THE DEMING DIMENSION: Management for a Better Future

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INTRODUCTION

It was an unexpected honour to become a Professor at the Nottingham Trent University. But mine is an almost-unique honour: this particular title, named after William Edwards Deming (born 14 October 1900, died 20 December 1993). I know of only one other person who bears this title, Barbara Lawton of the University of Colorado at Denver, and she is someone who worked very closely with Dr. Deming for many years. She wrote to congratulate me on my appointment, so I believe she has no objection to sharing her title with me!

However, the fact that this is the title of my Chair seemed to me to choose the subject of my inaugural lecture automatically. It just had to be an introduction to Dr. Deming's life and work—which is ambitious for just a short talk, but I shall try.

Let us begin with the quotation which most of you will have seen in the publicity for this talk.

> "Dr. W. Edwards Deming has a lot to answer for.
> He has been responsible for turning the writer's life upside down."

These two sentences were written by a Nottingham Trent University student in September 1998. They were the opening words of the project which he wrote after attending my introductory course on Dr. Deming's work. And in his second paragraph he spoke of "many nights of frustrated reading related to Dr. Deming and his work." So, be warned: this could be damaging to your health!

To help you understand where I am coming from, and why, let me give you a ...

BRIEF AUTOBIOGRAPHY

In the late 1960s I became the first full-time Statistics lecturer in the Mathematics Department just up the road at the University of Nottingham. Before long there was an impressive and thriving Statistics Group there, headed in the 1980s by Professor Adrian Smith, well-known to some of you in the audience; I stayed full-time with the Group for nearly 20 years.

But, without doubt, the most important thing which happened to me during all that long time was in 1980 when I found myself (much more through great good luck than virtue) carrying out some consultancy work for the British subsidiaries of the first American company to start taking Dr. Deming's work at all seriously. As a result of that connection, about five years later (quite out of the blue) I suddenly received a letter telling me that Dr. Deming was coming to London for the first time that summer to present what, in America, had already become his very famous four-day seminar for management (whose title was "Quality, Productivity, and Competitive Position"). The letter invited me to become one of his two main assistants at that seminar. (The other assistant was an American who had served in this capacity several times already: Bill Scherkenbach, who at that time was Director of Statistical Methods in the Ford Motor Company—recommended to them by Dr. Deming.) I accepted the invitation, albeit a little

nervously. And so began the unique privilege—and responsibility—of working with Dr. Deming on all of his visits to Britain and elsewhere in Europe for the remaining nine years of his life.

Two years later I reduced my involvement at Nottingham University to a fairly small part-time contract, to give me time to help launch the British Deming Association (BDA). The BDA was set up not as a consultancy but a non-profit educational organisation having the stated aims of spreading awareness of Dr. Deming's work, helping to deepen understanding of that work, and generally to help in whatever ways it could (within the non-profit context) both organisations and individuals who became interested.

Five years later (1992), the time came when I no longer wanted to continue with even the small amount of Mathematical Statistics with which I was still engaged, and so I moved on to full-time leave of absence from academic life. And that continued until 1996, which is when Professor Tony Bendell invited me to join the Quality Unit here at Nottingham Trent as a part-time Principal Lecturer.

WHY FOUR DAYS?

I mentioned Dr. Deming's four-day management seminar. That might sound a somewhat luxurious amount of time. At least, that is what I thought when I first heard of it. But Dr. Deming had the right idea about a lot of things—including the length of time needed to give a good introductory presentation of his work! And, when I first enjoyed the experience of a four-day seminar in London in June 1985, I soon realised why he had insisted on that length of event.

You see, back then, very few of the delegates had any idea of what was coming. It wasn't that they were new to ideas and approaches and schemes for "achieving quality" (whatever that might mean). No, "quality" was already all the rage. You may know of people like Tom Peters, Philip Crosby, and Joseph Juran: they were already making quite a name for themselves back then. You may know something about Japanese-sounding things like Kaizen, quality circles, TQM and TQC—they were around, too. And there was, of course, the Great British invention: BS5750—which, if you are very young, I should explain is what later became ISO 9000. (I should hasten to add that you do not need to know anything about any of what I have just mentioned to follow the rest of this talk: in fact, come to think of it, they might be more of a hindrance than a help.)

And now, in 1985, Deming was coming to London. So, in many companies, the Quality Manager was sent off on his travels again, this time to find out what Deming was all about.

No wonder therefore that, when Dr. W. Edwards Deming (now of course in his mid-80s) slowly hobbled out onto the stage of the Connaught Rooms, in Queen Street in London, those delegates were, to put it mildly, unprepared! I think I have never seen so many open mouths and expressions of utter incredulity, and heard so many sharp intakes of breath and mutterings of disbelief—total astonishment—as there were on the opening day of that four-day seminar. For when they heard what Dr. Deming had to say, he wasn't just contradicting most of what they had always experienced so far in their working lives as regards ideas about management, and quality, and productivity, and people, and work, relationships with suppliers, performance appraisals, targets, inspection, standards, lower-tender contracts, and lots more besides—he was even contradicting much of what was coming from those other quality "experts" and techniques and approaches that I have just mentioned—and at that time the delegates were only just beginning to learn about them! And Deming was saying that they were wrong.

