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In this month's issue:

The Systematic Innovation e-zine is a monthly, subscription only, publication. Each month will feature articles and features aimed at advancing the state of the art in TRIZ and related problem solving methodologies.

Our guarantee to the subscriber is that the material featured in the e-zine will not be published elsewhere for a period of at least 6 months after a new issue is released.

Readers' comments and inputs are always welcome.
Send them to **darrell.mann@systematic-innovation.com**

Nature Of Order: Hierarchy & Aesthetics

Here's a short article, but hopefully one containing two or three important thoughts. We've recently been re-reading 'The Nature Of Order', Christopher Alexander's treatise on why modern architecture is predominantly awful. While undoubtedly going overboard on regular occasions and making a host of wide-reaching statements without taking too much time to back them up, there is more than enough content to provoke the reader to make a number of experiments themselves.

Which Is Better?

Let's try a crude one right here. Look at the two door pictures shown in Figure 1. The door on the left is a fairly standard door for a fire exit. The one on the right is the door to my hotel room here in Mexico. The contrast is a fairly big one, which tends to make the comparison a fairly crude one. Hopefully, though, it will serve well enough to provoke you to start looking for your own examples after we've explained what's going on.

Figure 1: Two Doors

If I now say to you, which of the two doors do you prefer, the answer is probably a fairly straightforward one. The door on the left is designed to be purely functional, while the one on the right is both functional and beautiful. In his book, Alexander took many pairs of images like these (usually with much more subtle differences) and tried to understand why one was artifact was more aesthetically pleasing than another.

The net result, apparently several years of analyses later is that we will tend to prefer images like the one on the right because the design is operating on several hierarchical levels. First there is the door; then there are the (differently shaped) panels on the door; then there is the door furniture; and then there is the (different again) grain of the wood within and around each panel. The fire door on the other hand, has been designed at only two levels of detail – there is the door, and there is the handle/sign.

The major point made by Alexander in The Nature Of Order is that this kind of 'design at several hierarchical levels of detail' is the very essence of what makes 'good design' in general and aesthetically pleasing design in particular.

Every time we've tried this same test ourselves, whether it be on something like a cell-phone or a room in a building or (to take another extreme) a bottle of water, we find the same thing; the more different levels of detail the designer has thought about, so long as he or she hasn't made a complete mess of the macro-level design, the more pleasing the artifact is to the eye.

(We're in the process of collecting other examples – we'd love to see any you can find. Especially if you think you have found counter-examples.)

Contradiction Matrix Implications?

Users of the 2003 Contradiction Matrix will know that it contains a specific 'Aesthetics' entry (pages 90-91). By including this parameter, the new Matrix allowed us to catalogue examples where a problem solver was looking to improve aesthetics without compromising other design parameters. The basis of the research that fed the book was primarily the patent database. This is just about the only place where we can find sufficient data to make statistically significant conclusions about what Principles have been used by others in which circumstances.

Alexander's uncovering of the relation between hierarchical design and aesthetics is a clear example of a Principle 7, Nested Doll design strategy. Nesting can represent a no-compromise design strategy if use is made of already present resources – like the grain of the wood in the Figure 1 door. When we look at the Matrix 2003 content for strategies for improving aesthetics, it is at least a little encouraging to see that Principle 7 appears the fourth most frequently from the data acquired. None of the data that has made up this statistic, as far as I can tell, has made specific reference to Alexander or his finding. This is hardly surprising given Alexander's remoteness from the world of patents and the design of product artifacts – few architects patent! But it does mean that others have – consciously or otherwise- used Nesting as an aesthetics improving strategy.

Having seen and tested Alexander's theory ourselves, we now seem to have a problem. Time and time again, nested/hierarchical design strategies appear to give excellent aesthetic properties, and so again, whether being used consciously or otherwise as a strategy by designers, it may just be that Principle 7 is an extremely commonly found aesthetics improving strategy. The problem if this is true is how do we make a sensible apples-versus-oranges correlation between the statistics of Nesting found in the patent database and examples found 'naturally' in the environment around us? The answer, at this time at least, is probably that we can't. What we can do, however, is to suggest that owners of the Matrix 2003 book turn to page 90 to the section marked 'Inventive Principles that should always be considered…' and add the number 7 to the 3, 4, 14 and 32 Principles already there.

This 'Principles that should always be considered…' section appeared in the book, by the way, for precisely this kind of situation. When our expert panel was testing the Matrix we often found that although the patent database showed that a particular Principle was in evidence *more frequently* than another, this did not necessarily correlate to the effectiveness of the solution. High frequency of use does not necessarily mean best in other words. We thus created the 'always consider' section because, even though certain Principles were not necessarily used often, they were consistently very effective.

