Systematic Innovation

e-zine

Issue 154, January 2015

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Our guarantee to the subscriber is that the material featured in the e-zine will not be published elsewhere for a period of at least 6 months after a new issue is released.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

Cool

They say the best way to ruin a joke is to try and analyse why it was funny. There's probably a similar rule applies when thinking about cool. Indeed a fairly sizeable part of what defines cool is its apparent undefinability. Any attempt to decode that undefinability is perhaps merely a way of destroying whatever it was that evoked the 'cool' reaction?

So, at the risk of doing exactly that, some years ago we began to think about cool. Or rather creating a systematic ability to spot the next cool. It's been a long old journey it has to be said, but given the importance of even a crude ability to predict future cool would satisfy a deep-seated need expressed by a lot of our clients that have to worry about such things in order to stay ahead of their market.

Very quickly into the journey we observed the existence of a large number of organisations who devote their existence to spotting future trends. The best of them – trendhunters.com for example – offer the occasional flash of cool-spotting genius merely because they've enlisted a semi-formalised army of trend-spotters around the world and thus get to deploy a 'throw enough shit against the wall and some of it is bound to stick' strategy. Their problem, like all of their competitors is that the cool signal to noise ratio is vanishingly small when it comes to their ability to spot a weak signal that eventually turns into the next-big-thing in the world of cool. Following Trendhunter's Twitter feed, for example, will give you an average of around 10 tweets an hour. Things like this:

Figure 1: 'Wow, Mermaid Swimming Tails. This Season's Cool Must Have!'

Now, I might be wrong, but I have a suspicion that the manufacturers of mermaid tail swimsuits might have a pretty good summer selling a few hundred of these drowning-aids, but I'm not sure I can see a long term future. The problem, then, is this. The mere existence of someone posting a photo of a mermaid tail swimsuit and declaring it to be 'cool' does not mean that it actually is cool. At best, we might declare this kind of weak signal as some kind of 'Pre-Cool' spark. Maybe it ends up hitting the right cohort of tail-less swimmers at a key moment in their lives so that it ends up that 'everyone' really does go out and buy one and thus turn it into 'Mainstream' cool, but probably more likely that is not going to happen. The reason we can be fairly sure of this prediction is that, like any other new thing, the rules of the evolutionary S-curve apply. Not everything that follows

such a curve is necessarily cool, but a ‘Pre-Cool’ spark that grows to become mainstream will inherently have to follow the rules of the curve. Which, we think, means going through a number of stages as described in Figure 2:

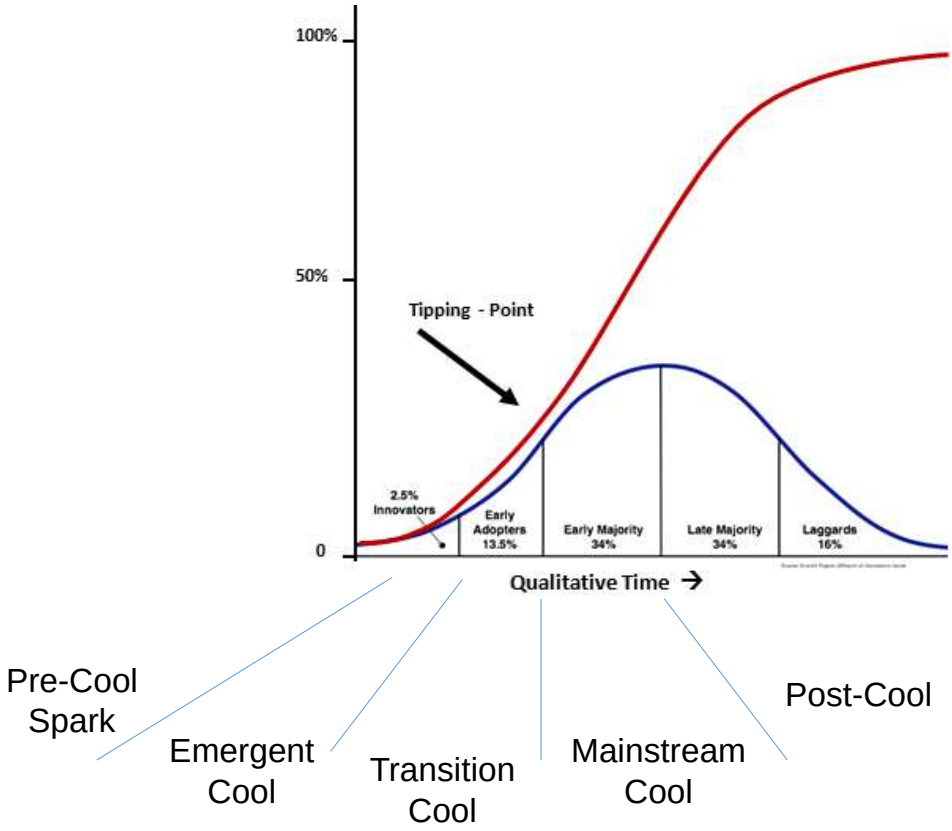


Figure 2: Five Key Stages Of ‘Cool’

Spotting the first ‘Pre-Cool’ stage of the Cool evolution stages is easy: Which is why organisations like TrendHunters find it easy to recruit tens of thousands of part-time trendspotters. Look ma, no training required: look out for things you’ve never seen before, listen for reactions like, ‘wow’, ‘cool!’, ‘amazing’, ‘unbelievable’ and a thousand other words that come with an exclamation mark or three after them, and you’ve just spotted ‘Pre-Cool’.

Beyond that, unfortunately for TrendHunters at al, and the job of distinguishing genuine signal from noise becomes much more difficult. The corollary to that, of course, is that just because it’s difficult doesn’t mean it’s impossible. Merely harder work than anyone at TrendHunters or elsewhere has been willing or able to plough their way through. Enter PanSensics to take up the reins…

Stage 2: Emergent Cool

‘Cool’, in its early stages at least, is an inherently emotional reaction we have. It is all about the intangibles. And more specifically, those intangibles that sit right at the heart of our self-esteem. Which in turn, per our discussion in the ‘Universal Intangibles’ article (Reference 1) distils down to four basic attributes: Autonomy, Belonging, Competence and Meaning (ABC-M). As far as we can see from our PanSensic scrapes of Pre-Cool Sparks that have any chance of progressing to the next ‘Emergent Cool’ stage, there needs to be a clear net gain in an ABC-M score of whatever the new ‘cool’ candidate is relative to whatever was there before that did the same basic job as that performed by the new thing.

Spotting ‘Emergent Cool’, therefore, is all about being able to measure this change. Something like the Frustration Map example we showed in the articles on Uber recently:

