

Thirty two potential presentations on paradox

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This is a precis of the presentations which are either ready now or could be made ready in the times specified. Please choose which are of greater interest to you and we can commence with these. You can decide whether you want all of them or not. All are examples of paradox thinking.

1. Dynamic Equilibrium: Towards a Science of Mutuality (ready now)

Wendy Smith and Marianne Lewis have an article in the *Harvard Business Review* and a book coming out in August on this subject with Harvard Business School Publishing. They argue for a logic of paradox that uses both---and. These values operating in dynamic equilibrium in the sense that deliberate movement restores equilibrium, as in dancing, skate-boarding, acrobatics and heavier-than-air flying wherein forward thrust provides lift. We cite several examples from business and science, *doubting* in order to *verify*, *erring* to better *correct*, making *rules* to discover *exceptions* which reform those rules and *exploring* new ideas in order to *exploit* them and *explore* some more. We *separate* corporate departments to let them specialize and then *combine* the results.

2. Servant Leadership: The confidence of humility (ready now)

Is it possible to be a *humble servant* and a *proud leader* and the same time, or is such a person a hypocrite? It is possible because the paradox is only a seeming one. You are humble before the momentous import of your cause and the people fighting for it. You are elevated to fame and leadership by the success of your cause. Indian democracy is more important than Gandhi and racial equality in America is more important than Martin Luther King's survival into old age. The longer he stayed in *prison* the more *powerful* Nelson Mandela became. Those he led, felt like prisoners themselves. It works in business too. Greenleaf was a senior AT&T executive, the network was a *powerful servant* to a whole continent, *valuably* joining more and more people at ever *lower* cost. If the purpose of business is to *serve* then those doing this best are *leaders*.

3. Mary Parker Follett and the values of Quakerism (ready now)

Mary Parker Follet or "thoroughly modern Mary" died a year before I was born, 88 years ago. She saw power as paradoxical. There was top-down *coercive* power and bottom up *coactive* power which derived from employees acting in concert. There was unity achieved by rejecting outsiders and the marginal or a more creative *unity* achieved by including more *diversity*. It was the latter that was a mark of civilization. You could lead by barking orders but no one likes to be barked at, better by far to present the *challenge* and *elicit the skill* to meet it. Her contemporaries like Frederick Winslow Taylor spoke of the "one best way" to operate. She thought that *autonomous* groups could create a *unique synthesis* between them. It is important that she was a Quaker since the belief of that sect pervade her ideas. British and American Quakers created *forty times more wealth than their numbers justified*. What do the following organizations have in common? Greenpeace, Oxfam, the Joseph Rowntree Foundation, the American Friends Service Committee, Amnesty International and the International Voluntary Service? They were all founded by Quakers.

4. WIN-WINNIZE: The process by which all participants gain (ready now)

In conventional business we fight over scarce resources and those that manage these best gain at the expense of losers. Over time resources gravitate into the best hands and away from the worst. You

struggle to *win* in order to avoid *loss*. But where we resolve paradoxes everyone wins. The supplier needs money. The customer needs the product. Both get what they want. We do not always have to choose one OR the other, what about the choice combination? How many different functions are served by a mobile phone? Once we become sufficiently DIFFERENT we no longer compete. I feel only admiration for an armless man playing ping-pong with the bat between his teeth. His success diminishes me not at all. When we deal in knowledge everyone is better off. If I sell someone my Mars Bar then I must give up the chocolate to get the money, but if I sell them knowledge I *give* it and *keep* it! Ideas spell abundance. Rather than needing to win the game, why do we not both improve the game itself, so that players and spectators enjoy it more?

5. All Values without exception are paradoxes, a presentation filmed at FOM in Dusseldorf

Values are differences similar to left-right, up-down, tall-short, high-low etc. So the question always becomes different from what? For every value there is an opposing contrast. If I *love* my child I *hate* it when s/he runs into the road and the greater the love the greater the ensuing hate of what s/he did. This is not a contradiction because the love is for the whole child and hatred is for one stupid act. Similarly there is *scepticism* and *verification*, *doubt* and *certainty* in science, *rules* and exceptions, *courage* and *caution*. One cannot even define *competing* without invoking *cooperating*. If you travel with a small child on an airliner and oxygen masks descend, you are *egoistic* in fixing your own mask first but this is in order to *altruistic* moments later. You are useless to your child and everyone else if you pass out. You certainly need *courage* to save another from drowning but without elaborate *caution* you may be hugged to death. What is needed is the integrity of the whole values continuum. You voice *dissent* because you *support* your community which needs to wake up to this threat. A company cannot afford to *explore* unless it *exploits* what it finds.

6. The paradoxical structure of business strategies (ready in 3 days)

All successful business strategies originate in paradox. Michael Porter contrasted Low Cost strategy with Premium quality strategy. You are either cheaper than rivals and drive them from the market or you have such matchless quality as to monopolize custom and have no peers. He said the two must be kept apart, yet several companies combine them, mass producing what cannot be seen and customizing what can. Toyota is an example. Dell makes their computers cheap and their customized strategic software expensive. Should your strategy be *designed* and imposed top-down by a brilliant leader, or should it *emerge* from the interface with satisfied customers in the field? Henry Mintzberg argues for *crafting* strategies out of what emerges spontaneously. You know your customers like it and you know your people can do it, so shape what emerges, design with it. Blue Ocean strategy happens when you run *around* your opponent not straight *at* him. You risk doing something different and so avoid the red ocean of mutual attrition. A strategy has to be different. The empire of Alexander the Great collapsed no sooner did phalanx attack phalanx in identical ways as generals warred with each other.

7. Towards a Comprehensive Definition of Good and Evil (three days to prepare)

Scientists have been telling us for years that value judgments are without testable meaning. There are facts and then feelings about those facts and the feelings once split off from facts are without any coherent pattern. Good and evil cannot be scientifically described. Like the taste-buds on our tongues they are wholly subjective. These are mere "exclamations of preference," with much heat but no light. When people start to moralize violence is usually in the offing, "Evaluation stops thought".

However the use of paradox makes good and evil clear, comprehensive, descriptive and scientific. Our language uses different words depending on our judgement that a value has been taken too far or that it is just right and appropriate to the situation faced. We praise COURAGE as being appropriate and **recklessness** as being ill-judged and inappropriate. We praise CAUTION as being appropriate and **cowardice** as being ill-judged and inappropriate. The paradox looks like this...

