the surface but we have to let action draw it out.

Sometimes it's difficult to explain how I went about it, and what were the gestures, the metaphors, the stories and images and other details which helped me persuade those involved to accept the reality of what was happening. I may not have accounted just now for what I did in the best possible words: my technique comprised elements which are still little-known, and contains some enigmas even for me. It stems from the question of knowing who I am, and I would answer that one learns to know oneself through actions.

In this kind of crisis we have to understand that nothing is achieved unless we are acknowledged by others. We have always to provoke action, to consider others and to appreciate them. "*Action is structured by its qualities of narration*", said Paul Ricoeur. In the circumstances we have to establish more than just a simple spirit of co-operation, a real facility for mediation; we have to encourage a genuine appreciation of people.

At Jerada the Press, for example, contributed far more than mere publicity, they gave us the recognition that something really was happening. There have been two other levels of recognition: that of State institutions (Board of Directors, minister in charge etc.) who certainly recognised the restructuring work but took a low profile, probably to avoid recriminations. There is also this 'Business Life' seminar which in its own fashion confirms that something has taken place, validates its effects and approves the strategy which achieved them.

We always need an independent observer, a third party, to appreciate what we have done and to avoid a two-way relationship with a mirror, or the excesses of hubris. This provides a useful balance to my inevitable partiality as an agent, and also allows the establishment of a mutual relationship, generating knowledge just as it arises out of acknowledgement.

In a way everything was already in place: the recovery was achieved with the same workers, the same managers, the same equipment, even if I did give power to some who had none previously. My work lay mostly in establishing a human relationship with the miners, in putting in place a mechanism for survival. I established myself by means of a sort of graft onto natural processes which I sensed intuitively. I sensed that there was still life in the mine, even if I only heard talk of decline and closure within fifteen years - but on a human scale, fifteen years is a tremendously long time. I therefore had to set up a consideration of survival, create a space for the mine to breathe.

In that, my strength was a certain provocative authenticity: when I'm speaking people believe me because it's clear that I believe what I say. After the event people told me: "*We took courage from you because you weren't frightened*".

The final element, and not the least, was Providence. People give in to mechanical balance of power and forget the power of the human spirit. In this kind of situation there's a real element of spiritual management: at the height of the crisis people were praying for me. After I had taken certain very spectacular measures such as closing the central office in the capital, I was told: "*Now people will start to have faith in you*". Actually the main phenomenon of this recovery was the staging of an intrigue in which the protagonists were dramatic effect and the use of surprise, the effect of emotion, and recognition. For that I had to know how to gamble, how to choose alternative solutions, how to revolutionise people's awareness. With hindsight all that may seem facile, straightforward; but at the time it certainly wasn't.

I experienced everything possible at Jerada, faced everything imaginable. I shook things up; and I had to develop a management style which was sometimes cold and brutal. Too often we forget this archaic and savage aspect of management.

II - DISCUSSION

The value of ignorance

Q : The miner's job is extremely technical and not something you can make up as you go along. There's a great deal that is unwritten, there are things which old foremen know and engineers will never learn. "*It's going to give way!*" How can they tell? Nothing allows you to predict it scientifically. You say that "*It's a powerful advantage to know nothing*", but there are limits; and if one knows nothing, how does one make use of people who do know ?

A.D : When I said that I knew nothing, I didn't mean that I left it at that - I made the effort to learn. You said quite rightly that nobody knows anything, not even the engineers. Since one has to go right down the scale to find people who really know something about effective practice I wasn't at much of a disadvantage.

However, we have to learn - but transversally, laterally. I didn't have much time but one can learn the basics quite quickly - it's Pareto's 20/80 principle. Of course you have to know what a top shaft is and a deep shaft, and the ABC of blasting. The important thing is to identify the basics, and the engineers don't necessarily know that; and it's not necessarily what the text books tell you.

In effect, I learned a great deal by going down to the coal face. I stayed on site for nine months without going to Rabat, and sometimes I was there from 4am to 1am the next day. I undertook this intensive apprenticeship in order to understand what it was all about ; and it wasn't always related to the engineer's knowledge as set out rationally.

Q : An Indian or a Spanish engineer would think it demeaning to go down to the coal face; in their opinion an engineer is someone who takes reports but stays on the surface. How does a Moroccan engineer react ?