Based on what we have seen (literally) now we are aware of Alexander's finding, we have no hesitation in suggesting that Principle 7 should always be considered when you have an aim to improve the aesthetics of any kind of system or artifact.

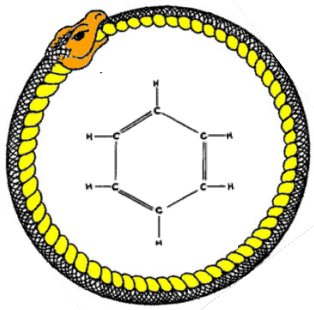
Why?
Let's end the discussion with a little speculation. Probably a total coincidence, but having read Jeff Hawkins book recently (Reference 2), it is fascinating to connect his description of the hierarchical structure of the brain with Alexander's finding. Our brain stores things – e.g. visual images – in a hierarchical fashion, such that the lower hierarchy levels store the fine detail, which then gets integrated into bigger and bigger pictures at each higher level. Think grain-panel-door and think Levels 2, 3 and 4 of the neo-cortex and we think there is definitely something worth exploring further.

References

1) Alexander, C., 'The Phenomenon of Life: The Nature of Order, Book 1', Center for Environmental Structure, 2004.
2) Hawkins, J., Blakeslee, S., 'On Intelligence', Times Books, 2004.

Circular Trends:

When The Two Ends Of A Spectrum Become One



In politics it is often said that the difference between the extreme left and the extreme right is to all intents and purposes non existent. Likewise we can think about a serious-humorous spectrum – travel further along the serious direction and eventually things become so serious the only sane and sensible response is to think it is funny. Similarly, travel in the 'humorous' direction far enough and the laughter disappears and things start to look deadly serious. What we show as the two distant ends of a spectrum in other words are effectively, like the snake-eating-its-tail image conjured up by Kekule (Reference 1), joined to form a circle.

We can observe the same effect in several of the discontinuous evolution trends found in TRIZ. In this article we examine examples of the effect as may be found in individual trends. In a follow-up article next month we extend the idea to show how we can observe the same phenomenon when we look at the trends at a meta level.

Let's begin this month's discussion with an example. Figure 1 shows the 'Horizontal/ Vertical Business Cycle trend from the business version of the Hands-On book, and first uncovered by Charles Fine (Reference 2).

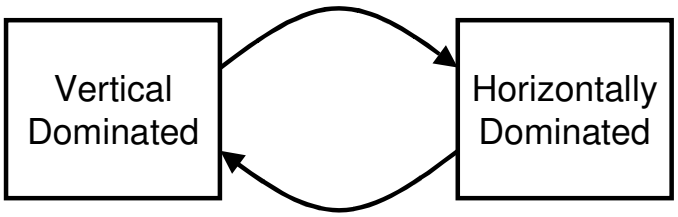


Figure 1: Horizontal/Vertical Business Cycle Trend

Here is a trend that has already been drawn as a cycle; the switch from a horizontally dominated model to a vertically dominated one is then inevitably (according to Fine's data) followed by a shift back to horizontal.

Fine's trend shows a discontinuous evolution pattern where the switches occur over quite long periods (think the shift from an IBM dominated computer hardware sector to the emergence of Microsoft and 'Intel Inside'). Other of the discontinuous evolution trends occur more quickly, and we don't necessarily see their cyclic nature. Figure 2, for example, illustrates the discontinuous business trend we labeled 'Customer Purchase Focus'. As the name suggests, this trend highlights the shifting focus of customers over the life of a product or service type. The discontinuities highlighted by the jumps from one box to another represent the focus shifts that occur when a customer has obtained a sufficient level of, say, performance, their attention shifts to reliability.

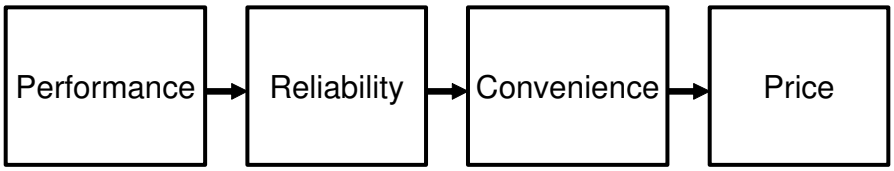


Figure 2: Customer Purchase Focus Trend Shown As An End-To-End Progression

We drew this trend as a left to right progression since that is what we observe when we examine the evolution of a product or service. But, what we should always remember when we're thinking about this trend is that once the customer is focused on price – the last stage of the trend – the aim of providers is to get the customer back to the beginning of another cycle. Typically the provider does this by introducing a new element – often a new function – to a system in order to re-focus customers on performance. Think, for example, about the evolution of cell-phones and the initial introductions of things like cameras. There was a period during this introduction when each handset manufacturer was desperately trying to outbid the other with the number of mega-pixels resolution they offered. As predicted by the trend, this phase didn't last long, and pretty soon customers were coming to expect their however many MB pixel cameras to be 'free'.