COURAGE-----CAUTION

recklessness ----- **cowardice**

COURAGE----CAUTION remain joined by a continuum so the person is able to move back and forth and bring these values in *just the right combination* to the crisis of say- saving someone from drowning. (You must be very cautious lest they drown you.) Note that COURAGE and CAUTION so long as they remain integral, moderate each other. When risking yourself you will never deny precaution. When saving yourself will never deny the hazards involved in rescue.

But what is *descriptively* different between **recklessness**--- ---**cowardice** is that the continuum between them is severed and the integrity has broken apart. When COURAGE is no longer moderated it escalates to **recklessness** driven by the fear of being deemed a **coward**. Alternatively when CAUTION is no longer moderated it may escalate to **cowardice**, driven by fear of **recklessly** throwing your life away. You refuse to enter the water. Note that **recklessness** and **cowardice** *excite each other without moderating each other*. They are seen as stark alternatives. You have “what it takes” or you do not. Such values are both absolute *and* relative. They are absolute in the sense of being present in that person, yet they are relative in the finely judged way they are expressed. You need to save the drowning person *at least risk to yourself*.

All values take this form. Three other examples are given below

EGOISM-----ALTRUISM

selfishness----- **self-sacrifice**

DISSENT-----SUPPORT

treachery ----- **conformity**

DOUBT-----CERTAINTY

despair----- **dogmatism**

Our science depends on doubting all propositions until we have verified them and made certain.

8. Only green values can save us. Steps to an ecology of mind (ready now)

It is amazingly more effective to work *with* Nature rather than *against* her, drilling, smashing, dynamiting. If we harness business to wind, tide, sun and abundant hydrogen then such resources are renewable to the end of time. All we pay for are capture and storage and these technologies grow ever more economic over time. There is no reason the cost of renewables should not fall for ever more once we make the transition. Norway already has 74.8 % electric car usage. Those who convert quickest will win most. It will mean the end of proxy wars in the Middle East and having to deal with unproductive autocrats whose only distinction is the ownership of oil. Fish, forests and grasslands renew themselves if not plundered. Evolution dwarfs our attempts to innovate and has a lead on us of millions of years. We need to study what a combination of *chance* and *selection* can accomplish. We need an ecology of mind that matches the ecology of our environment. As of now it

very much looks as if Moby Dick, maddened by our harpoons, is coming for us and could smash our frail vessels.

9. Who “owns” a corporation, the shareholders or all those with a stake? (ready now)

Shareholders own certificates, not the company. They cannot help themselves to a company computer or claim a filing cabinet. They are entitled to the price of their shares and maximizing this is often counter-productive. If you maximise any one *part* of a system this will eventually harm the *whole*, much as cancer cells displace healthy cells. Moreover shareholders are a scattered aggregate of persons who rarely know each another. They are not a deliberative community and since they hold shares for an average of 4 to 5 months have little interest in the long-term future of any one company. One major problem in putting their interests first is that they come last in the process of wealth creation. First supplies of raw materials must be worked on by employees. Then these must be distributed and sold to customers. Only at this point is revenue generated and this must first be taxed and then the environment must be repaired. It is only then that shareholders can be paid off. What they are entitled to is the residue and if they waited their turn all would be well. But in practice they do not wait their turn. They are given advance notice of prices and dividends that have been targeted. Since that money has yet to be made it *inevitably reduces the share of other stakeholders*. We never get to know what suppliers and employees might have accomplished had they been better paid, equipped and trained.

The problem with profit maximization is that profit is a *lagging* not a *leading* indicator. Steering your company by profit is like steering a ship by the wake left far astern. Economic choice is said to be “rational”, but in fact the stock market is like a beauty pageant in which I guess the contestant *other people*, not *I*, will select. Our *personal* judgements are put aside in favour of *crowd* psychology. We can discover what stakeholders are worth by a process known as gain-sharing, employees, suppliers etc. come up with new initiatives and get say – 50% of the economic gains these realize. We soon learn who is vital to productivity and who is not.

10. The Paradoxes of Creativity (ready at one day’s notice)

Affluent, high-wage nations cannot compete on price. Nearly all standard products are more cheaply produced elsewhere. To raise wages is to price ourselves out of markets. The only escape is to be creative and win a temporary monopoly. Yet creativity itself is paradoxical and many of us shrink from venturing there and confronting “contradiction”. Anything creative gives us “a *shock of recognition*”. The shock comes from never having seen this *whole combination* before. The recognition comes having seen its *parts* and *components* earlier. We also recognize its value to us. The *strange* has become *familiar* and the familiar strange. Ideas that we always thought far *apart* like box-kites and ships’ propellers are suddenly brought *together* in the Wright Brothers plane. It seems that forward *momentum* produces *lift*, a novel notion at that time. Creativity is a fusion of the *new* and *old*, two or more bits of *realism* fused into *idealism*.

Those researching into creativity have argued that *divergent* thinking (typical of *arts* graduates) in search of ideas precedes *convergent* thinking (typical of *science* graduates). We think *vertically* in straight *lines* but also *laterally* in *cross-connections*. We bring *skills* to *challenges* and *answers* to new *questions*. We *disorder* our ideas so as to *re-order* them and *open* our minds to *close* them on something more substantive. We get *feelings* of excitement when nearing a breakthrough but *think* hard about the validity of those feelings. Have we indeed found something?

11. Turning creativity into profitable innovation (ready now)

Creativity in business is not enough. People do not buy “brilliant ideas”. They rarely even recognize these. They buy ideas turned into well-working products. The *ideas* must become *realities*. We need to generate an *abundance* of ideas if we are to exploit the *scarcity* of products that result. The *pure knowledge* generated by universities holds the key to several *commercial applications*, which is why science start-ups grow in the vicinity of universities. A new *combination* requires two or more *separate* disciplines, hence it is better for innovation to be near a university than in it. Technology consultants act as a bridge.

Anything new tends to be full of bugs. The Dyson vacuum cleaner had more than 250 prototypes. Hence to get anything ready for the customer needs endless *errors* followed by *corrections*. It also requires a *team* to champion the *individual* inventor, to create a project, assess it, critique it and generate enough momentum to see it through to a viable product endorsed by potential customers. A single inventor is easily ignored but not twelve people burning with excitement. Innovation requires that we *change* yet *endure*, take two or more *core competences* and *fuse* these. Innovation is both *internal* (R&D) and *external* (a new start up) These need to be combined. If you have a *sustained purpose* only then can you recognise *happy accidents*. *Fortune* favours the *prepared mind*.