So it was small wonder that, at that time, it was not unusual for some fraction of the audience—say 10%—to go home after just the first day. That rather upset me, and so I raised the matter with Dr. Deming. Was he upset? Was

he annoyed? Did he regard it perhaps as an insult? After all, this 85-year old had flown all the way over from his home in Washington, DC just to present this seminar. Not a bit of it: there was no blame, no anger. A touch of sadness, yes. He just said to me, very gently, with a little shake of his head: "Henry, they're not ready yet."

Then we came to Day 2. And, for the 90% or so that were left, things began to change. Some things were beginning to sink in: the great good sense of what Deming was saying—hugely different though it was—was beginning to register. And now there began to be positive vibrations around the room, rather than the negative, or at best neutral, ones of the first day. And then, by the third day, the delegates were really beginning to get into it. And on the Friday, they realised they were nearing the end of an extraordinarily important learning experience.

I saw that pattern acted out several times. Why am I telling you all this? It is an important part of setting the scene. It is also a warning for you not to expect too much from me just now. If Dr. Deming needed four days to introduce his management philosophy (even with his very special talent of being able to pack a mountain of meaning into just a very few words), it would be impertinent of me to think I can do much in one short talk. I am very fortunate that most of the seminars on Dr. Deming's work that I have been asked to present in recent years, including here in the Quality Unit at Nottingham Trent, have been for between two and five days, not just an hour or so.

I could think of no better way to structure the presentation from now on than to simply relate the story chronologically, from his life's beginning to its end, and then to take a brief look into the future. For those of you who are completely new to this, I will give advance warning that the only slightly tough thinking will be in the 1920s and 1950s—and it won't last very long!

So first, for the record...

THE EARLY 1900S: THE STORY BEGINS

William Edwards Deming was born with the century, in 1900. His family was not well off, and moved several times as his father tried to find satisfactory employment. They finished up in Wyoming, and Deming received his Bachelor's degree from the University of Wyoming in 1921, majoring in Electrical Engineering. He then went to teach Physics in Colorado, where he obtained his Master's degree. His doctorate came from Yale in 1928, in Mathematical Physics.

THE 1920S: NEW STATISTICS IN MANUFACTURING

Just like many students these days, Mr. Deming (as he still was at the time) had to "work his way through college:" he had to find holiday jobs to raise money to finance his studies. And that led to a most incredibly fortunate coincidence, without which the industrial history of the world during our lifetime might have been very different.

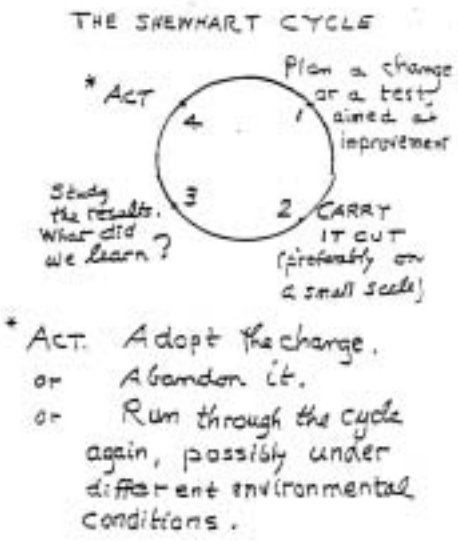
For, in 1925 and 1926, Mr. Deming took summer vacation jobs at the Western Electric Company in Chicago. What was so fortunate about that? Well, it was in the Western Electric Company at this very time that Dr. Walter A. Shewhart was developing his theory of what we nowadays refer to in such terms as the statistical control of processes, along with the associated tool of the control chart, and the understanding of the two fundamentally-different types of variation in processes, variation due to what Deming later called common and special causes. Deming just happened to be there, at the Western Electric company, just at the right time.

"Understanding variation." Why is that important? Well, let us consider when you buy a product, or a service, or you are engaged in a service operation, or a manufacturing process, or administrative process, etc. Does it always work smoothly, the same way, take the same amount of time—so that you can either do, or experience, a perfect

job? That would be very rare. Or does it work fine one day, but have nasty surprises for you the next? That's variation, or variability. Variation is nasty: it makes things difficult, unpredictable, untrustworthy: bad quality. Good quality is very much related to reliability, trustworthiness, no nasty surprises. In a big way, bad quality means too much variation, good quality means little variation.

And Shewhart's breakthrough in understanding variation (for it was nothing less) proved to be the foundation-stone of W. Edwards Deming lifetime's work. Shewhart became not only Deming's teacher but his mentor—somebody he found he could trust and respect, and therefore learn from with confidence. For the rest of his life (a long while!), Deming repeatedly attributed the source of much of his most important learning as being Walter Shewhart.

And not just for these statistical aspects of the Deming philosophy, but much else besides, including (a) systems thinking, (b) operational definitions (i.e., defining unambiguously how something is to be measured or assessed, and really getting to grips with if and why it should be done that way), (c) the famous improvement cycle: Plan-Do-Study-Act (which many call the Deming Cycle but to which he always referred as the Shewhart Cycle—as proof, here it is in his own handwriting); and much more.