An often better way of thinking about this Customer Purchase Focus trend is as the sort of repeating cycle illustrated in Figure 3:

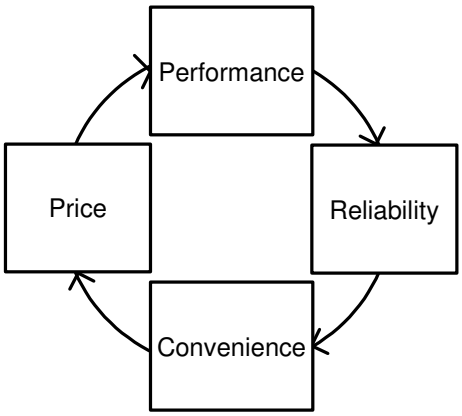


Figure 3: Customer Purchase Focus Trend Shown As A Repeating Cycle

The key idea to keep in mind when we draw the trend like this is that the jump from the last 'price' stage back to the first 'performance' stage requires a significant paradigm shift. In so many words, the first three jumps in this particular Purchase Focus cycle are discontinuities that occur during the span of one s-curve; the fourth price-to-performance jump is then the shift from one s-curve to the next – Figure 4.

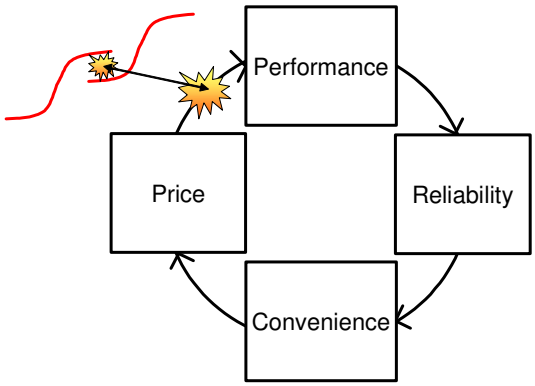


Figure 4: Customer Purchase Focus Trend And Relationship To Paradigm Shifts

We can see this same pattern in one of the other trends. Figure 5 shows the 'Competency' trend drawn again as a repeating cycle as opposed to a left-to-right progression.

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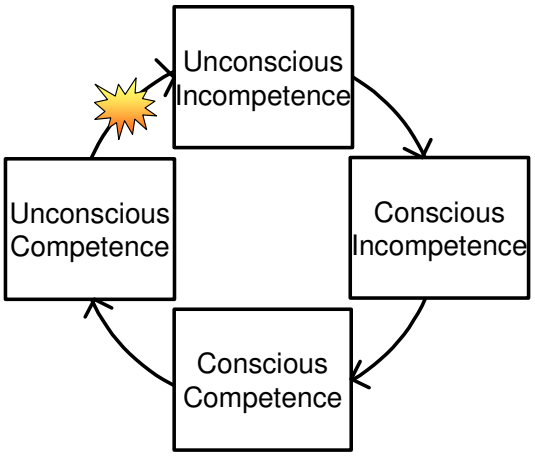


Figure 5: 'Competency' Trend Drawn As A Repeating Cycle

Drawing this trend as a repeating cycle is perhaps even more revealing than the Purchase Focus one. Again we see four stages of evolution, and again we can join the last stage back to the first when we take into account a shift in paradigm. This 'competency cycle' is largely responsible for the reason that companies go out of business. By the time the organization is operating in 'unconscious competence' mode they are likely to be suffering from the psychological inertia that prevents them from seeing that the world outside has changed. Think here about the vacuum cleaner industry and the shock to their system brought about by James Dyson and his cyclone cleaner. Traditional manufacturers were good at designing vacuum cleaners with bags, and apparently were so stuck in their 'bag mindset' that they failed to even recognize that customers might think loss of suction was a problem. Your supreme competence in the current way of doing things, in other words, can very easily blind you to the new competence requirement that is emerging outside your world and your way of thinking.

References

1) Findlay, A., 'A Hundred Years Of Chemistry', describing Kekule's discovery of the structure of benzene.
2) Fine, C., 'Clockspeed', Little, Brown, London, 2000.