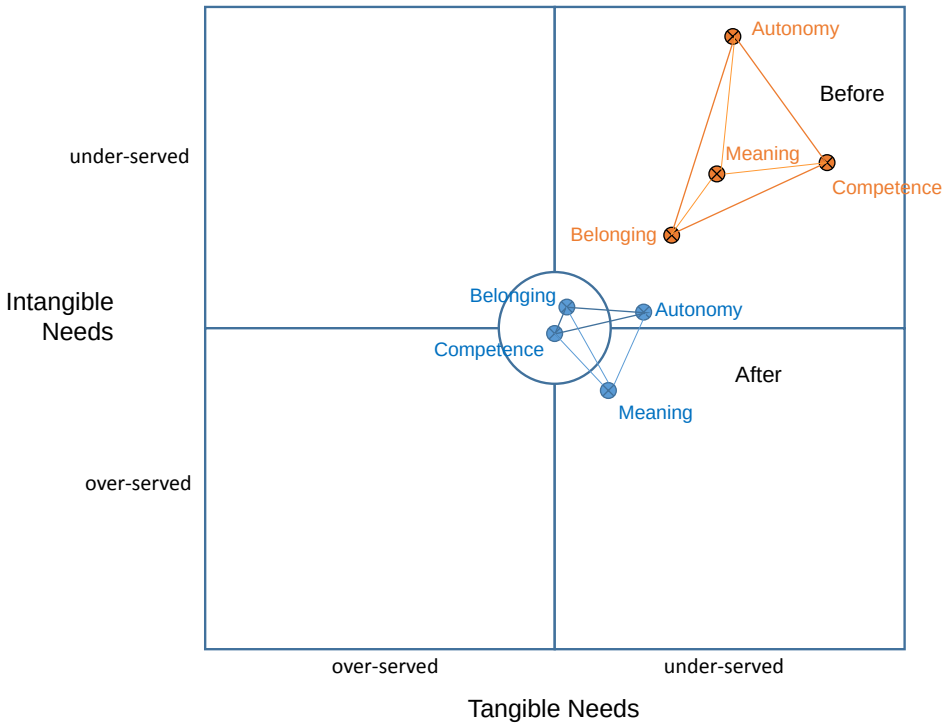


Figure 3: Measuring Δ(ABC-M)Before-After On A Frustration Map

This picture allows us for the first time to explain why the centre of our Frustration Maps contain the circle. Regarding the under/over-served axes definition, the circle represents the zone where there is in effect no customer frustration. In terms of the way we use the Maps, one of the characteristics of ‘cool’ we can observe is the absence or removal of frustration. We construct Frustration Maps because we know customer frustration is the primary driver of innovation. We put a circle at the centre of the Frustration Map because we now also know that the absence of frustration is an equivalent primary driver of Cool. Or at least ‘Emergent Cool’…

Stage 3: Transition Cool

One of the biggest fears of the aspirant ‘cool’ person is that they’re shown up to be an ‘Emperor with no clothes’. Not so big a deal for the innovators, because in no small part their cool aura comes from the mere fact that they’re so far ‘ahead’ of the mainstream and, frankly, don’t give a damn what anyone else thinks, but a much bigger deal for the less confident ‘early adopters’. For an early adopter to fall into the Betamax trap is a big concern for them. The transition from Emergent to ‘Transition’ Cool, then, is all about making sure two conditions are satisfied:

1) The ‘Cool’ new thing delivers a net tangible as well as intangible benefit
2) The ‘innovators’ – i.e. the people that spotted the new solution – are genuine innovators rather than mere random chancers

Spotting Transition Cool means the PanSensic measurement instruments have to be able to measure both of these things. The first one is easy because we’re clearly back into the world of the measurable tangibles. The second is somewhat more difficult. Getting this measurement right means de-coding the characteristics of a person who other people listen to. We need to be able to find the things that define the ‘influencers’ in society. Fortunately, we already have a pretty good insight into what defines these types of people from some of our other PanSensic tools. The ‘Cool Influencers’ are characterized by:

a) High ‘Mind Opener’ and ‘Route-Finder’ scores in the Mercuryφ tool (Reference 2)
b) High ‘Transformation’ scores in the Jupiterμ tool (Reference 3)
c) High ‘Monarch’ and ‘Magician’ scores in the Archetypes tool (Reference 4)
d) High ‘Holarchy’ and ‘Scientific’ scores and low ‘Feudal’ score in the Thinking Styles tool (Reference 5)

Stage 4: Mainstream Cool

So much for getting past the ‘Emperor’s New Clothes Test’, before Cool can go mainstream it has to convince the ‘early majority’ of a population to get the candidate past its Tipping Point. At this stage, things have progressed well beyond the realms of influence of any individual; large numbers of people will only follow a trend if they can see lots of other people beginning to do the same thing. Whether a ‘cool’ solution provider has the means to get their solution past the Tipping Point is dependent on their ability to do tangible things like ensure the means of production can be scaled, that their routes to market are established and that all those other tangible things that sit within their span of control are appropriately taken care of. When we’re talking about scaling ‘cool’, however, there are a whole series of things that sit outside their control. The biggest family of such things we have taken to calling the Dynamic Context factors. Spend any time at all looking at patterns and trends in a society and one of the things you’ll very quickly begin to spot if you zoom-out your perspective to look at timescales of greater than 5 years is that there are a number of pendulum swings we can see occurring. Sometimes, for example, we see a trend towards nostalgia. Other times we will see a swing towards being very forward looking. Mainstream Cool comes when a candidate ‘cool’ solution is able to capitalize on these pendulum swings. If the societal tide, for example, is moving towards increasing desire for nostalgia, any solution that may be seen to be consistent with that tidal direction has a far better chance of going mainstream than something that attempts to fight the tide. Where things start to get interesting is when society hits the end of one of these pendulum swings. At these points, the Early Adopters will already be busy nudging the pendulum to begin travelling in the other direction, and it likely won’t be long before the Early Majority follow suit – Figure 4:

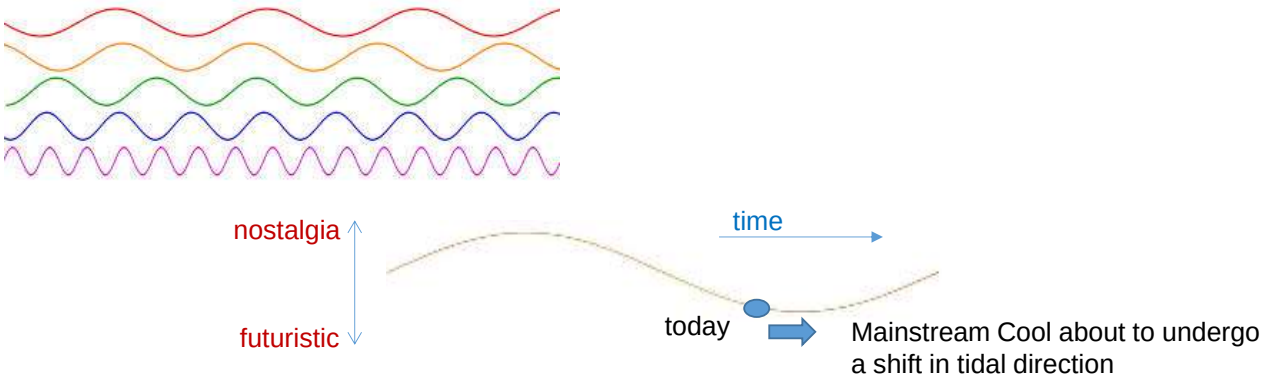


Figure 4: Example Societal Trend Oscillation

There are a number of these kinds of nostalgia/futuristic oscillations we can observe in society, all likely to be at different phases and have different oscillation frequencies. The job the PanSensic measurement instruments have to do with each of them is work out how in tune a Transition Cool solution is with a critical mass of them. The key to a successful prediction from Transition to Mainstream is all about establishing and tracking whatever this critical mass turns out to be. In answering this question, we eventually found ourselves veering in to the world of art for an answer. The reason that art turns out to be a good Mainstream signifier is that the artists in a society tend to be the ones that always

find themselves at the vanguard of spotting shortfalls and frailties in society and making them visible to the rest of us. Reference 6, has been the best text we've found to help us to build our critical mass of core-level societal oscillations. Philosopher and co-author of the book, Alain de Botton provides us with seven Dynamic Context factors to look for…

1) Remembering (nostalgia/futuristic)
2) Hope (optimism/pessimism)
3) Sorrow (happy/sad, 'arousal')
4) Re-Balancing (calm/energetic, 'valence')
5) Self-Understanding (philosophical/hedonistic)
6) Growth (pioneering/consolidating)
7) Appreciation (ugly/beautiful)

…so those are the attributes we've built into our Dynamic Context Factor PanSensic tool. Now we have that tool, 'all' we need to do when we look at a candidate 'cool' solution is listen for the language people are using to describe it and compare this language with the sorts of language consistent with the current position of each of these seven oscillation attributes.