A.D : It's the same thing, When I arrived, none of the engineers ever went down the pit. One of the first things I did was to establish visits to the coal face, telling people "*If the mine can work without your going down there, so much the better; but it's not working, so you'd better go down.*" Everyone went, and that's how I learned, not so much about mining engineering but what was essential at an operational level to run the mine without being led up the garden path. It wasn't so much expert knowledge as foreman's knowledge.

However, knowledge amounts to more than what people know, and what they don't know how to, or won't, or can't, put into words. There's sometimes a gap between what Donald Schön calls 'applied theory' and 'theory in use', and it's not easy to bridge that gap.

It also helped that I empowered the locals as against those in the capital.

Q : Your position as external appointee reminds me of the *podestà* in Venice. Given that everyone was more or less closely related, they were impelled to appoint an outsider: if there should be any trouble, the outsider would be expendable without causing too much damage.

A.D : Absolutely. There is a slight difference though: one shouldn't be too foreign to the field where one intends to operate, it's the idea of 'the right distance'. That was my situation, with one foot inside the camp and one outside.

Q : Who found the foreigner that you were ? And why did you accept the job ?

A.D : Providence! I'd met with quite a few challenges at Citibank, which wasn't a bank in the traditional sense but a somewhat abrupt (to resort to euphemism) American financial institution, where everyone was constantly on the qui-vive. This prepared me mentally. I left Citibank because I thought I was being offered a complete challenge, not just a financial one such as I was used to, but a social, political and even technical one where I would no longer be 'one among many'.

I came from outside, and that's why I took the step; but to do that I had to come to terms with reality. You can't fool anyone in a mine; in finance you can bluff, but in a mine you have to deal with reality.

Q : I often tell my students: "*When you're young you ought to spend time with people who have to take the consequences of their mistakes right away: sailors, printers, foundrymen, miners. If they get it wrong they're pulled up within hours.*" A manager in an office with air conditioning and a carpet can talk garbage for years without anything serious happening to him.

A.D : Citibank was one of the biggest Third World creditors, lending to Brazil, to Africa, etc. As a reward for signing these loans, those in charge had been promoted to extraordinary levels some years before, when actually they had nearly dragged the bank under. In the time that it takes to build up a dossier, the reckoning always comes through after the event. In the world of mining, operational imperatives make sure that you can't bury your head in the sand for long, and accountability is more evident: the people before me didn't exactly leave on a red carpet.

Managing the battlefield

Q : You were moulded by Anglo-Saxon culture, in which the rules of management are codified and put into practice over long periods, and you arrived in a Third World country. Clearly you've rethought all you were taught. What's left of the original model in your practice ?

A.D : In effect, I did acquire a certain Anglo-Saxon financial and management culture, but it didn't really mean anything until I had 'forgotten' it (*Aufhebung*, as Hegel would say, in the sense of absorbing and outgrowing something). The management control I established at Jerada was for me primarily a ritual, a very sophisticated and elaborate one, but nonetheless a ritual. I'm persuaded that management control has symbolic effects before it has operational ones.

People say, "Management's *checking, it's serious!*" If it has operational effects as well, that's a bonus.

With my Anglo-Saxon culture, then, I established a certain number of important things - but keeping a distance, knowing exactly why I used them and always taking their symbolic aspect into account, and following up with tight management, budget control, performance indicators, reports etc. The night meetings also, for example, served primarily to show that we had no time. In this state of emergency day and night had no meaning. At the beginning the meetings were frequent and sometimes lasted until 2am. Sometimes, with a specific problem where we had to act quickly, I called those responsible that same night. People had to be present on site, they had to understand that we weren't thinking in terms of years, but of months, to turn the mine around. The journalists dubbed this "*Jerada, managing the battlefield!*"

Actually it was despotic, it's true ; but if we didn't meet the challenge within a few months there would be no second chance. This wasn't manipulation, it was real - a little dramatised maybe, but real. Naturally when people are caught up in such urgency nothing else exists, but circumstances dictated it and we had to go through it. The difficulty afterwards was to create other crises to keep the momentum : it's much harder now, because the emergency is over! Samuel Johnson's noose isn't dangling any more, the urgency has gone...

Jerada must survive!

In the end, the two strikes which were extremely political and remote-controlled from the capital, were a good thing. At that point things were beginning to settle down, and I took advantage of them to reintroduce all the rituals. Jerada is one of the bastions of the trades union movement in Morocco and the unions were powerful, political in the negative, manipulative sense of the word. Their actions were completely divorced from the mine's reality because they had other things at stake, other overall strategies at a national level. These people were living on the memories of former glory.