The Shewhart Cycle
from *The Deming Dimension* by Henry R. Neave,

But let me quote Deming directly from his dedication in the 1980 reprint of Shewhart's famous 1931 book: *Economic Control of Quality of Manufactured Product*. (1) He refers to Shewhart there as "the father of modern quality control," and Deming praised certain chapters of that book as being "a masterpiece on the meaning of quality." He continued:

> To Shewhart, quality control meant every activity and every technique that can contribute to better living... His book emphasises the need for continual search for better knowledge about materials, how they behave in manufacture, and how the product behaves in use. Economic manufacture re-

> quires achievement of statistical control in the process and statistical control of measurements. It requires improvement of the process in every other feasible way.

Even today, I think you will agree that most people's interpretation of the word "quality" is still hopelessly narrow and limited compared with Shewhart's understanding in his great book of nearly 70 years ago.

Now, we need to know something of the circumstances in which Shewhart's great discoveries took place, for only then can we properly understand the prime purpose of those discoveries. The sad, and costly, fact is that—despite the amount of time which has elapsed—the true purpose and hence the potential of Shewhart's work is still greatly undervalued.

The Western Electric Company at that time were heavily involved in the development of telephone technology and related equipment. They were investing massively to increase their knowledge and ability. For some considerable time their improvement efforts had paid handsome dividends. But gradually that improvement activity began to "run out of steam:" it was achieving less and less. They were still working as hard, if not harder than before, spending much money, time, effort—every kind of resource—on trying to make things better.

I will quote you a fragment of the speech (2) which Dr. Deming made at the launch of the French Deming Association in 1989. It should be no surprise that he was talking about reducing variation:

> ...the harder they tried to achieve consistency and uniformity, the worse were the effects. The more they tried to shrink variation, the larger it got. They were naturally also interested in cutting costs. When any kind of error, mistake, or accident occurred, they went to work on it to try to correct it. It was a noble aim. There was only one little trouble—their worthy efforts did not work. Things got worse...

As he explained it just a little later in the same speech:

> ...they were failing to understand the difference between common causes and special causes, and that mixing them up makes things worse. ...Sure we don't like mistakes, complaints from customers, accidents—but if we weigh in at them without understanding, then we make things worse.

Not just fail to make them better, but make them worse.

These ideas about the two types of variation may be new to you, so I'll give it to you in just three sentences! I'll talk in terms of variation in a process—which could for example be some administrative process, manufacturing process, service operation—basically, anything which happens over a period of time, so that we may have a chance to improve it.

What Dr. Deming called common-cause variation is the routine variation to be expected because of what the process is and the circumstances in which it exists and is operating. Special-cause variation is anything noticeable over and above that routine variation. (Some people find it useful to think in terms of the analogies of common-cause variation as noise and special-cause variation as signals.) And, surely, very different actions are called for depending on whether something is routine (i.e., there all the time) or exceptional (perhaps just one-off). That's it. Not exactly rocket science! But still so little understood over 70 years later.

And so, Shewhart created the tool called a control chart whose purpose was to provide guidance for improvement. What kind of actions, and what kind of interpretations of data, will help you improve? But there is a lot of bad teaching around on this. To a lot of people who know what control charts are and perhaps use them, this emphasis

on their use for improvement is still very new. Most people who use the control chart at all use it for what I call monitoring purposes, as a sort of early-warning device. If all the data lie within two horizontal lines which are called the control limits (and are computed by simple formulas from data from the process), and continue to stay there, all is regarded as being well, and people may relax and think of other things. But if the process, say, starts to wander in some way, the control chart signals the onset of trouble, so that corrective action may be taken before the trouble becomes too serious. This is how most people use control charts. Now, I am not saying that it is wrong to use the control chart in that way. Of course not. It works very well in that early-warning role. I'm simply saying that if that is all you are using the control chart for, you are missing out on the main purpose for which Shewhart created it, which was to provide guidance for the type of things to do which will lead to improvement, to making things better—not to just keep things as they are, which is all the monitoring use of the control chart provides—and all that it is intended to provide. To merely maintain things as they are, or to improve: that's the difference.

And that is a major difference in purpose. Deming's life's work was all about providing guidance for how to improve, to make things better, and to stop doing things which cause harm and make things worse. Shewhart's discovery of the two types of variation and his creation and intended use of the control chart were the first great steps on that long journey toward the Deming management philosophy (or theory, approach—whatever you wish to call it).

1930S - 1940S: NEW STATISTICS IN NON-MANUFACTURING

So, it did all start in the 1920s with some new statistical thinking and methods in a specifically manufacturing context. Regrettably, more than 70 years later, some people still seem to think that that was all that Deming's work was about, and all that it is relevant to. Nothing could be further from the truth. For one thing, Deming was never employed in a manufacturing environment, except for his holiday jobs at Western Electric. For his first permanent employment he joined the United States Department of Agriculture (which, I suppose, is manufacturing, but of a rather different kind). His appointment there was as a Mathematical Physicist (for that was the subject in which he was mainly qualified). Twelve years latter, in 1939, he was appointed Head Mathematician and Adviser in Sampling at the National Bureau of the Census—again, hardly manufacturing! His work there, particularly with the 1940 American census, turned out to be supremely successful, and it was in that connection that he first attracted some international attention. In fact his first visit to Japan, soon after the Second World War, was primarily to work with those who would be involved with the first Japanese post-war census.

1950S - 1960S: "THE THEORY OF A SYSTEM, AND COOPERATION"

Remember that description of this era: you will see in a moment where it comes from.