Humour – Thin & Flexible

We're in the middle of reviving our efforts to try and get Gary Larson's publishers to do a '40 Principles with Cartoons' book. The amazing Mr Larson is unique amongst cartoonists in that he manages to make jokes out of almost all of the 40 Principles.

Quite some feat when you consider that most cartoonists make a whole career out of repeating the same (usually Principle 35 or 13) joke over and over again. Doubly so when you thing about how obscure some of the 40 Principles actually are. Take Principle 30, 'Thin & Flexible' for example, how do you make a joke out of that? Here's how:

So far we're missing just one Principle illustration (Principle 37, Thermal Expansion – we can find a 'Relative Change' version example, but that kind of feels like cheating). In a way we're kind of hoping that we can't find one, in order to entice Mr Larson out of retirement to draw just one more cartoon. On the other hand, if anyone thinks they can find a Larson Principle 37 cartoon to complete our set, we'll donate you our examples of the other 39.

Patent of the Month - Injectible Bodily Prosthetic

Good patents are sometimes like buses. You wait ages for one, and then a whole bunch arrive together. February presented us with a number of candidates for our 'best' award. From pattern-matching software (US7,184,595) to blue electro-luminescents (7,183,003) toa very nice Principle 4 example in semi-conductors (7,184,843) there's almost something for everyone. Our winner in the end comes from the world of bio-chemistry; US7,183,369 'Injectible bodily prosthetics employing methacrylic copolymer gels' was granted to inventors at Iowa State University on 27 February.

According to the inventors:

The intervertebral disc is a complex joint anatomically and functionally. It is composed of three component structures: the nucleus pulposus, the annulus fibrosus and two vertebral end-plates. The nucleus pulposus is a generally loose or amorphous hydrogel which serves to support the load applied to the disc, and is mainly responsible for the compressive properties of the disc. The annulus fibrosus forms the outer limiting boundary of the disc, and serves to maintain the nucleus pulposus in compression while inhibiting over-rotation of the disc. The vertebral end-plates are composed of hyaline cartilage, and separates the disc from the adjacent vertebral bodies. This layer acts as a transitional zone between the hard, bony vertebral bodies and the soft disc.

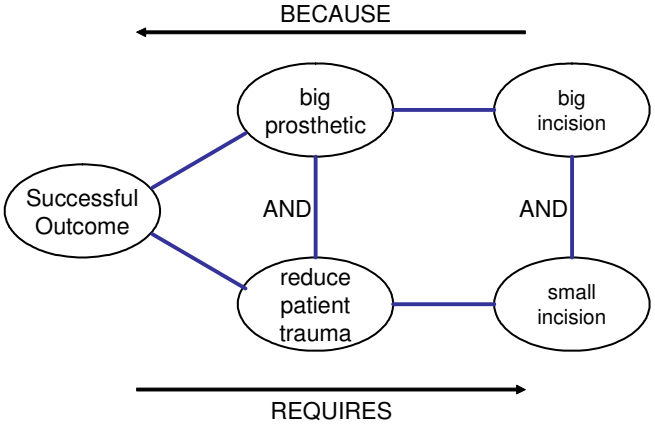
Damage or displacement to the intervertebral disc may be caused by trauma, disease, or an inherent disorder. In these cases, the nucleus pulposus may herniate and/or protrude into the vertebral canal or intervertebral foramen, resulting in back pain and/or loss of mechanical spinal function.

Current treatment options include conservative bed rest, a laminectomy (removal of the disc), as well as highly invasive surgical procedures, such as spinal fusion. Although these treatments offer pain relief, they do not restore the mechanical function of the spine. Other options involve replacing the damaged or degenerated disc with a synthetic disc implant, such as Charite. Unfortunately, such disc replacements often lead to stress shielding and other deleterious effects, as well as highly invasive surgery.

Nucleus pulposus replacement is one possible treatment for disc injuries and other degenerative disc disorders. Nucleus pulposus replacement typically involves the replacement of the damaged pulposus with a prosthetic nucleus pulposus. For example, U.S. Pat. No. 5,047,055 to Bao et al., which is incorporated herein by reference, describes the use of a hydrogel prosthetic nucleus as a treatment for disc injuries and other degenerative disc disorders. The hydrogel is prepared by cast molding or lathecutting, and then implanted in conjunction with a laminectomy operation, such as discectomy or microdiscectomy, percutaneous discectomy, or chemonucleolysis. All of which require an invasive surgery.

What is needed is a new hydrogel replacement system that is less invasive.