Stage 5: Post Cool

In theory, finally, then, we might continue to imagine, the Late Majority and Laggards in society can also aspire to a degree of 'cool'. Unfortunately, by the time they arrive on the scene, they set in motion an almost inherent downward spiral that serves to kill any last modicum of that cool effect: the more these 'uncool' people want the 'cool' thing, the less cool it becomes to the early adopters who we're trying to get away from the uncool crowds. The provider of the cool solution also inadvertently helps destroy their cool because, having grown a market from the position as an underdog/pirate, they've now grown and have a lot to lose, and so the livelihood of an increasing number of employees becomes dependent on maintaining whatever it is that they perceive makes the thing cool. See Apple and iPhone for a perfect example of this downward spiral in full flow. From the PanSensic perspective, if there is a job to be done, it's to inform the incumbent providers when the transition from Mainstream to 'Post' is about to happen. So they can at least make an informed choice about whether to accept the imminent decline in 'cool' or whether to re-set their sights on the next set of Pre-Cool and Emergent Cool signals, and thus start a new turn of the world's merry-go-round. And maybe, with a following wind next time around, another chance for the mermaid tail industry to try again.

(The PanSensic 'Cool Finder' measurement instruments have been tested and validated for a couple of years now with our (brave!) lead clients so we're in the process of making them available to a wider span of organisations at this point in time. If any of our readers are interested in commissioning a small piece of work to see what the instruments can do for them and their enterprise, we'd love to hear from you.)

References

1) Systematic Innovation ezine, 'Universal Intangibles', Issue 140, November 2013.
2) Systematic Innovation ezine, 'Hearing What Is Really Being Said: Part 2 – Mercuryφ', Issue 139, October 2013.
3) Mann, D.L.,. Howarth, P., 'Jupiterμ: Closing The Say/Do Gap', SI White Paper series, www.systematic-innovation.com.
4) Systematic Innovation ezine, 'PanSensics: Life-Stage Archetypes Tool', Issue 145, April 2014.
5) 'Hearing What Is Really Being Said: Part 1 – Thinking Styles,' SI White Paper series, www.systematic-innovation.com.
6) Botton, A. de, Armstrong, J., 'Art As Therapy', Phaidon Press, 2013.

Feeling Better About Getting Worse

No matter where we are or what we're doing, we all like to think that we're heading in the right direction and are, 'making progress'. This desire leads to a pretty fundamental problem when we happen to be a member of a team tasked with innovating, because, in trying to achieve something that hasn't been done before, there will be inevitable periods when we find ourselves heading in a direction that proves to be unfruitful. The 'fundamental' problem is that step-change involves some kind of a Hero's Journey – Figure 1 – and core to such a Journey is the knowledge that we're going to have to leave our current way of doing things, and go and find another:

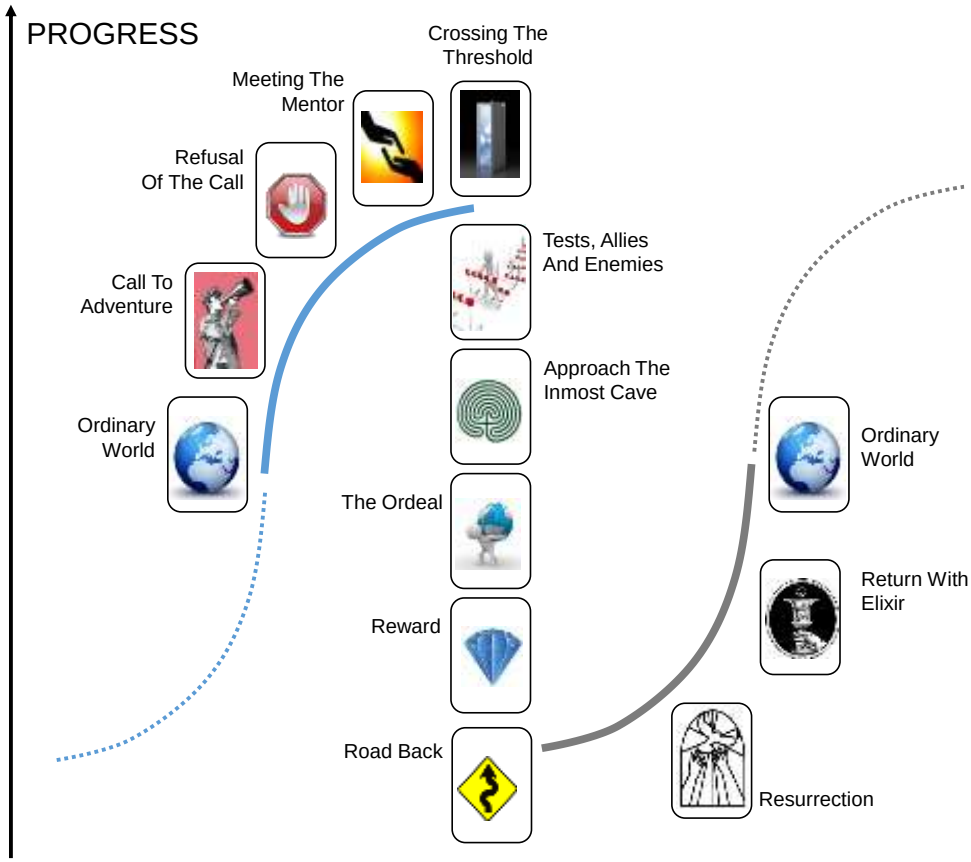


Figure 1: Innovation As A 'Hero's Journey' S-Curve Jump

The 'Tests, Allies and Enemies', 'Innermost Cave' and 'Ordeal' stages of the Journey, are intended to be symbolic of the inevitable challenges that will appear to confront a project team. Whenever any of these things are happening, even the bravest team member can begin to have doubts that they're still heading in the right direction. Failure to overcome a milestone challenge or – worse – subsequently realizing that it wasn't even the right challenge typically feels about as far away from 'progress' as it's possible to be. No wonder so many project teams find themselves demoralized and looking around for someone to blame.

Maybe the problem here is merely the way that we allow ourselves to define 'progress'?

Maybe, if the Tests, Caves and Ordeals are indeed fundamental, when we encounter them rather than beating ourselves up, we should consider that we have indeed just made the progress we crave? Maybe, we need to re-draw Figure 1 to look something more like this:

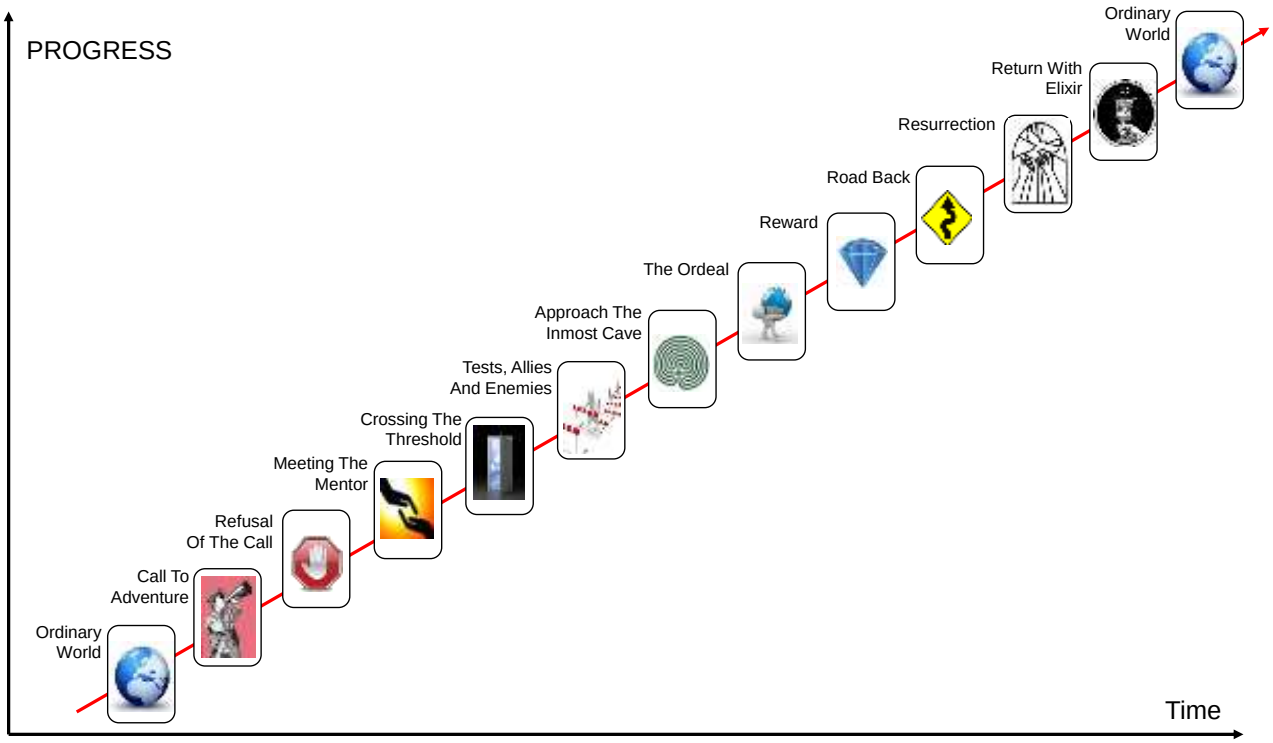


Figure 2: Re-Thinking The Hero's Journey In Terms Of 'Progress'

Probably not the typical sort of thing to include in a project Gantt chart, but 'Approach The Innermost Cave' might just be a more valid way of thinking about mapping the progress made in a project than what normally happens. In this sense, drawing Gantt charts is very likely a 'common sense' solution that has no place at all in innovation projects. Especially when a team is in the 'exploration' phase of the work. A period that in some industries might equate to something like 75% of the overall duration of a project. It would be a brave project manager indeed that declared to their sponsors that they weren't going to build and maintain a clear map of 'progress'ing activity bars and milestones.

Or at least it would be if it weren't for the fact that those industries – like aerospace – that do spend 75% of the project duration in exploration mode have found a far more effective way of managing the things that need to happen in their project.

The solution you'll find in these scenarios represents an intriguing illustration of Inventive Principle 13, The Other Way Around. It's also a good way of making the 'Tests, Allies and Enemies' phase of the Hero's Journey into something much more tangible for members of the team.

The primary job of any team at the beginning of a project is to identify all the things they *don't* know. Included in this list, there ought to be a number of potentially quite uncomfortable questions:

- Do we *really* know what the customers want?
- Is the specification we've been given appropriate?
- Are there any solutions from other domains that we don't know about?
- Are we missing any important skills from the team?

- Do we need everyone on the team all the time?
- Does everyone in the value chain win?
- Is the delivery timescale a meaningful one?

According to our research, the world is maintaining its dismal 98% failure rate when undertaking innovation projects. I'd be willing to make a fairly safe bet that every one of the projects in the 98% group had a finely detailed Gantt chart to show everyone involved that everything was 'in control'. Except, of course, it was a crackpot-rigour delusion. Busy fools. Deluded by focusing on all the things that, in an Efficiency Engine' world would have looked like progress, but in the Special World of innovation, we're the precise opposite. In Innovation World, counter-intuition rules. Progress is listing (and doing something about!) all the important list of things the team didn't know.

Worst Of 2014 Awards

Yet another stellar year of First World problems, annoyances and trivialities…

Joint 'It-Can't-Be-KLM-Again Suck'y-Airline Of The Year' and 'All-Conversations-May-Be-Recorded-For-Training-Purposes Customer Service' Awards – 2014 saw a transformational year in the airline industry. Not least of which was a corporate brain-transplant for every member of Ryanair's ground and cabin staff. No more 'does your bag fit in that cunningly smaller than the official cabin bag allowance metal frame?' Gestapo, no more short-changing when buying a cup of tea on the plane. Hey, it was almost civil. Which then sets in train a cascade of events that somehow ends up meaning that Easyjet has become the worst airline on the planet. Sure, the British Airways cabin crew were still as surly and demeaning as ever, and sure, the planes were late as ever, and Emirates managed to design the world's worst flight connection system at Dubai airport (I disembarked an A380 onto a coach (!) that then took 40 minutes to get to the Connections Hall. I think we must've done two laps of the whole airfield.), but Easyjet found their way to the bottom of the heap with a whole sequence of events like this one:

Me (sat in mid-aisle seat a row ahead of an empty Exit Row): 'would you like me to go sit in one of those seats?'

Cabin Crew: Are you flying Priority?

Me: No.

CC: Well you can't sit there then.

Me: But I thought you had to have someone sitting in that row in case there was an emergency?

CC: Yes, someone from Priority.

Me (looking around): but no-one from Priority seems to want to sit there. I thought I was being helpful.

CC: You can't sit there.

(She then proceeds to walk two rows further down the plane, man-handles someone out of their seat and moves them in to the Exit Row.)

Me (smiling at her after the person was suitably seated): you found someone then?

CC: Yes.

Me (looking at the befuddled man now sat behind me) I'll have to remember to book Priority next time. You get treated so much better.

Man (shaking head): I'm not a regular.

Me: I know what you mean

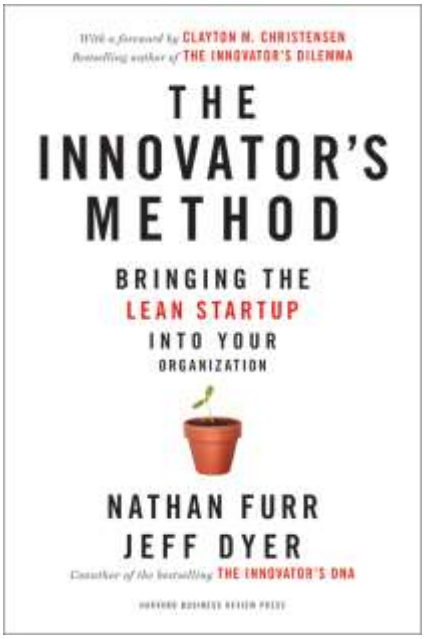
After a while, like Old-Ryanair, this level of spite becomes one of the attractions of flying Easyjet. What can they dream up this time? Sadly for them, nothing as good as the actual winner of the Airline Award this year. Hello Wizzair.

Looking back, there was a clue in both the name and the logo: this was not going to be a good experience. It was cheap though, and that, I'm guessing, was their rationale for

treating passengers quite literally like cattle. The only thing missing from the ground staff were wellington boots and a Tazer. Everything else they had down pat. If it wasn't quite so frightening, it would have been surreal. Couple all this with the fact that they fly from Luton and you have all the ingredients of an experience to leave a Royal Marine veteran traumatized. Luton is full of passengers that are going away for their first trip abroad, but probably shouldn't be. People that you half expect to have just chiseled off their probation surveillance ankle straps and are now heading somewhere sunny with no extradition treaty. Which means the airport staff are on constant high alert and working to the assumption that everyone they come in to contact with is either an armed robber or has the IQ of a special needs hamster. All in all the sort of place and, with Wizzair, the sort of airline that would have told Dante that he was missing a vital tenth Level in his description of Hell.