A second visit to Japan, again to work with the census people, was planned for Summer 1950. By this time, Dr. Deming's name and reputation had become known to Ken-ichi Koyanagi, Managing Director of JUSE, the Japanese Union of Scientists and Engineers, an organisation set up soon after the war ended, having the aim to help Japanese industry get on its feet again. Koyanagi issued an all-important invitation for Dr. Deming to also teach concepts and methods for the achievement of quality in industry. During that visit his teaching not only reached hundreds of engineers, plant managers, research workers, and so on: it also reached top management. A particularly famous meeting was held in July 1950 with the 21 top industrialists of Japan present, a meeting later described as the occasion at which Dr. Deming had, in that one room, 80% of the industrial capital of Japan right in front of him. Deming regarded that as the breakthrough: that those top people came to listen and learn from him.

Japan has, of course, been going through some difficulties in recent years. And there are some who point to those difficulties and say: "There you are. I told you so. This Japan stuff, or this quality stuff, or this Deming stuff.

Doesn't work, does it?" I think there are two brief facts worth pointing out. First, Deming's teaching in Japan was almost entirely to manufacturing industry (in addition to the Census), not to the financial sector nor to government. Second, his main teaching to the Japanese was in 1950-52. To point, nearly 50 years later, to problems which (as I understand it) have primarily been caused by parts of the Japanese picture on which Deming had little or no influence even that long while ago, and claim that consequently, "Deming doesn't work" does seem to me to be a trifle unreasonable.

Let me quote from another Nottingham Trent University student:

> Looked at in today's light, with the collapse of Japan and the other Tiger economies is this message still relevant? With world recession staring us in the face, it is probably more relevant than ever.

The reason for Japan's recession is to be found in *Doctor's Orders* when Deming says: "Financial wizards...what have they been doing? ...letting the company go to ruination, that's what—permitting expenditure on the wrong thing at the wrong time. Investment mistakes on a grand scale combined with a large amount of fraud and government mismanagement has created this crisis." (*Doctor's Orders* was an ITV programme about Deming, first screened in 1988.)

Can you really blame Deming for them?

However, the Japanese have come back from worse.

So yes, Japan's industrialists, including those at the top, listened and learned some good sense from Dr. Deming. And it wasn't just his reputation, and the fact that he was an eminent scholar (which I think has always earned rather more respect in Japan than in some Western countries). Another reason they did so was well-expressed by Koyanagi (3) as follows:

> Most of the Japanese were in a servile spirit as the vanquished, and among Allied personnel there were not a few with an air of importance (which I imagine was something of an understatement). In striking contrast, Dr. Deming showed his warm cordiality to every Japanese whom he met. ...His high personality deeply impressed all those who learned from him and became acquainted with him. ...The sincerity and enthusiasm with which he did his best for us still lives and will live forever in memory of all concerned.

Deming treated the Japanese with warmth and respect and humanity. In a short piece of film from post-war Japan shown in "Doctor's Orders," Dr. Deming provided the following "voice-over," showing genuine sympathy and understanding:

> Japanese top management, and anybody in Japan, could understand that Japan was in a crisis. They could not continue to receive food from the American army for ever. They needed new equipment, having no resources. Industry was on the ground. Twisted steel…where there had been a factory…was now a rice-field. They were in a crisis. They knew that.

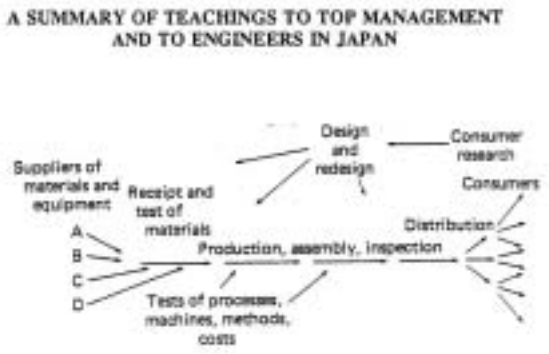
So what did he teach them, to help them out of that crisis? Was it just statistics (as some claim)? I do not think so. First let me show you this entry from his diary, (4) dated 10 July 1950:

> The lectures are being held at the Japan Medical Association in Ochanomizu. ...Over 600 men had applied, and the limit was finally overstrained to 230. Professor Masuyama and assistants will

> teach the statistical control of quality in the afternoon. I shall teach during the forenoon the theory of a system, and cooperation.

There you are: that is where the title of this section comes from: his own diary. Deming was content, on this occasion and others, to leave the teaching of statistics to assistants, while he concentrated on the really important matters.

What did he mean by "the theory of a system, and cooperation"? Here is an abbreviated version of his own seven-point summary of his teaching in Japan during that summer.



The Theory of a System and Cooperation
from *The Deming Dimension* by Henry R. Neave

The first point was the famous flow diagram shown above; his simple but profound picture of an organization viewed as a system. He regarded this as the most important diagram he ever drew in his life. I call it the "Page 4" diagram, because that is where it appears in his 1986 book: *Out of the Crisis*. (5) *Out of the Crisis* is a big, fat book! The fact that this appears so early indicates how fundamental he considered it to be: right up front.