12. How China and the West misunderstand each other (two more days revision)

Chinese growth is the greatest phenomenon of our lifetimes. It has now gone on for two generations at a growth rate between 6 and 2 times faster than the USA it is the preferred partner of 68 countries compared to 39 nations which prefer the USA. China is neither *capitalist* nor *socialist* but has forged a synthesis of the two that works better than either one. It has broken up the sterile dualism of *competing* and *cooperating* to do BOTH. It both *protects* infant industries until they are strong enough and lets them loose when strong enough to compete *freely/globally*. Its fastest growing sector is Town and Village enterprises. These have shared ownership between *local governments* and *resident entrepreneurs*. The locality boosts the company and its bye-laws assist.

China boosts “horizontal technologies” – those that effect a thousand other products, e.g. microchips, industrial robots, machine tools, three-dimensional printing, lasers, metal ceramics, liquid crystal displays, high tensile steel, universal joints, graphene etc. If say- micro-chips are *horizontal* these will improve one thousand *vertical* products by putting tiny brains inside them. It is obvious that such tools are strategic in raising overall productivity. While Western governments play the role of a *Referee* of fair competing, the Chinese government plays the role *Coaching* the winning team. Coaches are much more popular than Referees. They are on your side.

The Chinese think of values as *complementarities*, i.e. Yin-Yang. The West thinks of them as *adversaries* e.g. Left vs. Right. Business needs harmony. The Chinese character for dilemma is *Spear* and *Shield*. Do you *thrust* or *parry*? There is certainly a paradox at any one moment of time. Yet warriors go into battle with both. Moreover in business the sharper your swords the better must your shields be, so the two *actually increase the sales of each other*. There is a popular Chinese folk tale on exactly this topic.

13. The values of democracy are paradoxical (2 more days of revision)

The values of democracy have always been elusive. Britain who started representative democracy does not even have a written constitution. We talk vaguely of checks and balances but what we really have are the norms of a club, initially for gentlemen only, but now including both genders. Parliamentary procedure has been added to over time by ad hoc increments. EM Forster’s *Two Cheers for Democracy*, typifies this lukewarm support. “It is better to jaw, jaw than to war-war,” was Churchill’s opinion, but nearly everything is better than war!

However if we look carefully at democracy we see it as a nest of paradoxes. It combines *individualism* with *community* by electing an individual to represent a constituency or community. S/he is not the delegate of that community but is free to do for them as s/he believes right. If they do not concur with his/her decisions then they can refuse to adopt the candidate for any future election. But the candidate is guided by both personal conviction and by the known views of constituents. Democracies also *dissent* but in a *loyal* manner. This is summed up in the sentence, "I disagree with everything you say but will fight to the death for you right to say it." This is not contradictory because "everything" is at a concrete level and "rights" are at an abstract level. It is the job of at least one party to oppose the government but this is known as the *Loyal Opposition*, loyal because they uphold parliamentary procedure and opposition because they verbally disagree.

We persuade each other *openly* yet we vote *secretly*, so that people who try to bribe cannot be sure they succeeded. We elect people on their supposed *merit* yet each of us has an *equal* vote. Our *conflict* is in reality a search for *consensus*, on such issues as votes for women and tolerance for sexual preferences. Most politics are divided into *Right* and *Left*. The right believes that in the beginning there are *Standards* and only people living up to such standards are worthy of rewards. The left believes that in the beginning there are *People* and the role of standards and rules is to elicit the best capacities out of them. Legal procedures are similarly paradoxical. Defendants are *innocent* until proved *guilty*. They are *prosecuted* and *defended*. *Professionals* say what is legal, yet *amateurs* or lay- persons decide the facts of the case. Justice must be done in *public*, yet juries decide *privately*.

14. The paradoxical values of civil disobedience & non-violent demonstration (3 days needed)

We cannot stop violence and war by returning that violence. When we do that the stronger and the more violent will inevitably win and the police, who have been given a monopoly of lawful violence by the state, will usually triumph. At the heart of civil disobedience is the capacity to confront *violence* with *non-violence*, in an attempt to show that the violence was wrong and misplaced initially. Instead of *raising* hackles on both sides you seek to *lower* these. You confront the clear *aggression* of authorities with the *self-control* of objectors. And you demonstrate *publicly* to incline the *private* opinions of the audience towards your cause. When shown on TV authorities may be disgraced and lose office. Gandhi argued that when you exposed grim *truths* of imperialism but did so in a *loving* way then the legitimacy of imperialism would crumble, assailed by the very democracy which the British claimed to personify and refused to extend to colonial subjects as "lesser beings". Gandhi himself had been forcibly ejected from first class carriages he had paid for and thrown out of horse carriages for refusing to sit with the driver. He made these *personal* and *private* snubs *social* and *public*. "You must be the change you want to see in the *world*." As a British trained barrister he specialized in the human rights denied to himself! How paradoxical can you get?

Martin Luther King took a *stigmatized* people and likened them to the *chosen people* of Israel escaping from Egypt. He *marched as in war* and then *knelt as in prayer*. He confronted armed *dominance* of guns and dogs with the *equality* of human dialogue and showed us all that segregationists were incapable of handling a polite conversation with a black person. He demonstrated that when you *relax* before people trying to make you *tense*, then you teach your body not be afraid, panic and run. Like Moses he had been to the Mountain Top and "seen the promised land". Black people could show that they behaved better and more democratically than those oppressing them. But there are limitations to these tactics. *They rely for their success on the democratic beliefs of authorities and their capacity to be shamed*. There are no such beliefs among the world's dictators. What we need is something like the Montgomery Bus Boycott.

15. Does the war in Ukraine give us an opportunity to end war for ever? (5 days preparation)

One of the oldest ideas in the world is that behind every crisis is both *danger* and *opportunity*. So true is this that Chinese characters incorporate both words to express crisis. That the war in Ukraine is a danger to the world is increasingly obvious, but is this also a priceless opportunity to stop nations resorting to war, not just in the near term but for ever more. If we can punish any attempt at war with powerful economic sanctions so that the means to pursue armed conflict is crippled, then we may have reached a milestone in human history. Nations may henceforth rise and fall by what they can *supply* rather than in what they can *destroy*. Consider some hopeful signs. The US was reckoned to have 100 times the expenditure on arms than Vietnam and yet it lost. Power comes from *coercion* and here the US prevailed, but also from *co-action*, a population coming together and here the North had a clear advantage. Despite the deaths of two and a half million North Vietnam prevailed and the US did not. In Ukraine the willingness to suffer is very different as between opponents.