They didn't understand that I wasn't prepared to fit in with the old strategy of connivance. I told them, "*I won't buy social stability at any price*". In the past, when there was a strike the director called the Ministry for instructions. Everything ground to a halt while they waited for the authorities to resolve the crisis. When it happened to me I was on site, and I called together the staff and their representatives and gave them this metaphor: "*It's quite simple, I'm a surgeon operating on a patient who's critically ill, and somebody cuts off the electricity. The mine's like that, it's on the operating table and the strike will destroy everything. Either you accept that it's all over, or you don't accept it and you go back to work.*" I added, "*If I come to the conclusion that this mine is impossible to run, I'll put as much energy into closing it down as I am now into keeping it going*".

The next day at 3am everyone, managers included, was there at the coal face. I had set up a big banner which read "*Jerada must survive!*" The authorities didn't agree, finding it too provocative. Paradoxically people had a strategy of letting things rot but at the same time nobody wanted to close the mine, it was almost as dangerous as turning it around. What they wanted was a middle ground - subsidies, extensions, absence of responsibility, slackness.

The strike fell apart from the first day and not one picket was allowed to set up. One of the unions tried to block access to the mine from the miners' lodgings. There again I did something radical which didn't please everybody : I sent out police 'patrols', not to break the strike but to be visible in the towns and particularly at the points of access to the mine.

Above all, what made the strike fail was that people were aware that there was a serious restructuring project going on. The union didn't immediately understand why it had not been followed, and tried again a week later. This time it was a total failure since on the first day, to demonstrate their willingness to work, even the usual absentees were present and we had 110% attendance!

Words and action

Q : You've quoted language amongst the motivators you used. Did you use various styles of speech according to your audience? Was it reality which dictated your speaking or did your speaking shape reality ?

A.D : Is it reality which creates truth or is it speech ? That reminds me of a short story by Borges in his book 'Fictions', a very short piece called 'The Circular Ruins'. A magician who has gone to live in the mountains labours day after day to create a man with only the force of his mind. When he is on the point of achieving it, an enormous fire breaks out. As the flames reach him he realises that he himself is only the projection of another man's dream, that he is being dreamed by someone else.

I believe that I created the reality I wanted, that I determined it. The fact of using a certain language is not just a device or a clause of style, it genuinely allows you to create, to project something significant.

In the mine there were various fronts, various partners and stakeholders. Naturally I modified my way of speaking but the heart of it was consistent: urgency! It's difficult to involve a civil servant in his office 700 km from the mine in this urgency, but it is possible to involve him in the social and political stakes. Sometimes I really forced my way; for example, I told the controllers who refused me this or that piece of funding: *"It's been decided at the highest level that the mine should survive, there's no question of that; so I must have the financial means to achieve that"* . Even if these people didn't sign the papers, I made sure that they would lose sleep over it that night.

Q : You put more emphasis on 'knowing how to be' than on 'knowing how to do' anything. Have you experienced major crises in your own life ? Have you formulated the learning processes you yourself have gone through ?

A.D : Yes, of course; that's what makes me like problems, even seek them out. When I find them I'm reassured, it means I've found something real, something to push against. Normally people prefer to avoid problems, to bring in instant solutions, 'to fix it', as the Americans say.

What should be carried over ?

Q : You've now been offered the task of restructuring the electricity sector in Morocco.

A.D : My work has been recognised and I'm very proud, not just for myself but also for the miners. They're very proud themselves because they consider that it's thanks to them that I've had this nomination.

Q : Will you use the same technique in this new undertaking ?

A.D : Is there any method that can be repeated? I hope that some things can be carried over: knowing how to go about things (although I'm wary of repetition), certain general psychological motivators (although the business cultures are different), certain tools for mobilisation. People react to the same thing: pride, the desire to mobilise and to be appreciated. Above and beyond techniques, what matters is putting in place routes for survival and growth.

Q : I've found that in management problems there are four aspects with a certain independence of each other: materials, people, institutions and sacred things. Reality is whatever offers resistance, and changes according to the business in question.