This is a really nice contradiction problem. It also gives us a very nice excuse to make use of our modified Evaporating Cloud template again. Using that template, the problem solved by the inventors looks something like this:



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As described by the inventors, the primary motivation for looking at the problem is to reduce the invasiveness of spinal disc surgery. We can express this intent as a physical contradiction between the desire to make a small incision and the need to make a big one. We can see this contradiction on the right-hand side of the figure.

The inventors have successfully solved the contradiction by focusing on the top part of the template; breaking the link between the need for a large incision because the size of the prosthetic to be inserted is large. Here's how we might translate that pair onto the Matrix:

IMPROVING PARAMETERS YOU HAVE SELECTED:

Length/Angle of Moving Object (3)

WORSENING PARAMETERS YOU HAVE SELECTED:

Area of Moving Object (5)

SUGGESTED INVENTIVE PRINCIPLES:

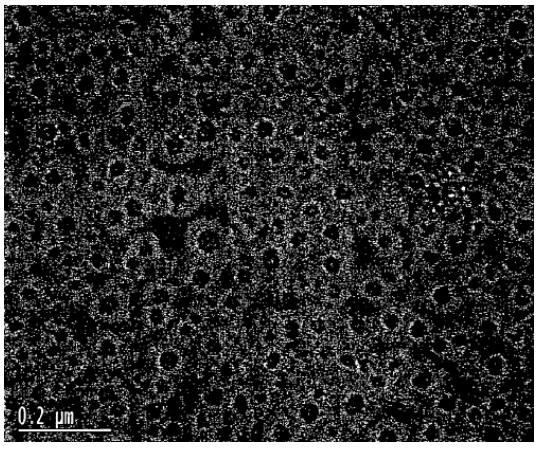
15, 17, 4, 14, 1, 3, 29, 30, 35

Well, the title of the patent has probably given the game away, but needless to say, the solution to the contradiction represents a very clear example of Inventive Principle 29, Fluid. Here are the inventors again:

The treatment of degenerative disc disorders and spinal injuries is accomplished by injecting an aqueous solution including the copolymers into the appropriate locations between the vertebrae. Upon raising the temperature of the solution to body temperatures (i.e., 37.degree. C.), and upon placing the solution at neutral pH, copolymers with concentrations of greater than 17% by weight tertiary amine methacrylate will form a gel having structural characteristics capable of providing a cushioning effect between the vertebrae. Preferably, the copolymer injection will have a concentration of greater than 25%, and more preferably greater than 30%, and most preferably greater than 35% by weight tertiary amine methacrylate. For long term applications, the gels may be further stabilized by injecting a basic solution along with the aqueous copolymer solution to cause the copolymers to further assemble into a gel having stronger structural characteristics. In addition, or in the alternative, a suitable cross-linking agent, such as a diacid, may be injected with the aqueous copolymer solution to form cross-linked gels, also having stronger structural characteristics.

Interesting, finally, to note here is how body temperature is used as a resource to trigger the change in structure of the 'aqueous solution' to the desired cushioning gel:

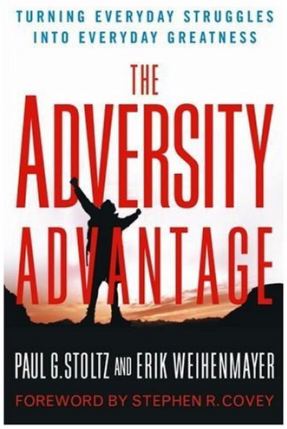
One advantage of the present invention is that the provided copolymers form thermoreversible gels that, when at room temperature or lower, may be injected into the desired location while being in an aqueous solution. Upon being exposed to the body's temperature (i.e., 37.degree. C.), the copolymers will instantly form a gel providing the desired structural support.



SYSTEM ATIC INNOVAT ION

Best of the Month – The Adversity Advantage

A fairly disappointing month this month on the book front. Several books re-hashing what others have already said (take a bow Philip Ball in the 'award winning' Critical Mass) and several others managing to cram two sentences worth of value into 300 pages (take a bow Gregg Easterbrook for 'The Progress Paradox' – good title though!). We finally opted for The Adversity Advantage by Stoltz and Weihenmayer.

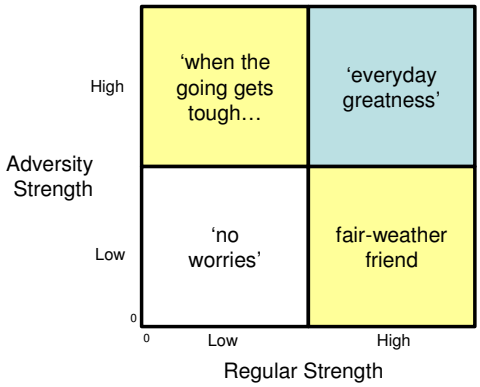


In simplest terms, the book is about the living of Inventive Principle 22, 'Blessing In Disguise'. Erik Weihenmayer may be known to US subscribers as the only blind person to have climbed Everest, and the tallest peak on every other continent.