Afghanistan has been described as the “graveyard of empires”. It is easily beaten in set battles but then becomes impossible to rule, so rebellious is the populace. Even the Soviet’s had to withdraw and the British four times! Having to subdue Ukraine faces the same problem, even if Russia won the set battles and that is looking unlikely, they would need to subdue the population which is near impossible. They lack the manpower to do it. If they were being assailed with sanctions as well, they would clearly have to stop fighting to survive economically and if they did, *the way to stop wars without greater violence* would have been demonstrated.

Consider the fall of the Berlin Wall and the ensuing collapse of the Soviet Union. How or why this happened is still mysterious. There was no challenge from the West, no reason for this to occur so suddenly and unexpectedly. It happened spontaneously of its own accord. What seems to have happened is that the receipt of long-range television programs could not be halted and that while some watching Dallas were wondering who shot JR, the populations ruled by Communism could not help noticing that the characters in this soap were ten times more affluent than they were. Communism had failed miserably in the distribution of consumer goods. Viewers were having none of it. Russia’s Achilles Heel is its economy. It survives by the value and abundance of its fossil fuels and its capacity to add value is meagre. We can do without Russia AND its fossil fuels and stop fighting over scarce resources. We can usher in peace *and* renewables. The power of the *economy* can check-mate the power of *war*. For the first time we can say truthfully that Ukrainians “did not die in vain.” We can choke off the powers of rogue nations by not trading with them, yet sheer attrition plays a part too. The war in Iraq cost the US taxpayer \$2 trillion, with its companies running for the airport so enraged was the population.

16. Varying speeds of economic development. Why the West grows so slowly (ready now)

Why do some economies grow so much faster than others? How come so much of East Asia is overtaking us? How has South Korea in just 20 years, grow at a rate that took Britain 200 years and the USA 150 years? According to Ha-Joon Chang the paradox lies in the celebration of the *Free Market* espoused much of the West and the need to *Protect infant industries* supported by a number of nations, especially in East Asia. A good example was Toyota. This was protected by high tariff walls by the Japanese government. It made the Toyopet, otherwise known as the “rolling ash-tray”. When exported to the USA it was greeted with such derision it had to be withdrawn. Toyota went bankrupt and had to be rescued by the government, which forbade both Ford and GM to locate there, lest they kill any infant Japanese car industry. Yet Toyota persisted today makes ten million cars a year and is worth more than the entire US auto industry combined. The Lexus is the Toyopet full-grown. It took 25 years of support for the child to become an adult.

Japan and the USA are all for a free global market today. Their industries are strong *but that is not how they became strong*. For much of the 19th century American industry grew its muscles behind high tariff walls, deliberately sponsored manufacturing, urged on by Alexander Hamilton, and barred the manufactured goods of rivals, especially Britain. It used its political power to dictate trading terms. Yet today developing countries are forbidden to use the methods that the US and UK once used and where any nation needs bailing out the IMF and the WTO will refuse to help unless giant international corporations are allowed free access to its markets and its government rules less. This “level playing field” has one set of players paid twenty times more than their native rivals, not very fair. The truth is that you must *first* protect infant industry and *then* set it free. The West is “kicking down the ladder” by which it climbed itself. “Do as I say” not “Do as I did.” The result of this folly is ever slowing global growth.

17. The Leader as story-teller and “film director”. (two days to get ready)

Part of the art of leadership is to give significance to the lives, tasks and careers of your employees. You need to locate them as characters in an unfolding drama, a field of meaning. You need to interpret the past, present and future of the company and steer this through exciting encounters to a happy conclusion. All stories are a series of crises, to *accept* or *reject* a suitor, to *solve a mystery*, to *achieve a dream*, to *keep a promise*. This constitutes a series of paradoxes that test our metal and constitute lasting memories of success and failure. The leader sets these out and keeps reminding followers where they are in the story and what they face and what the outcome means. They are protagonists in an exciting drama, heroes of their own lives, masters of their shared fate.

The image of a film director comes to mind, because the leader is in the midst of professional actors. Vivian Leigh knows better than he does, how to get a man to do as she wishes. He does not have to tell her what to do, he describes the situation and elicits the wiles of the character she is playing, exclaiming “cut” when she has got it just right. A film is shot at many locations in *bits* and *pieces* and it is the director’s job to put this particular scene in the *wider context* and remind everyone where we are in the story and what this scene means. What is all important is the culture of the set, how all those present help each other to succeed. Any story is a parable it does not give you orders it prompts you to make wise choices and reveals the consequences.

18. Universal laws and particular exceptions (ready now)

This is a tribute to the cross-cultural work of Fons Trompenaars, most especially his dilemma or paradox on Universalism---Particularism, a cultural dilemma on which nations vary considerably. He presents a dilemma. “You are a passenger in a car driven by your best friend that is breaking the 20 mph speed limit when you hit and injure a pedestrian. Your friend ends up in court where you are the sole witness. What right or reason does your friend have to expect your support?” Do you come to the aid of a *particular* friend or do you do your *universal* duty in bearing witness. Is it to be *love* or *truth*, *rules* or *exceptions* ? Christian Protestant nations in Europe are the most *Universal* while Asian nations tend to be more *Particular* with Catholic southern Europe and South America in between. What actually drives morality and creates wealth is *the exception that improves the rule*, the difficult task of persuading a particular friend that all your resources are at her/his disposal so long as the law is respected. The connection between the two must not be broken.

However respect for one or the other makes deep differences. We create wealth by generating the product with the lowest cost and the *universal* law of economics tells us that this will be preferred in the market place. On the other hand if we create a brilliantly *particular* and original product of exceptional beauty, then we have no competitors and can charge what the market will bear. These are two very different ways of creating wealth. Even so they are often combined. The Mattel toy

company makes Barbie dolls cheap enough to see off competitors but also sells Marie Antoinette in magnificent finery, even underwear for \$1,250. You pay double for business class on a flight. We can take *exception* to a *law* Immanuel Kant tells us, but we must do it in a way that allows a new law to be made out of the manner of our disobedience. Is it better to obey the *letter of a contract* or is the *intimate relationship* between us more important? The evolution of our planet is part *chance* part *choice*. *Lawful* theories of probabilities tend to be stymied by *exceptional* Black Swans. Are choices on the stock-market *rational* or are we reduced to *guessing* the judgements of a mob?

19. The Paradoxes of a networked system (ready now)

Any network with its *vertical* and *horizontal* threads is a set of paradoxes by definition. It is a *global* set of *localities*. Every node or *unit* has a *relationship*. We have neural networks both *inside* us and *outside* of us. Leadership in any network seems to be *emergent* rather than *appointed*. Whoever *gives* most help to others will *receive* more messages and more information and become an authority on this topic. It is fatal to have a single source of authority since this will become overwhelmed with urgent messages. What are needed are *decentralized centres* of excellence, distributed around the net, so that certain nodes specialize in certain types of excellence and everyone knows whom to consult on what subject. Network members should be asked in what they would like to specialize.