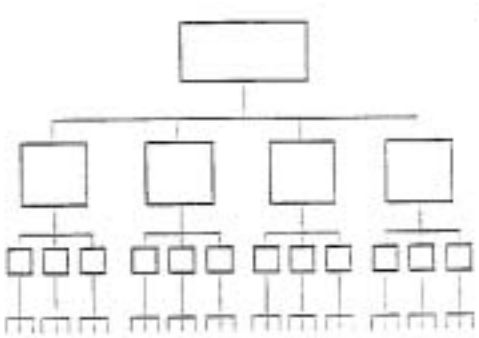
It is also well worth quoting from his final book: *The New Economics for Industry, Government, Education*. (6) A section titled with the question: "What ignited Japan?" reads as follows:

> The flow diagram was the spark that in 1950 and onward turned Japan around. It displayed to top management and to engineers a system of production. The Japanese had knowledge, great knowledge, but it was in bits and pieces, uncoordinated. This flow diagram directed their knowledge and efforts into a system of production, geared to the market—namely, prediction of needs of customers. The whole world knows about the results.

This simple flow diagram was on the blackboard at every conference with top management in 1950 and onward. It was on the blackboard in the teaching of engineers.

Action began to take place when top management and engineers saw how to use their knowledge.

What is so special about the flow diagram? Two main things, I think. Firstly, it is an all-important horizontal view of how the work needs to get done—what actually happens, and what needs to happen—in an organisation, rather than the familiar vertical view, which is just the power structure, the conventional organisation chart:



The Familiar Vertical View
Drawing by Henry R. Neave

And it is a very neat perspective that this vertical structure is so often obstructive to the horizontal flow. But it is that which is all-important regarding what the organisation actually does. And secondly, whereas the doing is represented by the arrows going from left to right in the flow diagram, the organisation should be continually improving—because of the learning and feedback represented by the arrows along the top going from right to left. And the vertical structure can be pretty effective at getting in the way of that as well!

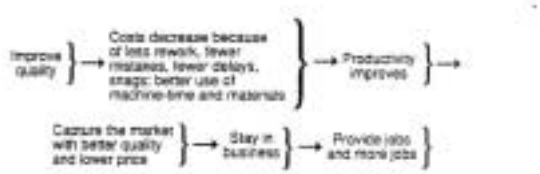
So that is the big one. But now, the other six of the seven points.

2. Quality is determined by the management. Outgoing quality cannot be better than the intentions of the management. (I so often heard him say, simply, "Quality is made in the Boardroom.")
3. The consumer is most important. What will help him in the future? Strive for long-term relationships with your customers. (What will help the consumer in the future—not just now? ...Strive for long-term relationships.)

The consumer was at the right side of the Page 4 diagram. At the left is the supplier—who should be your partner, working together, long-term, in trust and cooperation. Why? Not "just to be nice." Supplier and customer will both be better off—that's why.

4. Your supplier is your partner. Make him your partner. Work together on continual improvement of quality. Develop a long-term relationship with a supplier in a spirit of mutual trust and cooperation. Supplier and customer will both win.

(There is a second famous diagram dating from 1950: the chain reaction. "Improve quality" (in the big sense in which Deming meant it) leads to "improve productivity" leads to "expand." Note "jobs and more jobs." He loathed unemployment—he saw it as such a waste of humanity and human potential.)



A Chain Reaction: Improve Quality, Improve Productivity
from *The Deming Dimension* by Henry R. Neave

Finally,

6. Need for trust and cooperation between companies.

and

7. Development of trust and respect.

I think you can see some common themes running through that list! And it's hardly just statistics. And it's hardly just for manufacturing companies!

(The uncut version of Dr. Deming's summary of his teachings in Japan can be found in Chapter 3 of *The World of W. Edwards Deming*. (7)

It is not surprising that there should have been such a development of emphasis in Deming's teachings. When you get into it, an inevitable consequence of Shewhart's understanding of those two types of variation is that the great majority of problems (or, thinking positively, of opportunities for improvement) lie in the common causes—the system, as Deming called it. When something goes wrong, the fault rarely lies in individuals. Looking round for a scapegoat, someone to blame, is the last thing that management should do. The fault wholly or primarily lies in the system: the environment, the circumstances, the working conditions, the values, the "company culture" within which individuals live, work, try to succeed, try to survive—yet so often it is that very culture which repeatedly and consistently obstructs their aims and desires.

So Deming's thinking, as a natural consequence of Shewhart's thinking, leads to a vast change of emphasis from what is still commonplace in so much of modern management—and indeed, even more sadly, of modern government. It is still commonplace, often increasingly so (and you know it), to be focused on blame or praise, punishment or reward, or judgment of the individual. Deming had already, half a century ago, come to realise that that focus is misplaced.

You see, to repeat, he had concluded that the vast majority of performance, behaviour, results—whatever—comes from the system within which people live and work rather than from the individuals themselves. And, if that is true, then of course what can be achieved by such focus on judgment of the individual is trivial compared with what can be achieved by focusing instead on improvement of the system within which the individual works and lives. This, in large part, explains why Deming was so critical of managing and judging—with reward and punishment involved—related to the achievement (or otherwise) of numerical targets and quotas and objectives and numerical goals. And of performance-related pay and ranking and rating and league-tabling. It's a long list: you could add more.

Now, there is no time to get into those contentious issues here, and in fact it would be irrelevant to try. Why? Because it would be putting the cart before the horse (which is either unproductive or dangerous, depending on whether you are on the level or on a slope). The fundamental question, from which all those issues I've just mentioned, and many others follow, is: could it be true that most behaviour and performance come from the system, not the individual? I will tell you that for a long while I did not believe it. We are just not brought up to believe that, to think that way.