Adversity, the authors claim, is one of the most potent forces in life. It shapes your character, clarifies your priorities, and defines your path. It can also 'fuel your greatness'. Each of us faces a rich assortment of adversities every day, ranging from minor hassles to major setbacks and challenges, even tragedies. But merely coping with or overcoming adversity barely keeps you in the game. The key to success, the authors contend, both in business and in life, is learning how to become an alchemist and convert any adversity, major or minor, into a genuine advantage.

According to the publisher, 'The Adversity Advantage offers proven principles and practical tools that teach you how to use adversity as a force for superior achievement, resilience, agility, innovation, energy, and happiness'. That wasn't quite what we found, although there are some quite nice stories and the overall structure of the book makes for a pleasant read.

The main thing we learned from the book came from reading between the lines. We're starting to become big fans of two-by-two matrices these days (obviously a sign of doing too much work on non-technical problems!), and the book provoked us to draw this one:



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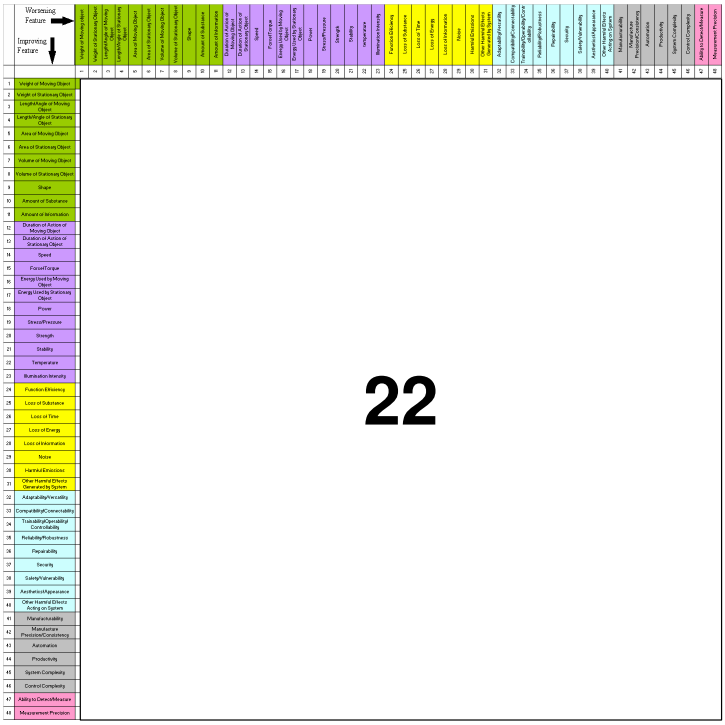
What's going on here, as suggested by the authors, is that we all possess both a regular strength of character and what they call an 'adversity strength'. The first dictates how well you will perform under 'normal' situations; the latter how well you perform when under high levels of stress and, as per title, adversity. The 'everyday greatness' theme (over-)used by the authors occurs when we learn strategies for overcoming the contradiction. Although really difficult to generalize on a national level, once we drew this box it seemed logical to place the British character into the top left 'when the going gets tough..' box. The current UK malaise exists because at the moment there is little adversity for a majority of the population. Other nations – probably best let you make your own decisions here – seem to fit into the other yellow box. Comparatively few (individuals or nations) appear to have solved the contradiction and made it to the blue box. This, of course, is where the authors are trying to help us to travel. In Contradiction Matrix terms, this is how they recommend we do it:



Simple when you know how.

Conference Report – Intelligent Housing Seminar, Birmingham

The UK Government's Department of Trade and Industry (DTI) has in recent months been sending out teams of people to other parts of the world to study best practices in various strategically important industry sectors. This 'intelligent housing' seminar was the report-back from one of these mission visits. In this case, the DTI team sent 12 people out to study what the US is doing in this increasingly important area. The theme – and the reason we can say it is increasingly important – involves the growing contradiction in the US, UK and indeed many parts of the world between a rapidly ageing population demanding more and more medical attention and increasingly sophisticated (and therefore expensive) medical care services. Already the 4.5% oldest members of society consume 40% of national health service expenditure in the UK. Add to that the impending surge of several million baby boomers reaching pensionable age and all the indications point to a system entering an unsustainable crisis. Intelligent housing is thus seen as a ('the'?) key mechanism for tackling the problem.