Networks can expand to include new concerns for example Environmental and Social Governance issues. All networks are within a wider network, the ultimate network is the ecosystem itself and companies must learn to take responsibility for this. Networks can have an overall purpose and theme that joins them. For example businesses may cluster in a network for the purpose of industrial symbiosis wherein the "*waste*" of one firm becomes the "*resource*" of another. In this way they waste nothing. Networks are liable to exponential growth since *relationships* are multiples of *memberships*. The one millionth member of a network makes possible over 999 thousand new relationships. This explains why certain issues "go viral". But networks can be dangerous especially when cheap algorithms are used in place of more expensive people. Then rancour can spread because algorithms are machines pre-programmed and unalterable until re-programmed. They are incapable of changing their minds.

20. Why are small groups or teams so influential throughout history? (3 days to prepare)

It was Margaret Mead who wrote. "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed nothing else ever has." There were twelve disciples, twelve apostles, round twelve in a communist cell, twelve in jury, around that number in start-up, a project group, groups championing an innovation, groups preparing the modules of launches into space, groups forming a network of expertise. Edmund Burke praised "the little platoon" as the bulwarks of society. The famous Hawthorne Experiment was a small group phenomenon. Its productivity climbed 39%.

What is it about the small group that can perform miracles? It is capable of resolving the paradox of the *individual* vs. the *group*. A team or group is *small* enough to allow any of its members to shine and originate ideas yet *large* enough to support, encourage, refine and implement the larger project. It can make the *ideal* *real*, turn an *image* into an *object-for-purchase*. It can champion an innovation and enthuse about its potential. It can challenge the many objections by those who do not want familiar and comfortable procedures changed. A person with a creative idea can be very lonely without a cheering section to back her/him up. One person is easily ignored but not twelve wild with enthusiasm.. A *dynamic* idea needs *equilibrium* as we argued earlier if it is to survive and this the team provides, as *notion* become a *prototype*, a *mental construct* an *actual product*.

A team of strangers grows as a system as they discover just what it is its members know and have experienced in the past. It can and does elicit these *skills* from each other and bring them to bear on the *challenge* faced. When skills match challenges there is a wave of euphoria and the group becomes “hot”. It is not just *individuals* who are growing but the small *group* as a system as it registers the resources as its disposal and fills up with these. Each member not only *knows* but they *know-who-knows* and how this can be accessed. They are a network. Small groups are temporary. They arise to solve a problem and then disperse to join other groups which have other problems to solve. The *Mittelstand* of German-speaking nations are a tribute to the power of small group. Everyone knows everyone in depth and such intimacies are creative. Haier, the Chinese white goods supplier, has created 6,000 micro-enterprises of 6-20 members, and may have replaced bureaucracy for ever. Each enterprise has profit-sharing. There are 6,000 CEOs. This not only works in China but in Kentucky.

21. The paradoxes of scenario planning (two days preparation needed)

The conventional wisdom is that planning has failed and does not work. It worked once when large Western companies dominated the world or when the Soviet Union planned to industrialize apace, but so great is market turbulence today that the best we can do is dash for short-term goals and snatch low-hanging fruit. Planning is the victim of *certainty* tipping into *uncertainty*. Why plan when you cannot tell what is going to happen? No wonder 90% of the American departments of long-range planning closed in the 1990s. Yet there is a kind of planning that takes for granted that we will not just be occasionally *right* but usually *wrong*. This is called scenario planning. We look at current controversies and create three to four scenarios about how these could eventuate. In each of these one side prevails over or compromises with the other to create different scenarios. We prepare our company to *survive in all these three or four contingencies*. Even where a scenario is “bad”, say a pandemic, those that are best prepared will survive better than those unprepared. Moreover where we have modelled these events, we will be quicker to recognize what has happened and respond.

All companies are in a race to learn and we learn by being surprised by the difference between what we *expected* and what actually *came about*. The more vivid this contrast the more memorable is the lesson. Scenario planning registers our expectations so we can easily compare what happened to these and learn from our mistakes. We also *want* certain things to happen and unless this is registered we will not know to what extent we have been *confounded*. We need to plot a *different* path to the *same* objective. What we actually notice are *variances* but to see these, we need a sense of *direction* to begin with. Our strategy can only improve if we have one in the first place. What scenario planning does is make all concerned alert to the way the environment is changing. Only if we *carefully model* uncertainties can their *variations* be properly understood. One result of scenario planning is a rise in alertness. Managers notice many more crucial *events* because of earlier *guesses*.

22. The Stewardship needed for creating true value. (ready now)

When we “add value” or “create wealth” or “make a profit” is this happening in reality? When we are faced with a deteriorating environment which needs to be repaired at great cost, we may realise too late that *wealth* was, on balance, actually being *destroyed*, not created and shareholders were investing in this process. Had we factored in the damage caused we would have seen it as plunder. What is needed is stewardship of the world’s resources.

Stewardship is defined as taking care of something or some living system so as to sustain the asset entrusted to you. The Awazi Hot Spring in Japan is 1,300 years old and has been treasured down the generations. We should follow the logic of the Serenity Prayer. “Dear God give the serenity to endure the things I cannot change, the courage to change the things I can and the wisdom to know the

difference.” In the modern corporation shareholders are *too precise and narrow*, stakeholders are *too broad and sprawling* and what we need are Contributing Stewards, fitting the enterprise into the environment in a benign fashion and keeping score. Triodus in the Netherlands had a renewable energy portfolio and lets all depositors know how their money is being used, Its motto is “use your *head*, follow your *heart*”.

It is for the Board of the Company to act a steward for all that is living, the people, the environment, the customers and the community. The State acts as the steward of all other stewards. Productivity would greatly improve if we worked *with* the natural environment. Some governments act as *Referees*, some as *Coaches*, but the Steward combines both in an overall purpose. The rise in Sovereign Wealth Funds shows this is working. The Triple Bottom line offers us three overlapping circles, People, Planet and Prosperity. Stewardship is the place these three circles overlap.