And then I began thinking like this. I invite you to try it too. Think slowly, and think carefully.

Just imagine, you personally, how your performance/behaviour (what you do and how you do it) would change according to whether:

- you are living in a time of peace, *or* a time of war;
- you live in one of the industrialised nations, *or* you live in a third-world, under-developed country;

- you are extremely rich, *or* you are poverty-stricken;
- your work is greatly fulfilling and exciting, *or* is it dull and demoralising;
- you had lousy schooling, *or* you had a brilliant education;
- you had great parents, *or* you suffered abuse of various kinds throughout your childhood;
- you trust your colleagues at work, *or* you distrust them;
- you trust your spouse or other partner, *or* you distrust him/her;
- all around you are back-biters and points-scorers, *or* there are supporters and helpers;
- you are in an environment of conflict, competition, winners and losers; *or* of genuine mutual cooperation so that everybody gains.

Of course your behaviour would change—a lot—depending on these different circumstances. But you are still the same person. It is changes in the system around you, and the effects of those changes on you, that change your behaviour and performance.

It is time to move on. But to where?

THE 1970S: ?

A question mark. Because we have relatively little knowledge of what was happening with Deming during this decade. He was still working very hard, lecturing regularly at the New York universities, still publishing research papers, visiting Japan for the annual Deming Prize ceremonies (though I do not know how regularly). And that is in spite of the fact that effectively the Japanese had stopped learning anything significant from him years earlier. And there was no sign that the rest of the world, including his home country of America, had any interest in what he could do for them either. Even in his secretary's biography of him, a section listing his "International Activities" has many entries in the 1950s, fewer in the 1960s, and then only two for the 1970s: that he lectured in Argentina in 1971 and, interestingly, that he was a consultant to the China Productivity Center in Taiwan in 1970 and 1971.

And then: nothing.

Let me tell you what I believe. I believe (and this would hardly be surprising in the circumstances) that he suffered some depression. Two particular personal incidents support that thought. First, when I was one of a group of about 30 people having a Study Weekend with him in 1988, we got him talking about his life. And he said a lot about the 1950s and, to an extent, the 1960s. But when we asked him about what happened in the 1970s, after a long pause he just muttered: "Oh, nothing much." He just didn't want to talk any more. The other incident was when I was studying some of the music he had composed. I found music composed in the mid-1970s which I can only describe as deeply and distressingly unhappy. I believe he felt that the great learning with which he could help the Western world, if only we would listen, would die with him. He had reached that kind of age.

Thankfully, as we know, that was not the case.

THE 1980S (FIRST HALF): THE WEST AWAKENS

Though Japanese contacts, an American Chief Executive did at last discover Deming in 1979, and began to listen and learn. This was William E. Conway of the Nashua Corporation. Deming's involvement with Nashua began in just sufficient time to become known to the NBC television producer, Clare Crawford-Mason, who at that time had begun to prepare a documentary which was first screened in June 1980, a programme with the title: "If Japan Can, Why Can't We?" That was the breakthrough. As Deming's secretary later wrote: (8)

> American industrialists who watched the programme not only grasped more fully the enormity of the problems that they were facing, but they also realised that answers were available. Perhaps more importantly, W. Edwards Deming was introduced to the audience as the man with effective answers. It was an introduction that would change his life irrevocably.

(And, she might have added, the lives of countless others).

Here is a transcript of several short extracts from "If Japan Can, Why Can't We?"

> **Lloyd Dobyns (narrator):**
> We have said several times that much of what the Japanese are doing we taught them to do. And the man who did most of the teaching is W. Edwards Deming, statistical analyst, for whom Japan's highest industrial award for quality and productivity is named. But in his own country he is not widely recognised. That may be changing. Dr. Deming is working with Nashua Corporation, one of the Fortune 500, a company with sales last year of more than $600,000,000. Deming was hired in late 1979 by Nashua's Chief executive, William E. Conway.
>
> **Bill Conway:**
> And of course our major supplier of copier machines was a Japanese company. And so we saw the advantages of how many things the Japanese companies were doing. And we heard about Dr. Deming. And so we got under way with our quality program with Dr. Deming.
>
> **Dr. Deming.**
> They realised that the gains that you get by statistical methods are gains that you get without new machinery, without new people. Anybody can produce quality if he lowers his production rate. That is not what I am talking about. Statistical thinking and statistical methods are to Japanese production workers, foremen, and all the way through the company, a second language. In statistical control you have a reproducible product hour after hour, day after day. And see how comforting that is to management: they now know what they can produce, they know what their costs are going to be.
>
> **Bill Conway:**
> Many of these programmes on statistics have died in American companies because they didn't get the top management support. Now, why top management does not believe that this is the way the Japanese have improved their industry over the last 30 years I don't know.
>
> **Dr. Deming:**
> I think that people here expect miracles. American management thinks that they can just copy from Japan—but they don't know what to copy!
>
> **Lloyd Dobyns:**
> But one part of Deming's program is not likely to please them. He insists that management causes 85% of all the problems.
>
> **Dr. Deming:**
> I ask people in management what proportion of this problem arises from your production worker. And the answer is always: All of it! That's absolutely wrong. There's nobody that comes out of a School of Business that knows what management is, or what its deficiencies are. There's no one coming out of a

> School of Business that ever heard of the answers that I'm giving your questions—or probably even thought of the questions.