The Depeche Mode Everything-Counts-In-Large-Amounts Literature Award – the business literature team found themselves needing to introduce a marking system like the one used in the sport of diving, where one part of a diver's score comes from how well they executed their dive and the other comes from the degree of difficulty of that dive. When it comes to translating that two-sided idea to the topic of bad business books, we decided to re-frame the degree of difficulty part in terms of likely influence or 'should know better'. In other words, now that we live in a world of zero barrier to entry, anyone on the planet able to string 20,000 words together can get a book published, but our expectation as readers from the large majority of these authors isn't high because we have little confidence that they know what they're talking about. Irrespective of their ability to write legibly and in sentences that are somewhere close to syntactically correct (I did find one 'author' reminiscing about his World War 2 experiences in the 'milletry' and thought I could safely move on to the next candidate for my reading list). Our 'worst' of the year award, therefore, was most likely to go to the author or authors that really should know better because a lot of readers know them and respect their views. Enter our clear winner for the year, The Innovator's Method, by Nathan R. Furr and Jeffrey H. Dyer. Two gentlemen who really, really should know better, Mr Dyer being associated with uber-guru Clayton Christensen and their co-authored 'The Innovator's DNA'. That book was pretty bad (key problem being the word 'the' in the title and the prevailing assumption that there was a set of characteristics that defined all innovators. Well, ultimately it might turn out that such a set of characteristics does exist, but Dyer and Christensen certainly didn't come anywhere close to finding them). At least they failed in a non-dangerous way. This time around, Mr Dyer takes up the challenge to find the universal Innovator's Method, and manages to come up with something that is almost inevitably somewhere between 'quite' and 'extremely' dangerous. Again the heart of the problem is the word, 'the' in the title: there is no single method that will help an innovation team get all the way from insight to profit, and there never will be. There's a clue in the whole chain of Christensen books, which over the years since the Innovator's Dilemma have merely served to demonstrate that the more the authors dug into the guts of the admittedly elegant Dilemma model, they uncovered more and more exceptions that the team don't really know how to explain. Hence the Innovator's Solution is worse than the Dilemma; and DNA is worse than Solution. The problem for me seems to be that the readership seems to continue to get bigger and bigger. The logic for that shift goes something like this: Christensen found out something important about Innovation, so he must be important; Harvard Business Press keep publishing his books so he must still have something important to say; there's no-one else coming along to say he's wrong so he must be right; he's trained and endorsed a bunch of co-authors so they must be right too. It's a slippery slope. One that I sincerely

hope The Innovator's Method has now taken to the valley floor. Important clue to the wrong-headedness of this book: 85+% of innovations come from finding and solving Contradictions, but The Innovator's Method doesn't mention the word or one of its synonyms once. Shame on you Furr and Dyer. Shame on you too Professor Christensen for selling-out your name and reputation by writing a glowing Foreword for this toxic mountain of insipid thinking.



The Necessity-Is-Not-Always-The-Mother Invention Award – it would have been a surprise if the world of pet invention didn't spring out one or two candidates for this award, and 2014 wasn't about to break with tradition. I admit to having high hopes when I read the title of US 8,857,011, 'Pet Vacuum Cleaner', but sadly it turned out it was a device for vacuuming your pet, So much for me thinking I might finally be able to get our cats to do something useful around the house. Oh well. Far better turned out to be US8,869,654, granted on 28 October as 'Combination Pet Collar And Bottle Opener'. Damn, I'm thinking to myself, why didn't I think of that one before. Then it turns out, reading the invention disclosure, neither did the inventor. Someone had done it before him already. So not only did Paul Fidrych manage to get something obvious patented, but something obvious and previously published. As a patent. Nice work if you can get it. Still, the description of the flaws of the previous attempt was quite amusing I thought:

Domesticated small animals, such as dogs, often wear collars. Collars serve as both a functional and aesthetic purpose for the owners of the pets. A collar provides a means for connecting a leash to the animal. Often the collar will include a D-ring to facilitate the selective coupling of a leash to the collar. The D-ring also serves as a hanging device for attaching an identification tag.

Far-removed from the art of animal collars, bottle openers were developed to open a variety of bottles, including those with caps that are crimped to seal in the contents, whether it be beer, soda, or other liquids.

Openers are available in many different designs, including hand held, wall mounted, vending machine mounted, as well as other styles.

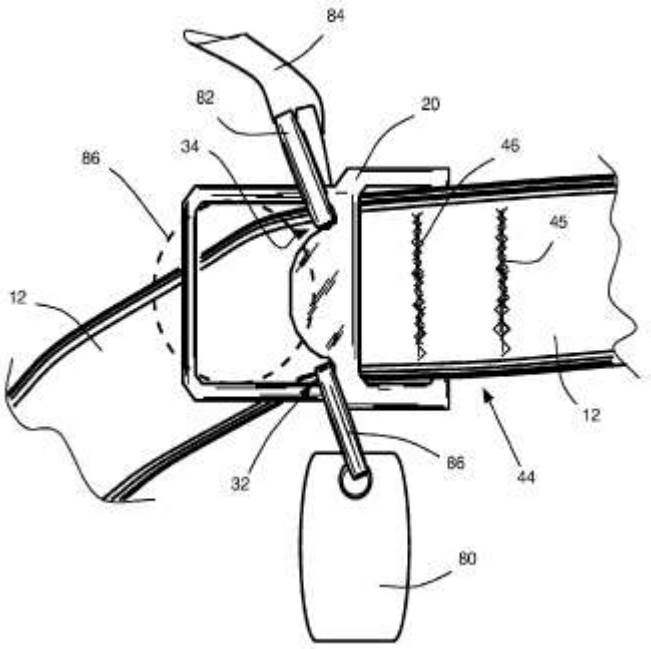
The incorporation of a bottle opener into a device than can be worn on a person is known. For example, U.S. Pat. Nos. 6,185,772 and 4,135,267 describe belt-buckle bottle openers. One attempt to combine a dog collar with a bottle opener is a collar sold under the brand name of

Wander Collar by Kurgo available at www.kurgo.com. However, these known devices have several shortcomings: Specifically, the combination belt and bottle opener are generally difficult to use because the bottle-prying feature aligns perpendicular to the long-axis of the belt. Thus, when attempting to open a bottle while worn, the opener causes the belt to twist and this twisting makes opening the bottle difficult or impossible. Further, this twisting is uncomfortable to the wearer. In other devices, the entire belt must be removed for the belt-buckle opener to function as a opener--this is often impractical so such devices are worn as a gag or statement, and fail to work as a utilitarian bottle opener and belt. The Kurgo Wander Collar has many shortcomings in addition to the similar shortcomings just discussed relative to belt-bottle openers: For example, the Wander collar has many sharp crags and edges that can catch on articles and can readily cause injury to the dog or person handling the dog and because of the alignment of the pry-hook, it too is difficult to use as an opener when worn as a collar as there is insufficient space to grip the opener when worn on the dog's neck and there is no resistance provided by the collar due to the orientation of the opener relative to the collar.

Yet another problem not contemplated in the art of dog collars and generally overlooked in human apparel is the amount of human-generate scrap material that ends up in land fills and is otherwise wasted and adds to the global green-house gas production and increases humankind's carbon footprint. Therefore, there is a need to re-use and/or reclaim any portion of this scrap to reduce the environmental impact new products, including dog collars, cause. One overlooked solution is to re-use discarded rubber products, such as bicycle inner tubes, which are particularly difficult to dispose as they do not quickly degrade or deteriorate, and due to the high petroleum content, pose a serious risk of fire, smoke and air pollution if left in scrap piles. Further, butyl rubber cannot be recycled with other plastics or household waste. The relative low cost of virgin-raw material makes traditional recycling cost prohibitive.

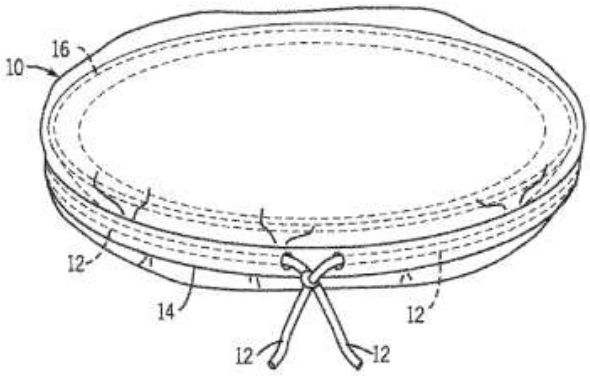
Yet another problem with existing dog collars, which are typically constructed of either leather or nylon, is the time required for the collars to dry after becoming wet. This often causes the material to deteriorate and can become malodorous.