23. Ten Logics of Wealth Creation (ready in three days)

There are ten logics of wealth creation, all of them paradoxical

1. We *doubt* and are *sceptical* in order to become *certain* and to *verify* . This is the manner in which we conduct science
2. We make *errors* in order to *correct* these quickly and improve continually. This is called an error-correcting system, improving both cost and quality.
3. We allow *random* genetic changes and then proceed to natural *selection*. This is the logic of evolution and making good use of happy accidents.
4. We identify with our customers in the *community*, serve them and discover that this is very much in our *self-interest*. Moreover the first drives the second which drives the first.
5. Where we *cooperate* internally our team successfully *competes* externally and becomes an unbeatable combination. The two values strengthen each other.
6. *Innovating* may all be in vain unless customers are prepared to *imitate* what you are supplying by the millions. China is now 80% cashless. Customer speed is decisive.
7. We *plan* in order to *surprise* ourselves the most. With scenario planning we are mostly wrong yet are alerted to what we did not expect and we learn faster.
8. We *explore* our business environment so as to find something we can *exploit*, the funds from which pay for more exploring
9. We will discover diverse kinds of *merit* in employees and people if we weigh these *equally* to discover what human resources are needed for what challenges.
10. Should we seek to win *finite* games or should we regard those games as *infinitely* improvable in themselves and concentrate on developing the game to enrich humanity?

24 Corporate Social Responsibility: Some Stellar Examples (3 days)

Have some corporations shown us the way in regard to social responsibility and public benefit? Among outstanding examples are Johnson and Johnson and its Wellness Programs. The company concentrates on keeping its employees well by regularly monitoring their health on a number of instruments within the company, counselling them on their life-styles, paying the expense of gyms, lowering the price of all healthy foods in the canteen, offering free advice to those in debt, in litigation, divorce, bereavement and in pregnancy. It turns out to be incredibly more effective to keep people well than to wait for them to fall ill and then doctor them. Health insurers have categories of good health and the company pushes to get all its people in the highest category through diet and exercise. Some business meetings that the form of walks. Everybody is given a pedometer and told that six miles a day is ideal.

The program was evaluated in the 90's and every dollar spent on wellness reduced the costs of absenteeism, turn-over, and illness by three times that number. Studies in Europe in this century where J & J has a major presence varied from paybacks that were twice to five times the initial expenditure. Were governments to evaluate such feats then the sums saved might be deducted from corporate taxes as evidence of gratitude. All business is helped by better public health.

Paul Polman of Unilever was famous for his CSR. He dug water wells in Africa because nearly all his products needed fresh water to operate. He ran a world-wide campaign to get poor children past their sixth birthday by home hygiene. He sponsored national hand-washing campaigns on TV and pin pointed several disinfectant products that saved lives, doubling their sales. He helped run self-esteem courses for adolescent girls by showing that their friends rated them much higher than they rated themselves. He delivered equal pay for women compared to men and trained tens of thousands of female business women the world over, while delivering a share price eighty times that of 1984. When Kraft tried to take Unilever over, the sovereign wealth funds invested in Unilever saw it off. We should be rewarding Unilever in the market place for its generosity.

25 What is the true value of infrastructure? (Four days to get ready)

We seem to have a strong *dislike* for what we cannot *add* up. The English expression "that does not count" says it all. No one dares claim that infrastructure is without value. The problem is we cannot estimate the amount it makes and this leads us to underestimate its importance. The bean-counters need to be *exact* and in the face of *near-infinite* pay-offs they shrug off a bonanza. Suppose there is a river crossed by a ferry and now we have built a bridge. It used to take 200 people twenty minutes to cross it now takes 2,000 people fifty seconds each. What is this WORTH? We would need to calculate the rising price of property on the approaching road, the five warehouses now built down town. The extra business done by shops. The number of motor vehicles sold. Revenue from parking. Businesses now choosing to locate in town. It is hard to know where to stop because one rise triggers another and so on.

Modern infrastructure is incredibly more effective than historic infrastructure. It is NOT necessary to dig up roads delay traffic and scatter cones. Utilities can be put beneath large curb-stones at the road's edge and electronically monitored. You know just where the fault is and it is repaired in minutes. While the payback for infrastructure can only be guessed at, we know that both Germany and Japan boomed after World War II when new infrastructure was needed. We know that when China was building infrastructure, more than the USA in the whole 20th century, it enjoyed double digit economic growth and now has the most extensive road and rail networks in the world. We know that developing economies often grow fast when laying down infrastructure. We know that China's Belt and Road initiative is designed to build roads, bridges, ports in hundreds of nations and enjoy the resulting booms. KPMG recently tried to calculate the value of the Dutch railway system and found this so in excess of their estimates as to be infinitely large. How do you measure something seven million people use daily? What does it cost the USA to have very few trains beneath its airports, to take three years to bridge the Charles River when the Chinese do this in three days?

26 Is business a game? If so is it a Finite or an Infinite game?

Non-lethal conflicts are usually regarded as a games. In the business game you compete at serving people and no one gets physically hurt although they may lose money and retire from the game. Those who win can afford to train themselves even better and usually go on winning. But the game has at least two objectives to win and bask in admiration and a sense of triumph. But you can also choose to honour the game itself and make this into a more perfect expression of human capacities. We will call the first a *Finite Game*, the purpose being to win and second an *Infinite Game* in which

the art of creating and selling valuable objects reaches new heights and this business becomes an honoured calling through your feats. In practice these objectives overlap. You win say- a judo contest and also through your skill, add lustre to this martial art. You have brought credit to the sport. But if all you care about is winning, you may be inclined to cheat. If all you care about is the game, you might settle for being second best. True excellence lies in absorbing the finite into the infinite game and resolving the paradox.

In the finite game the *fittest survive*. But in the infinite game the sport or *discipline evolves*. In the finite game the winner *excludes* the loser. In the infinite game s/he *teaches* better plays. The winner *takes* all in the finite game. In the infinite game the improvement is *shared* by all. Aims are *identical* in the finite game, win. Aims are *diverse* in infinite game, enjoy, learn, contribute. Rules of debate define the finite game. The grammar of original utterance define infinite game. In the finite game rules are *fixed* in advance. In the infinite game they are *agreed* for mutual delight.

If we look at Asian martial arts, especially at those ending in D O, then it is clear an infinite game is intended, i.e. judo, kendo, aikido, kudo, bushido etc. Do means "way of" as in the gentle way, the way of swords, the way of hands etc. You bow to your opponent and are scored for your respect of the sport as well as prevailing in combat. If this is the spirit in which business conducted then clearly respecting the environment and fellow employees is part of the game. You are dedicated to business as a fine art, as a benign force in society.