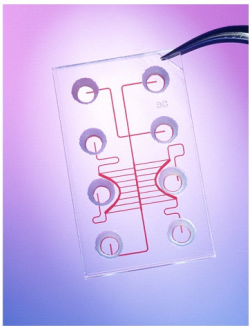
The main focus of the seminar, then, was very much about 'intelligent housing' in the sense of systems capable of assisting in the medical care of the elderly. Tele-medicine in so many words. Think virtual doctors, think home diagnostics, think sheltered-housing type monitoring systems (webcams to make sure grandma is okay), think early low cost diagnosis and 'prevention is better than cure'. While touching on important issues like privacy and data security and designing homes compatible with the needs of the elderly, the very large emphasis of the seminar was about benchmarking tele-medicine technology and who was going to pay to turn the early steps into a mature, deployed capability. In short, the answer to those two questions according to the mission leaders was 'not so good' and 'someone else' respectively. All in all not so encouraging. Perhaps the most disappointing aspect was that no-one present seemed to have any idea how to move the subject forward. Strong consensus that it was a vital area; complete paralysis in terms of working out how to get to where we need to be from where we are today.

All of the examples cited by the mission members looked like small-scale experiments. Usually designed and run by universities. Invariably involving a 'yes, but…' trade-off and compromise mentality.

We mention the subject here for exactly the same reason we attended the session; there appears to be an enormous untapped innovation opportunity with lots and lots of unsolved conflicts and contradictions. Perhaps not the most exciting subject area, but very definitely one that looks set to be both socially important and commercially lucrative.

Investments – Self-Waxing Skis

Recently reported in New Scientist is a revolutionary new way of improving the speed of skis. Having just returned from Austria and seen how little snow they've had this winter, perhaps the effects of global climate change suggest that skiing is not such a smart place to invest money these days. Nevertheless, the new 'self-waxing ski' has been developed by Prof Peter Styring at Sheffield University and Dr Alex Routh of the Department of Chemical Engineering, Cambridge University.



Skis are waxed prior to use and this is especially important before races. The wax lowers the friction with the snow and hence makes the skier faster. Problems arise because the wax will wear off, so that ski performance will be worse at the end of the race. In Chemical Engineering terms the wax is applied in a batch fashion and as we all know a continuous operation is far superior.

For the past 3 years Alex Routh has been working with Peter Styring at Sheffield University to optimise continuous lubrication of skis. The design limitations are keeping within regulations of the *Federation International du Ski (FIS)*. This mandates that no external energy can be used, ruling out batteries or compressed air as pumping mechanisms. In addition a reservoir is required for the liquid wax. This feeds into a small tube about 250 microns across that runs along the top of the ski and down through the front. The most elegant part of the inventive solution is that the flexure of the ski is used as the primary pumping force for the wax. So, as the skier goes over bumps, the ski bends and thus replenishes any lost wax. The design solution makes use of the extensive micro-fluidics experience at the two Universities.

The initial tests were carried out on a dry ski slope and in these conditions almost any liquid has a dramatic effect. The need to have a very slow release calls for some specific wax rheology. The lubricant is located under the skiers boot, replacing a part called the rise plate. Improvements in speed of up to 40% have been observed on dry slopes.

On snow the formulation needs to change. Using an indoor ski slope, a biodegradable, inert lubricant has been developed with slightly different mixtures needed for varying temperatures. Numerous trials in the Austrian Alps have also been carried out, and the system here has demonstrated a reproducible improvement in skier speed of 2%. In the competitive world of downhill racing this effect is massive – the difference between 20th and gold medal place in crude terms.

The University of Sheffield has created a spin-out company *Wildfire Snowsports* to commercialise the technology which will hopefully be incorporated into commercial skis before the start of next season. Check out www.polymercentre.org.uk for more details.

Biology – Yamakagashi Snake (*Rhabdophis tigrinus*)

One of the primary driving forces in nature is efficient use of available resources. Creating toxins to kill prey is one such area where the resource equation presents a difficult optimization task: once created, a toxin is an important weapon in the armoury of any creature. Actually creating the toxin in the first place – and storing it – can represent a considerable resource burden. The Yamakagashi snake (*Rhabdophis tigrinus*) has found a cunning means of avoiding the bulk of this trade-off. It steals the heart muscle paralysing bufadienolide toxins from the toads it eats. After eating the toad and siphoning the toxins from the toad's skin, the snake stores the stolen toxin in glands on the back of its neck. When it is under attack, the snake arches its neck, and moves the poison glands toward the predator, in a move called "neck-butting."