Accordingly, there remains a need for an improved combination of dog collar and bottle opener that improves upon the current art. Such a collar should use recycled material to reduce the environmental impact on the planet. Further, such a device should be operable as a bottle opener when worn without causing distress or pain to the wearer. Also, such a device should be free from sharp edges and crags, but also serves as a means for hanging an identification tag and also serve as a coupling link for a leash. Further, the collar should dry quickly, resist odors, and be soft and comfortable for dogs to wear.



Plus, who would've guessed that a bottle-opening dog collar was also going to solve the world's recycling problems. Mr Fidrych I salute you on behalf of everyone, you, sir, have thought of everything. Almost. I wonder if there's an opportunity for a follow-on invention here where we get the dog to open the bottle for me? Worth a thought.

Moving swiftly on from pets to the kitchen next and another October patent. US8,866,055 was granted to Ashley Davis as a 'Microwave splatter prevention fabric cover and method'. Here is a picture of said cover:



Quite funny in its own right I think, but nothing in comparison to the convoluted logic that justifies all the effort associated with dismantling my microwave to fit said fabric cover every time I reheat the leftovers of last night's dinner. Here goes:

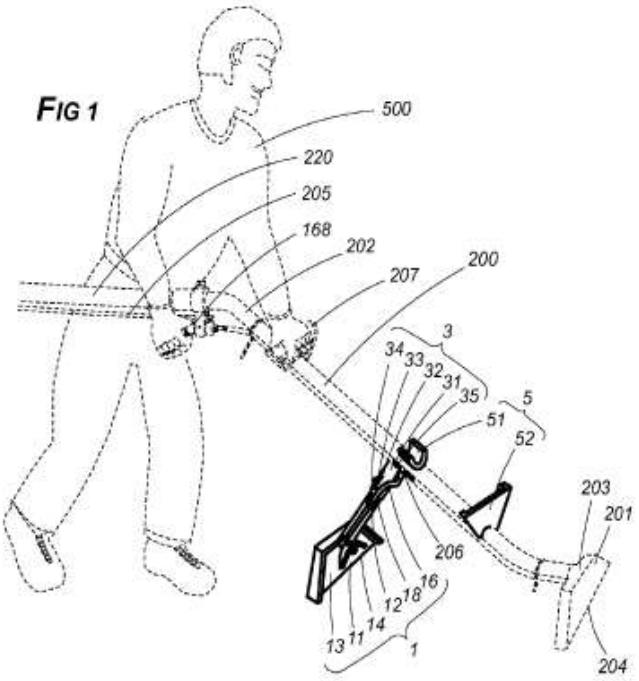
Microwave ovens are widespread through the world to re-heat or cook food. One unfortunate aspect of cooking with a microwave is that food splatters as it is being heated and soils the inside of the microwave. People have used paper towels, plastic lids and other, non-secured disposable items to cover microwavable dishes to prevent dirtying the microwave. Unfortunately, none of the currently available items are able to consistently keep the area clean. Currently, the only material available with the express intent of covering food dishes while being cooked in a microwave is plastic which is disposable by nature. Plastic runs the risk of melting if heated to a high enough temperature. Additionally, they are easily stained and difficult to clean, thus making the cooking experience more difficult. It is also common practice to place a paper towel over a cooking dish in the microwave. This type of solution creates the issue of the paper towel falling off the food during the heating process, thus resulting in the food soiling the microwave. Also, paper towels are disposable.

Still, not one to look a gift-horse in the mouth, I'm just about to now submit my own invention for a washing machine for microwave fabric covers. Take that, paper towel environmentalists.

So now, out of the kitchen and into the living room for this sly gem from Gordon Wright Massey, who, obviously feeling tired out after having to steam clean his carpets decided, damnit, something needed to be done. Here's the abstract for his patent, US8,800,102:

The forwardly projecting wand of a conventional commercial carpet steam cleaner is propped up by a connected stabilization leg extension so as to reduce the weight imposed upon the operator by the cleaner during its operation. The stabilizing leg extension is provided the same cleaning capabilities the conventional cleaner has so that, modified in this way, the number of cleaning members is doubled and twice as much of the cleaning area is covered with each stroke of the wand. Handlebars are added to further ease the task and an attached stowage nest is incidentally included for a supplementary cleaning extension.

Perhaps a picture will help to emphasise the significance of Mr Massey's thinking. And give you an impression of what he looks like in real life:



I'm sure the steam-cleaner manufacturer has been on the phone to Mr Massey to make sure they secure the rights to use this cunning contraption. They're probably kicking themselves. Don't worry, if Mr Massey decides to play hard to get, the spurned manufacturer might like to know that this is the patent that managed to achieve the worst score ever in the ApolloSigma software. In no small part due to the length of Claim 1, which has to be a candidate for being the longest in history. Whether it's also the funniest, I'll leave you to decide. Personally, I think the patent attorney couldn't possibly have kept a straight face when he was drafting this. Deep breath now…

A carpet steam cleaner, the carpet steam cleaner comprising a manually manipulated tubular elongated carpet steam cleaning wand comprising a cleaning end and a manipulative end, the wand by reason of its tubular configuration, disposed to withdraw suctioned air and soiled liquid from a carpet through the cleaning end thereof for transfer by conduit to a remote waste collector; the cleaning end configured with a head comprising a cleaning face configured for flush disposition upon the carpet; the carpet steam cleaner further comprising coupled to the wand a steam and cleaning agent hose through which steam and cleaning agents are provided, the steam and cleaning agent hose connected to a remote steam generating site, the steam and cleaning agent hose disposed to selectively emit and force pressured steam and cleaning agents from the remote steam generating site into the carpet through the wand head's face, the emissions controlled by operation of a trigger disposed at the wand's manipulative end; the carpet steam cleaner further comprising a stabilizing leg extension assembly comprising one or more stabilizing leg extensions, each one or more stabilizing leg extension connected to the wand thereof, conferring a bifurcation thereon and extending downward toward the carpet, each one or more stabilizing leg extension comprising for its connection to the wand a connective end, each one or more stabilizing leg extension comprising a cleaning end configured with a head comprising, as in the manner of the wand itself, a cleaning face for flush disposition upon the carpet; each one or more stabilizing leg extension further comprising tubular configuration disposed to withdraw suctioned air and soiled liquid from the carpet through the cleaning end thereof for transfer by conduit to the remote waste collector in the same manner as with the cleaning wand; the cleaning wand comprising for each one or more stabilizing leg extension a connection orifice disposed therein and a connection nipple of given diameter disposed at the connection orifice, the connective end of each one or more stabilizing leg extension comprising an inner diameter greater than the outer diameter of the connection nipple and connected by connection means to the connection nipple such that the passage of suctioned air and soiled liquid withdrawn through the cleaning ends of both the wand and each one or more stabilizing leg extension comprises one of continuous communication, the

passage of air and soiled liquid trough both unimpeded by any obstruction where the two are joined; the carpet steam cleaner further comprising coupled to each one or more stabilizing leg extension, a length of steam and cleaning agent hose disposed to selectively emit and force pressured steam and cleaning agents from the remote steam generating site into the carpet through the extension head's face in the same manner as with the cleaning wand's steam and cleaning agent hose; the cleaning wand's steam and cleaning agent hose comprising a connection valve and the length of the steam and cleaning agent hose of each one or more stabilizing leg extension disposed by connection to the wand's steam and cleaning agent hose through the connection valve such that the fluvial passage through the hoses of both the cleaning wand and each one or more stabilizing leg extension comprises one of continuous communication, the passage of steam through both unimpeded by any obstruction where the two are joined; wherein each one or more stabilizing leg extension and each head's cleaning face is formed in size and configuration and disposed to support the weight of the steam cleaning wand and each one or more stabilizing leg extension without tipping when left unattended; and wherein, as the steam cleaning wand comprising the one or more stabilizing leg extension is manipulatively pushed and pulled by an operator across the carpet's surface, the task is lightened by reason of even distribution of weight and the multiplication in size of the cleaned area without increased effort.