You acted primarily on two aspects: people (you threw out the dead wood and empowered the competent) and the sacred; that is, appearances, vocabulary, rituals, everything which makes people see their existence in a certain light. At the same time you didn't neglect the other aspects. You spent hours at the coal face and you knew how to assert yourself vigorously with

institutions. Things work when the four aspects are more or less in harmony. I believe for example that in the Northern French coalfields at the time of their final decline the four were so far out of step that no human ability could have brought them together.

It's in terms of these four aspects that I might criticise you on one point. To say that people are the same in mining and electricity is a very difficult hypothesis to prove. I'll give you two striking differences in the French case.

A miner works with an unformulated reality: coal comes out when it will and the pick either goes in or it doesn't. The electrical engineer lives by the most perfect science: $V=RI$. Electricians are convinced that they are in charge of an industry based on exact science, to the point of believing that economics is an exact science. All the manuals of economic calculation refer to electricity: we're all familiar with the comparison between a conventional and a hydro power station. The electrician lives in a world where mind really works over matter, whereas in the mine nobody would risk saying such a thing. The second point is status: the miner's status is soft cloth compared with the armoury of the electrical engineer, for whom everything that could happen throughout his career is precisely defined. Moreover, to extend a metaphor, electricity is much more of a running tangle than coal: unlike coal, you can't just stop producing it.

When you're dealing with somebody aren't you faced with a particular conjunction of these four aspects, rather than with somebody who reacts according to personal problems ?

A.D : From our present stance after the event, the analysis of these four aspects seems to me to be very pertinent. I dealt with the four instinctively and in effect it's true, one has to find the best means to make them work together. We can't accept a dead end. When I say that some knowledge can be carried over, and certain universal qualities in people, I'm speaking more in psycho-sociological terms. I think that there are universal qualities. When you say 'reality is what offers resistance', that's universal. At that level it's the same everywhere, it's a dimension which gives structure.

Q : You speak like a foreman and not like an engineer: having encompassed such a number of experiences and combinations of managing the four aspects you think it's all the same; but it can't be codified. In particular, it's not something you could teach a student.

A.D : Often one reaches a better understanding by transmuting such knowledge into parables rather than by trying to rationalise it. This brings me back to Schön's concept of 'theory in action' which I think is very pertinent. Theory as practised is difficult to rationalise, one always runs the risk of making mistakes and omissions, using words which don't exactly correspond, even of wanting to gather disciples...

Q : As a director one knows nothing compared with the body of employees, people with knowledge: one thinks one knows. You have to understand what skills people have, and you only learn that on site, not from an office.

A.D : I quite agree, and I have no truck with 'all there is to it...' It's not a case of preferring one kind of limited knowledge (that of the manager or the psycho-sociologist) to another (that of the engineer). To exchange one kind of myth-making for another doesn't help progress. It's not even a matter of personal courage (although that is necessary). Sometimes people read about an experiment or hear of one, and try to imitate it and fail. They're losing sight of the real problem which is much more subtle: how does one know what one's doing ? Know what one knows? Know what one is ?

Paradoxically the practice came before the theory: I did things, I experimented and now I'd like to understand what I did, formulate better what I already know. I tend to see it as a second-degree reflection, reflection on 'theory in practice', on my original reflections in the thick of the action; and without losing sight of the fact that it must all be based on practice. My interest is in creating events and not just observing them: it stems not only from action but from the means of precipitating action.

Q : Knowledge is useful, and technique can be learned. The mining foreman has a prodigious knowledge as long as the boundaries stay the same; but if he is moved from the pick-and-shovel team to blasting, he's lost. Handling explosives calls for theoretical knowledge: an explosion is a phenomenon with a major abstract dimension, one has to know that rock splits under traction rather than compression. Of course, one can learn with practice in ten years or so, but an engineer who understands the formulae of rational mechanics will understand very quickly. When the boundaries are not much altered, experience wins the day. In effect, an engineer knows the problems but not the solutions, and a foreman is the other way round.

How then should we teach the knowledge which cannot be learned ? We use a very crude process which breaks the chains that prevent the acquisition of knowledge, and we confront students with real tests in real situations. We watch them at it, we listen to them explaining what they're doing and we wear down their resistance. Maybe it's not learning, but it's what prepares them best for it.

A.D : In conclusion, I think we have found an invariable element: human nature is always the same, once one scratches beneath the cultural surface. People have an overwhelming desire for recognition, that's universal even if the means to achieve it are different. And in states of emergency people act similarly and act together. That's what's left... when there's nothing else left.