Now, compared with what I have shown you concerning Deming's teaching in Japan 30 years earlier, you may have noticed a strangely narrow emphasis in those extracts: he was mainly back to just talking about statistical methods in a manufacturing context again—just where things had been 55 years earlier! Several years later, when I had begun to appreciate the much greater breadth and depth of his teaching, I asked him why he had reverted to such a narrow focus in that TV programme. I remember his answer well. He said: "Because, Henry, I thought that, at the time, that was all that people would be able to take." He had judged that his American audience would not be able to stomach what he had been teaching the Japanese 30 years earlier: he had to take things more carefully with them. Some new statistics in manufacturing: yes, perhaps Westerners could cope with that. He was deliberately using that narrow focus as a "thin end of the wedge," hoping that, having made that start, the breadth and depth could grow.

But, however hard he tried to contain himself, his frustration with American management would often come to the boil. It was now more than 30 years since the "Japanese miracle" had begun, and the Americans were still so wrong and still so slow to learn. His final words on Encyclopedia Britannia's video: Management's Five Deadly Diseases (released in 1984) were:

> With a storehouse of unemployed people—some willing to work, a lot of them willing to work, with skills, knowledge, willingness to work; and people in management unable to work through the merit system, annual rating of performance, not able to deliver what they're capable of delivering. When you think of all the under-use, abuse, and misuse of the people of this country, this may be the world's most underdeveloped nation. Number One—we did it again! We're Number One—for underdevelopment. Our people not used, mismanaged, misused, and abused, and underused by management that worships sacred cows: a style of management that was never right, but made good fortune for this country between 1950 and 1968 because the rest of the world, so much of it, was devastated. You couldn't go wrong, no matter what you did. Those days are over, and they've been over a long time. It's about time for American management to wake up!

THE 1980S (SECOND HALF): A NEW CLIMATE

By the late 1980s, Deming's teaching had indeed greatly broadened and deepened. "A New Climate" was the phrase which repeatedly came to my mind. He was now strongly emphasising "Cooperation: Win-Win," as he coined the phrase (just as in Japan 35 years earlier)—not cooperation for some sacrificial, magnanimous, altruistic purpose but simply so that all concerned could gain, and be better off in all respects than if they carried on in the old mode of conflict and destructive competition.

And, in a world which is changing ever-faster, he spoke increasingly of the need not just for improvement but for innovation—in process, in product, in service. How right. And so he would study the kind of management climate in which innovation could flourish. Rather obviously, it would not be the familiar climate of management by fear, conformance, "right first time," punishment if anything goes wrong. Most innovation does go wrong, but if management cannot accept wrong innovation, they won't get right innovation either.

And for a third strong feature of the "New Climate," here are Dr. Deming's opening words in Central ITV's "Doctor's Orders." Before he'd been speaking for even 30 seconds, Deming had come up with what was, to many people, a somewhat unexpected view of the "job of management:"

> Just think what this country could be—think what North America could be—if half the people, even make it 25%, could take pride in their work, could take joy in their work. Things would be a whole lot different from what they are now. Why not give that satisfaction to everybody? That's the job of management!

A new climate indeed!

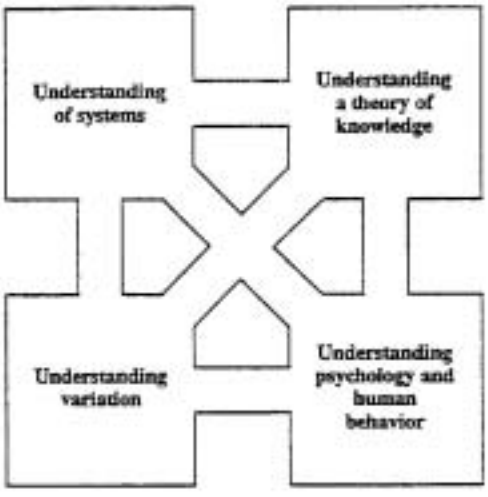
Dr. Deming was, of course, now getting quite old—and ill. Indeed he was developing a collection of medical conditions which would have killed off most people much earlier than they did him. But he knew he was dying. And consciously or unconsciously he knew he must try to develop something which would help those who live after him to understand and continue to develop his life's work. It was toward the end of 1989 that we first heard the next extraordinary phrase:

1990-1993: A SYSTEM OF PROFOUND KNOWLEDGE

Extraordinary, yes—but accurate. This was his attempt, sometimes only with the wisdom of hindsight, to summarise the guts, the core, the essence of his whole life's work. His work is to do with knowledge, understanding, learning—no kidding! And it is profound, it is deep—it's not superficial. And its implications are profound. And it is a system—in an exactly analogous way to how he wanted us to consider organisations as systems: i.e., containing many, many components, but with its strength lying in the understanding of how all those components fit together, how they interlink, how they are interdependent, how they integrate.

With my own wisdom of hindsight, I know that one has not begun to comprehend the Deming philosophy of management until that integrated nature of his work becomes predominant in the way that one thinks of it and understands it.