If that turns out not to be the longest Claim ever, I suspect it might have a pretty good shout for longest sentence. Everyone a winner.

The Slow-Fast-Moving-Consumer-Goods Design Excellence Award – The packaging company said it was a mistake, but coffee drinkers in Switzerland found themselves looking at pictures of Hitler and Mussolini when they reached for their dairy creamer in 2014. Creamer lids are apparently very collectable in that part of the world. I suspect this ‘limited edition’ will break a few records in years to come. In a bad way.

Not that far behind dead-dictator creamer lids in terms of bad taste, was the spate of ebola related paraphernalia that made its way onto the market in the US. ‘Sexy ebola nurse’ outfits just about got away with it by focusing on the Halloween market. Ebola toys probably didn’t:

History, meanwhile, will probably look back on 2014 and declare it the Year of the Selfie. Unfortunately, when something becomes very popular it tends to attract bandwagon-jumpers. The epitome of which was probably the 'selfie-brush':

Our overall winner, however, has to be this little – err, not so little – gem from the world of technology. Shout when you think you know what it is…

…did you guess it yet?
It's an iPad periscope obviously. Doh. Enter the Bright spark boffins at iTOi who had the insight that iPad video-calling needed to be more realistic, and that the best way to achieve that effect was by creating a device that has a set of mirrors configured in such a way that makes a video caller appear further from the shiny rectangle than they actually are. Yes really.

Let's All Jump Off A Cliff Advertising Suicide Award: 2014 proved to be another signature year in the advertising industry's efforts to reverse of all the hard work and efforts of the feminist community over the last fifty years. Top of the list of targets was Nine West and their adverts for 'starter husband hunting shoes'.

Also included in the campaign was a leather tote bag for the 'anticipatory walk of shame' and booties with four-inch heels for tearful mothers sending their kids off to kindergarten for the first time.

As every FMCG company on the planet now understands, adverts don't work anymore. Mainly because no-one has an attention span of 30 seconds. If you can't get your message across in 5 seconds it's game over, baby. Unless your name is Arby's. Rather than spraying spots across American airwaves, Arby's chose instead to run a single 13-hour commercial that showed in exquisite detail how its brisket is smoked. The commercial appeared on a single MyNetwork affiliate in Duluth Minnesota.

Once word about the stunt got out, apparently 350,000 unique visitors swarmed to a website housing the video. The average visit lasted 38 minutes. Sadly, I got distracted after the obligatory 5 seconds. Ooh, look, a squirrel.

Patent of the Month – Cold Plasmas

Over the past few years, cold plasma has received significant attention from several medical device companies looking to use the technology to prevent infection and promote healing of difficult-to-treat wounds, burns, diabetic and venous ulcers, and surgical sites. Cold Plasma Medical Technologies Inc. (CPMT) in Arizona is one of the leaders in the field. And it is to them that we go for our patent of the month this month. US8,928,230 was granted to a team of inventors at the company on 6 January. Their patent is for a portable, hand-held device and power unit that converts a noble gas mixture into a cold plasma state and delivers it to the site of a wound. The system aims to eradicate bacteria, fungi and viruses that can infect wounds, burns and surgical sites, also accelerating the body's natural healing capabilities at the cellular levels, and reducing the length of time it takes for a wound to heal.

Plasma, which is typically so hot that it would damage tissue, is a partially ionized gas used in various industrial and scientific applications. Only recently have scientists been able to create cold plasma that's steady at room temperature and atmospheric pressure and painless to touch.

The CPMT inventors have been tackling the next 'yes, but' in the cold plasma evolution journey. Here's what they have to say in the Background section of the invention disclosure:

Atmospheric pressure hot plasmas are known to exist in nature. For example, lightning is an example of a DC arc (hot) plasma. Many DC arc plasma applications have been achieved in various manufacturing processes, for example, for use in forming surface coatings. Atmospheric pressure cold plasma processes are also known in the art. Most of the at or near atmospheric pressure cold plasma processes are known to utilize positive to negative electrodes in different configurations, which release free electrons in a noble gas medium.

Devices that use a positive to negative electrode configuration to form a cold plasma from noble gases (helium, argon, etc.) have frequently exhibited electrode degradation and overheating difficulties through continuous device operation. The process conditions for enabling a dense cold plasma electron population without electrode degradation and/or overheating are difficult to achieve.

Which, from a contradiction perspective looks something like a conflict between the desire to generate a 'dense' plasma (Amount Of Substance) being hampered by electrode degradation (Reliability) and overheating (Temperature). Here's what that conflict looks like when mapped on to the Contradiction Matrix:

IMPROVING PARAMETERS YOU HAVE SELECTED:

Amount of Substance (10)

WORSENING PARAMETERS YOU HAVE SELECTED:

Temperature (22) and Reliability/Robustness (35)

SUGGESTED INVENTIVE PRINCIPLES:

35, 3, 40, 31, 1, 16, 17, 33, 7, 18, 14, 39, 10

And here's the basis of the CPMT solution:

A cold plasma treatment device comprising: a body having a gas compartment (Principle 31) *therein, the gas compartment communicatively coupled to a gas inlet port; a bottom member comprises of a non-conductive material having a plurality of openings* (Principle 31)*, the plurality of openings communicatively coupled to the gas compartment; and a dielectric barrier discharge device* (Principle 35) *formed by an electrode disposed adjacent to an insulating barrier* (Principle 3)*, the insulating barrier in turn disposed adjacent to the gas compartment and the electrode coupled to a high voltage electrical inlet port.*

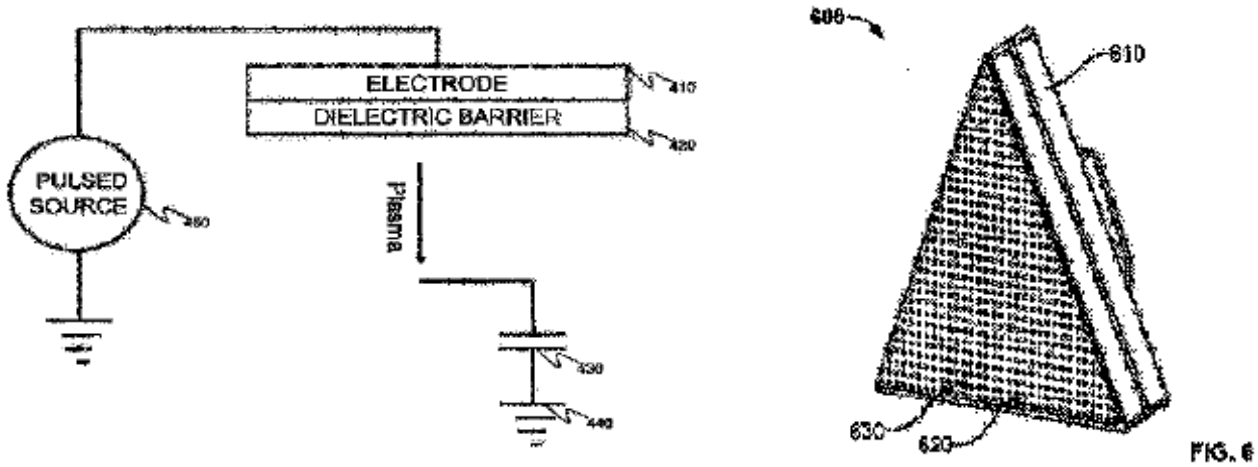
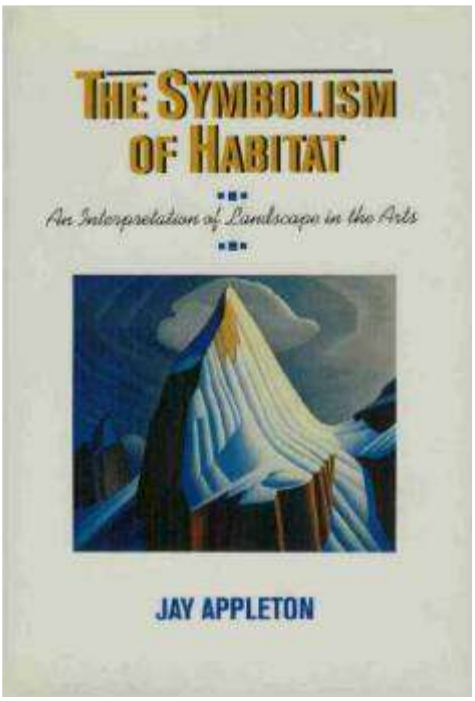


FIG. 6

Plasmas sit towards the 'ideal' end of the Object Segmentation evolution trend and as such have a lot of evolutionary advantages to offer. Especially, when we get to use them cold – no point heating things only to have to cool them later.