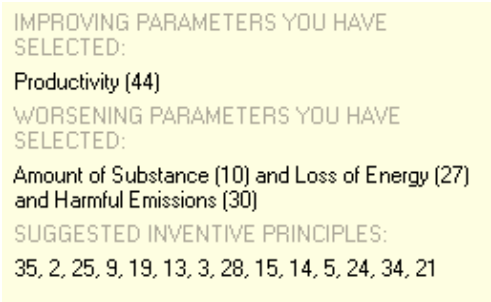
Researchers have long known that Yamakagashi snakes like to eat toads; on a tongue flick test, which is how scientists gauge a snake's food preference, these snakes seem to favour toads over other foods. (They flick their tongue more for toads than fish, for example.) But this study suggests that toad appeal is not just a matter of taste.

Researchers first wondered if the snakes stole the toxin when they observed behavioural differences in snakes that lived with toads, compared to those that didn't. The snakes living in toad-free places, such as the island of Kinkazan off of Japan, were less aggressive than toad-eating snakes—fleeing fights more often, and less frequently displaying the defensive arched-neck.

"The behavioural differences helped form the sequestration hypothesis," says Deborah Hutchinson, a researcher at Old Dominion University in Norfolk, VA and lead author on a recent paper in the Proceedings of the National Academy of Sciences. In the study, Hutchinson and co-authors confirmed that the snakes that didn't eat toads had no toxins in their glands, explaining their propensity to flee; while the toad-eating snakes had levels of toxin that varied with the amount of toad in their diet.

So how does the toxin get from the toad's skin to the glands on the snake's neck? The researchers know that the glands are infused with a dense cluster of capillaries, suggesting that the toxin is transported through the blood. But, Hutchinson says, "It's not known whether the toxins are absorbed directly across the lining of the mouth or whether that transport takes place in the gut." Hutchinson adds: "we're not sure what it is about the glands that grabs onto the toxins and concentrates them."

From a contradiction perspective, what the Yamakagashi snake is doing by sequestering toxin from a third party is increasing its productivity. Without the sequestration strategy, the snake would face the traditional productivity versus use of resources – loss of energy in creating the toxin, amount of toxin, fact that it needs to safely store the toxin. The problem can be mapped onto the Contradiction Matrix as follows:



Principle 24, Intermediary, gives a direct nod in the direction of the strategy employed by the snake. Also interesting to note is the presence of Principle 9, Prior Counter-Action, which perhaps gives an even better match to what is happening.

Always nice, then, to take the story a step further. And what the study reveals next is that not only that these snakes steal, but also that they pass the poison to their snakelings. The mother snake, called a dam, includes a concentrated dose of toxin in the yolk, which provides nutrients to her un-hatched snakes. Preliminary evidence also suggests that dams can pass the toxins late in the pregnancy, right through the leathery shell of their soon-to-be snakeling's egg.

Short Thort

"I love change….

…I hate being changed"

workshop delegate

News

HOSI(B) New Edition

So still no Software Book, but that doesn't mean we haven't been busy. We are pleased to announce that a new edition of the business and management version of the Hands-On Systematic Innovation book has just been published. The new edition features several new trends, modifications to the Ideal Final Result situation definition and Resources chapters, a new one-sheet version of the Contradiction Matrix and – best of all – a new foreword, kindly written for us by a senior Procter & Gamble executive. Craig Wynett is not only one of the sharpest thinkers in the world – no-one asks great questions like he does – but he is among the top ten funniest. Okay, top five. We feel both honoured and extremely privileged.

TRIZCON07

Well, it took some time before we got the dates confirmed (I thought major conferences announced dates about a year before the event was scheduled to happen?), but it looks like the conference will go ahead. Alas, because of the late announcement, we had already made other plans for some of the days. So, if you are planning to attend and want to catch up with Darrell, it will have to be his Management workshop on the Sunday, or during the pre-conference activities on Monday.

Hong Kong

Darrell will be back in Hong Kong giving a one-day public seminar on 3 May. The theme will be TRIZ/Systematic Innovation and its impact on business strategy design. More details available on the website.

Perception Mapping

April will see the launch of our new Perception Mapping software tool. A staple of our business and management workshops for several years now, Perception Mapping has become one of the most popular (and, we think, effective) processes for bringing clarity to fuzzy and incomplete problem situations. The software implementation is designed for

frequent users of the process. One of the main features of the software is its ability to automatically map and prioritize the perceptions in a given problem situation. More details can be found on the Products page of the website.