27. Is the Newtonian paradigm an obsolescent view of science? (3 days)

The culture of a nation is much affected by what its people regard as reliable knowledge. If knowledge is deemed "scientific" it becomes privileged and must be used in preference to other approaches. Sir Isaak Newton was very much a pioneer of physics. By following his lead Great Britain became immensely powerful in the world and ushered in the Machine Age, becoming as China is today, the workshop of the world. Newton said the following about himself. "I know not what the world thinks of me but I know how I think of myself. I am like a boy playing by the sea shore intrigued now by a smoother pebble, then by a prettier shell, as the great ocean of Truth rolls before me."

What he perhaps failed to grasp is that objects and objectivity can only take us so far. Yes, there are many grains of sand, many pebbles and many shells of dead sea creatures, but the "great ocean of truth" is an *unbroken series of wave-forms*. It throws us into very different realm of science called the *frequency realm*, wherein reality and energy comes to us in paradoxical wave-forms of *amplitude* and *frequency*, *peaks* and *troughs*, *crests* and *valleys*. Quite suddenly science has become a series of complementarities, not just pieces but wholes, not just units but patterns, not just objects but fields. Is this frequency realm pervasive? Very much so, water comes to us in waves and ripples, but so does sound, speech and music, so does light, so does magnetism and our brains create electro-magnetic waves spontaneously, so that life itself consists of wave-forms while objects are dead. East Asians do not even have words for objectivity. They see no reason to treat people as if they were dead. When translating the word they say, "the guest's point of view", i.e. a stranger who cannot see relationships, only separate people.

Today Newtonian physics is only part of a larger reality. Thanks to quantum physics we know that energy takes two paradoxical forms *particles* and *waves* and you need different instruments to see first one then the other. Niels Bohr created his family crest using the Ying Yang symbol to show physics had complementarities. Quantum physics is behind nearly all high tech, computers, micro-chips, lasers, magnetic resonance scanners, many kinds of rays, artificial intelligence, machine tools etc.

The whole idea that one person *causes* another living organism to behave or that this is in any way desirable, is seriously outdated. Rather the wave forms we generate cross the wave forms generated by another to form potentially harmonious patterns or interference waves of sometimes elegance and beauty. You can kick a football and propel it through a goal. But be careful that the black and white mound you kick is not a pit-bull. Because the creature will come full circle with some ferocity. When dealing with living nature we need a very different paradigm! That slavery and the slave trade followed on Newton's laws of motion, may not be a coincidence. That we insist on the "market mechanism" to this day, when we are clearly living beings is another doubtful legacy. Machines do not grow!

28. Are there value integrities that could save us?

If we are right that there are major paradoxes in the world but that we grow healthy, wealthy and wise by resolving these dilemmas, then what are the major challenges we face? We will find these answers in the jaws of Wicked Problems. The greater the crisis the greater the opportunity. The fiercer the conflict the firmer the final consensus. Giving the suffrage to women did *not* engulf us in emotive utterances as many men predicted. One major paradox is War vs. Economic power used to undermine wars, see presentation 15. If we get this right, the solution could be historic. A second major paradox is free-market capitalism vs. socialist market driven economies. What the Chinese may have found, is a viable synthesis of the two. That the PRC is officially communist should not stand in the way of appreciating the feat they have accomplished, which is to use market forces for the ends that are sought by government and by humanity. The world's oldest civil service has shown that leadership in renewable energies is possible while gaining world market share. The quarrel between markets and those able to read markets is effectively over. Both had powerful points in their favour but these have now fused. It is because you respect markets that you can use them effectively and accelerate those forces that favour your aims.

We also have the opportunity to put stakeholders in the driving seats of corporations, this includes employees, suppliers, the environment, tax authorities, customers, governments and of course shareholders, see presentation 9. We can show shareholders that they gain by empowering those who actually create the wealth, that the better these are treated the more wealth will be created for shareholders themselves. We have to show that excellence takes time. We need to build our industries not just shake the money tree and practice extraction. If we milk corporations for money we will be left with motley residue of ageing cattle .

Companies like Johnson and Johnson, Unilever and Ikea that address important social and environmental goals need to be rewarded by consumers in the marketplace, see Presentation 24. Were our gratitude for their health-giving policies to increase their sales by a mere 10% then they would increase such activities and thousands of other companies would join them in claiming social benefits conferred. Yes, there would be greenwashing and a host of spurious claims but we could build platforms that checked up on these and produced league tables of genuine benefactors. Women do most of the shopping and with enough determination could get nearly everything they asked for including a fairer world.

This is just a beginning.

29. Can a whole society be addicted? The curse of materialism. (4 days)

What is the source of addiction? Does it have anything to do with our values? How do we become addicted in the first place and how do various substances become involved? Let us take the case of alcoholism as an example. We all need some level of *tension* when we act. We need to summons

energy to get things done, but then we need to *relax*. The relaxation following tension is pleasurable, so is the tension following relaxation, where it takes the form of exertion. The parts of our body that relax and tense up are the sympathetic and para-sympathetic halves of the nervous system. Many of us maintain a stable equilibrium. There are few generalizations one can make about alcoholics but one is that many are manipulative in their human relations. They play on the susceptibilities of their targets.

This is not a very satisfying process, especially for the targets and they retaliate. Such relationships become increasingly tense and the alcoholic-to-be longs to relax. Most of us relax in love, friendship and conviviality, but the manipulative person cannot do this and carries an unpleasant burden of tension in his/her body. Now alcohol is a mild depressant and relaxes the nervous system, making us less shy and self-conscious. The alcoholic now discovers a way of *manipulating his/her own body with alcohol*. But so high is the level of tension and the urge to relax, that after one drink s/he cannot stop. Drinking turns into a binge and relaxing turns into a drunken collapse. When the drunks recover they conclude that their *weakness* has got the better of their *strength* and this must not recur. But in exhibiting strength the person becomes more tense than ever. Moreover to advertise victory over the bottle another drink must be taken and when that happens so does the ensuing binge. *Tension* and *relaxation* oscillate crazily. The alcoholic stumbles in this vicious circle until s/he dies. Note that *a substance or thing has been substituted for another person*. You know you are in trouble when you drink alone.

Alcoholics Anonymous forbids its members to drink ever. When the urge to drink becomes unbearable you ask a designated friend to sit with you and relax you. You repeat the Serenity Prayer that places *endurance* and *change* into a gentle rhythm in place of the extreme oscillation of alcoholism. This is the nub of all addictions. They try to replace uncomfortable relations with physical substances, money, alcohol, food, drugs, roulette, sex toys or what have you. These are addictive in the sense that they never really assuage the craving. Does she just want my money? Such a society tries to relieve loneliness with purchased material things, but these are poor companions. Alcoholism costs the USA \$2.05 for every drink, \$877 for every person per annum and £249 billion per annum.