I like very much the following representation of Deming's System of Profound Knowledge, constructed by one of my many great American friends, Peter Scholtes:



Profound Knowledge
As Drawn by Peter Scholtes
(Author of *The Team Handbook* and *The Leader's Handbook*)

The System of Profound Knowledge is comprised of the four major parts:

Appreciation of a System (as I have been describing it);
Theory of Variation (right back to where it all started with Shewhart's breakthrough so long ago);
Theory of Knowledge (how we know things, learn things, improve that learning and knowledge);
Psychology (the understanding of people and the way that they interact with all that surrounds them).

This is a very human philosophy. And what is so good about Peter's representation is that it illustrates so well that not only are the four parts, so important in their own right: again the strength of this system is the way that those parts interlink, inter-relate, and inter-depend. This is a rich legacy.

W. Edwards Deming died on 20 December 1993, at his home in Washington, D. C. where he had lived since 1946, and just ten days after completing his final four-day seminar in California. I would estimate that at least a quarter of a million people attended his celebrated four-day seminars between 1980 and 1993. As we know, the economic outlook in America has improved in recent years—a lot. How much of that has been due to those quarter of a million people? To quote a famous Deming question, "How would I know?"

I do know that there was a lot of excitement in quality management circles when Bill Clinton and Al Gore took office. As just one example, the major feature in the December 1993 issue of "Quality Progress" (the monthly magazine of the American Society for Quality) was "How the Federal Government Is Reinventing Itself," subtitled "Vice President Gore's National Performance Review report might just be the quality book of the year."

Poignantly enough, as I just said, December 1993 was also the month when Dr. Deming departed this life. I wonder if, in those final days, he may have recalled what he had said just ten years previously, in an interview reported in The Washington Post, January 1984:

Question: You've been very successful in attracting people to these seminars. Isn't that encouraging to you?
Dr. Deming: I don't know why it should be. I want to see what they're going to do. It will take years.

Right again! And so, finally, what of...

1994 AND ONWARD: THE FUTURE

As the world grows even more complex and often more cruel, and as technology increasingly provides opportunities to do greater good but, if misused, can also do greater harm, do we not increasingly need the help of the Deming philosophy—its values, its principles, its logic, its practical guidance? If you feel interested by what you have learned in this short summary, I invite you to examine and study further Dr. Deming's unique work, and then see if you agree with me. Take a little time over it. (Misquoting the TV commercial:) It's worth it!

Dr. Deming's work is, I believe, hugely important, literally priceless, literally timeless. It is a real source of help and hope for making a better future, materially, socially, and mentally. That was the purpose of Dr. Deming's life work. What better purpose could there be?

I shall end by transcribing a couple of minutes' dialogue from another video, this time made around the time of Dr. Deming's 90th birthday: "The Deming of America." In this video, Dr. Deming can be seen as I knew him to be, rather different from what is seen on most other video material. At heart he was a modest and humble man, with a great warmth for humanity, both individually and collectively. And, to his death, he was regretful that he could not have done more in his blessedly long life, particularly for his fellow-countrymen in America and the rest of the Western world.

During the following extract the interviewer, Priscilla Petty, asked him to show her the Second Order Medal of the Sacred Treasure, awarded him in Japan in 1960. It was a rare honour. But, despite all that he had accomplished for Japan, and had begun to accomplish for the West in the latter years, he suggested that, after all, maybe it had just been "a matter of luck." Finally, look out for what he said when she asked him what he thought of a medal awarded him by the American President in 1988:

Priscilla Petty:
I asked Dr. Deming to show me the medal he received from the Emperor of Japan for his contribution to their economic recovery after World War II.

Narrator:
In 1960, the Prime Minister of Japan, acting on behalf of Emperor Hirohito, awarded Dr. Deming Japan's Second Order Medal of the Sacred Treasure. The citation on the medal attributes Japan's industrial rebirth and its worldwide success to W. Edwards Deming. No honour among businessmen and industrialists in Japan is more coveted.

Priscilla Petty:
How did you feel when he gave that to you?

Dr. Deming:
Oh, totally unworthy.

Priscilla Petty:
You felt unworthy.

Dr. Deming:
Yes.

Priscilla Petty:
Why?

Dr. Deming:
Oh, it was a matter of luck.

Narrator:
Quite obviously, a grateful Japanese people don't share Dr. Deming's humble view that it was only "a matter of luck." Each year, since 1951, the Japanese have awarded a medal named in Dr. Deming's honour to those companies which have attained the highest level of quality. His presence at an award ceremony like this one to the Kajima Corporation is considered the ultimate honour. And it's a strange paradox that this American, who is a national hero in Japan, until recent years was virtually unknown in the United States—a prophet without honour in his own country.

Priscilla Petty:
I asked about another medal from our President.

Dr. Deming:
Well, the medal from the President of the United States came 28 years after the medal from the Emperor of Japan.

28 years later—that is all he had to say about it. Yes, it was very late in life that the Western world began to appreciate the genius of this man. But, as the saying has it: "Better late than never."

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Best known in the U.S. and England as author of the popular book, *The Deming Dimension*, Dr. Neave was the founder of The British Deming Association and its Director of Education and Research. After his appointment as Principal Lecturer in the Quality Unit at Nottingham Trent University, U.K., he gave this speech for his Inaugural Address. Except for Koyanagi, all cited books are available in the SPC Store.

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