30. Conscious Capitalism: Endearing yourself and profiting therefrom (ready in 2 days)

Capitalism has long been dedicated to expanding itself, to even more capital. It is less in the business of making cars, more in the business of making money out of cars and much else. But in reality the capitalist system is obliged to do much more than this if it is to generate capital. It must develop science and high tech., train its employees and suppliers, develop skills, raise productivity, promote innovations, create wealth and satisfy a multitude of customers better than its rivals and so raise standards all around. It supports scores of professions and makes taxation, infrastructure and higher standards of living possible. If our environment is to be sustained business must do this too. Many of these activities are more significant and life-affirming than capital accumulation itself. The question therefore arises, should capitalism become more *conscious* of all the benefits it bestows? It is not just that all these activities add up to profit, but that profits are needed to keep all these activities going. Should we be as conscious of these *activities* as of the *profits* made therefrom? Do we get warmer feelings from *enriching shareholders*, or from *helping customers* and saving the environment? Were we to extol the latter people might be more inspired and better motivated?

Research done at Bentley college selected 28 prominent companies which the public said they *loved* because they benefitted their populations. These included UPS and its college scholarships for young drivers, Whole Foods and its microfinancing Peace Corps, Southwest and its record low prices and customer service, Johnson and Johnson and its contribution to wellness and fighting COVID, also

COSTCO, Harley-Davidson, Honda, IKEA, the Container Corporation, Jet Blue and others. It named these Firms of Endearment. The question then arose, had these been *too* generous, had they given shareholders money away? The paradox was one of *profitability-----endearment*. Was it possible to have both or are they alternatives? Must you put one of these first and maximise?

Recall that these companies had not been selected for their *profitability* but for their *endearing* qualities, so the researchers naturally worried whether this beneficence was sustainable. Surely this was a role for non-profits? Had shareholders been robbed? So they looked at the audited records of these companies, using the Standard and Poor's average as a benchmark. Over 5 years these 28 companies were twice as profitable as the S&P averages. Over 10 years they were three times more profitable. Over 15 years they were five times more profitable. It would seem that *endearment* is a prelude to *profitability* and the two can be reconciled to the satisfaction of all concerned.

31. Could an entire nation agree to follow a moral code? (one week)

Recently we have heard a lot about political correctness, of "wokeism", of safe spaces in schools, of "snowflakes", of apologies for past racism, fascism and for imperialism. Should there be public apologies? While some of these calls are clearly excessive and responsibility for earlier mind-sets must be tempered, what all these demands have in common is that *an agreed value template for civic virtue may at last be emerging*. Many are claiming that there are values about which there cannot be any dispute, so obvious are their desirability. For example the British royal family have long kept out of controversy, leaving them room to extol little more than duty, charity and family life. But Prince William is now expressing regret for slavery and awarding million pound prizes for innovations that save the environment. Almost no one now disputes that the environment must be saved or that slavery was evil. Are there paradoxes the reconciliation of which are desirable for entire populations everywhere on earth? Let us consider some candidates.

One obvious pair are *Diversity-----Inclusion*. We are letting into our civic awareness a greater and greater diversity of persons who were earlier excluded. One of the pleasures of watching women play football is their obvious delight in the process. They are so clearly enjoying themselves. We marvel at para-Olympics, at blind skiers, at wheel-chair tennis, at people running on metal springs. Such outsiders should be given space in which to express their courage. The sexual tastes of individuals should not be stigmatized where these are consensual. There is room for everyone to love in their own ways. The same applies to deaf or dumb actors, persons unsure of their genders, people with a variety of disabilities. Diversity is of no value without inclusion and inclusion is of no value where it shuts out the diverse, but the two working together civilize. None of this means that we stop arguing but the greater the diversity of values we can include the better. We are arguing about the right proportions needed to grow us all.

Another candidate for wide-spread adoption is *Equality-----Merit*. We can only discover what merit and potential people have by treating them as equals. Equal treatment spells the greatest respect we can pay to people. Having a huge, impoverished underclass means that many get no respect and their talents die from never being discovered or exercised. That does *not* mean that we seek an equality of result, but that everyone gets a chance to show what they are good at. Let us pay experimental regions a guaranteed national income and estimate the talents that such moves throw up. The optimal mix of equality and merit remains to be discovered. We do not stop discussing this.

A third candidate is *Criticism vs. Support*, There are things wrong with us that only our best friends dare tell us. Where criticism comes from someone who does not support us we may not believe it. All those supervised are entitled to criticism from someone who supports them. We all make mistakes and we all need on occasion to be criticised, if this is seen coming from someone supporting our

careers it will be taken to heart. A male supervisor is not blame-free for never saying anything critical to a female employee. If she is not promoted she is entitled to know, before that decision was taken, why. There are other value pairs we could add to this list, an agreed moral code may be possible.

32. Why manufacturing matters and we cannot afford to give it up. (three days to prepare)

Both Britain and America grew powerful through manufacturing and have grown weaker as they gave it up. Only 10% of the UK's economy is now in manufacturing and only 11% of the US economy. China is now workshop of the world, which Britain once was. Some of the strongest economies in the world remain so because they have NOT stopped manufacturing. This includes China, Singapore. South Korea, Taiwan, Germany, Finland, Sweden and Poland. It is tempting to outsource manufacturing to low-wage countries, weaken your own trades' unions thereby, and give the savings to shareholders and customers. Yet the gains made by companies are lost by the nation as a whole, as high wage jobs are lost and workers must resort to flipping hamburgers for half the money. We get Trump. We get Brexit.

Service jobs may not only be simple and cheap like Deliveroo, but they do not gain in productivity as manufacturing jobs do. We pay ever less for computers and ever more to people who help us use them. But giving a haircut or drafting a will does not get more productive over a century, while manufacturing may double its productivity every decade and enrich us thereby. In China manufacturing has emancipated many millions from poverty and condemned millions to poverty in the West, where working-class wages have been stagnant for a generation and populism festers.

The great value of manufacturing lies in the *Person-----Machine* interface as the skill of workers fuse with the growing complexity of machines and their knowledge triggers the knowledge within the machine, so that car workers become experts on the industrial robots which make the cars. If you do not make the actual product – IBM no longer makes computers –how do you innovate? How can a better product be conceived? Most valuable services are, in any case, *to* manufacturing. Have we made a colossal error in surrendering manufacturing for short-term gains? When we subcontract we give Chinese suppliers the exact specifications of our product which they can copy!