Best of the Month – The Symbolism Of Habitat



No matter what you do, there's always going to be a next contradiction. Last month's problem was the worrying dearth of decent reading in the current management literature. The solution to that problem turned out to be a fairly obvious broader casting of the 'what should we go and read?' net. The new contradiction is that the best thing we found this month is an obscure art book from 1991 that isn't that easy to find, and therefore feels a little bit unfair that we recommend it to ezine readers. I'm still not sure what the solution to that problem is, over and above providing a more detailed overview of the insight contained within the book. The work in question is 'The Symbolism Of Habitat by Jay Appleton. To say that that book contains a single insight is probably a tad unfair to Professor Appleton. Although, that said, it's also worth noting that it's an insight that he seems to have devoted a large proportion of his academic career to building and verifying.

In the spirit of building on, rather than merely verbatim reproduction of his work, a good way to start the story is to ask you which of the images over the page you find the most appealing. The image you chose, according to Professor Appleton's hypothesis tells you something about your view of life.

How this all works starts from a comprehensive study of landscape paintings, photographs and designs in the arts and architecture in order to try and uncover why some become 'timeless' classics and the majority do not. The answer – perhaps not surprisingly – is 'it depends. What it turns out to depend upon, however, is that every landscape scene basically collapses down to three basic types: refuge, prospect and hazard. Then, if you're a 'refuge' type of person, you tend to like 'refuge' type landscapes; if you're prospect-oriented, you tend to veer toward 'prospect' scenes. And so on.

Already this feels quite interesting to me. Where things start to get a deal more so is when we step beyond Appleton's hypothesis and start integrating some TRIZ Contradiction thinking: Some landscape scenes contain more than one of the refuge, prospect and

hazard elements. Some create and help resolve these contradictions. The better that resolution occurs, the more we're likely to like an image. Let's see. Which one of these do you like best?

1

2

3

4

5

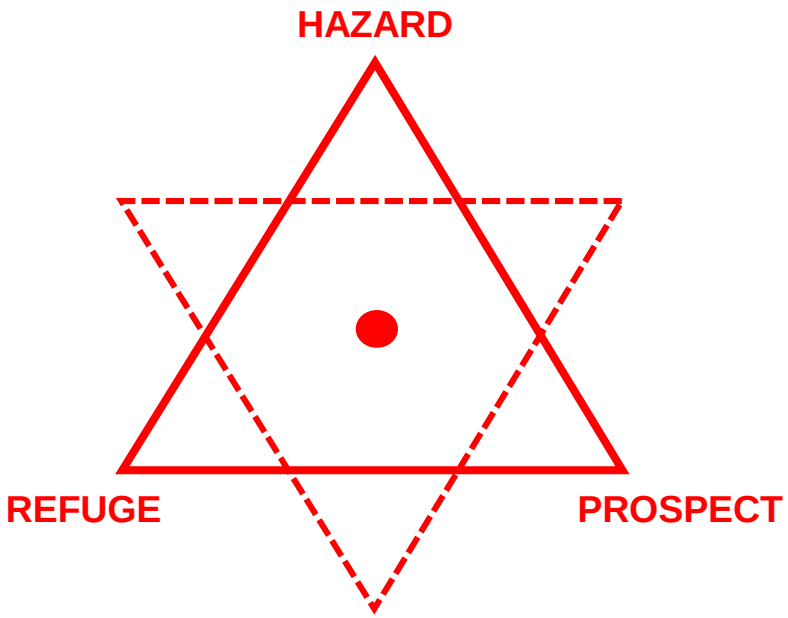
6

7

1: Refuge
2: Hazard, Refuge, Prospect
3: Hazard
4: Prospect, Refuge
5: Refuge, Hazard
6: Prospect
7: Prospect, Hazard

(Each of the images, by the way, have won 'landscape photograph of the year' awards, so hopefully I've selected images with an equivalent level of technical merit.) According to my numbering scheme, if you liked image 6 the best, Professor Appleton might categorise you as a 'Prospect' driven person – i.e. the adventurer or innovator that's out there searching

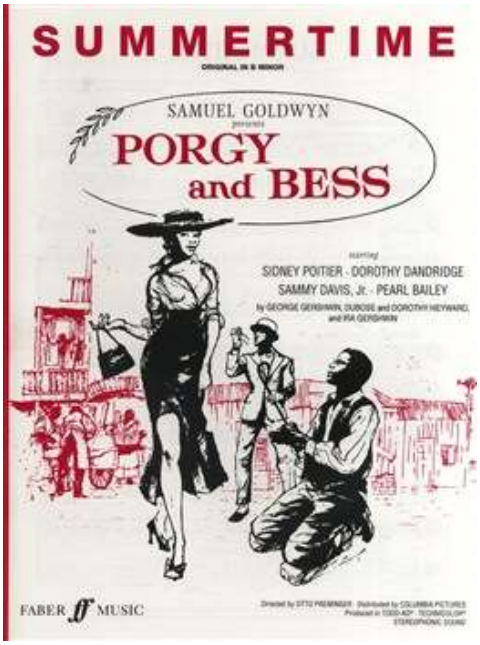
for something ‘beyond’. Conversely, if image 1) was your preferred choice, you’re probably more like driven by the ‘Refuge’ meme. Which means you’re happier protecting what you have. And so on, with some of the images representing images that somehow combine more than one of the three types:



If your preference was for Image 2), you’re the person sitting at the middle of this picture, the lighthouse-in-a-storm photograph representing a haunting combination of all three of the types. This in turn perhaps helps explain the near universal fascination with lighthouses: the structures of which represent a perfect tension between refuge and prospect. Put the lighthouse in a storm, and we bring in the third, ‘Hazard’ element too.

One of thing things I love about Professor Appleton’s book is that he sets out his argument with a healthy degree of open-mindedness. Which is to say he doesn’t try and ram it down your throat. Rather suggesting that the reader goes and explores for themselves whether the model exists. The other thing I love about the model, then, is just how easy it was to trawl through screens full of landscape images and observe exactly what Professor Appleton was talking about. A can sense a new PanSensic tool on the (Prospect) horizon. In the meantime, I heartily recommend you search out a copy of the book. Or if not, at least spend a few minutes looking at a few of your favourite pieces of art and look for evidence of the refuge-prospect-hazard model in the backgrounds. I think you’ll be quite surprised at what you discover.

Wow In Music - Summertime



Summertime,
And the livin' is easy
Fish are jumpin'
And the cotton is high

Oh, Your daddy's rich
And your mamma's good lookin'
So hush little baby
Don't you cry

One of these mornings
You're going to rise up singing
Then you'll spread your wings
And you'll take to the sky

But until that morning
There's a'nothing can harm you
With your daddy and mammy standing by

Summertime,
And the livin' is easy
Fish are jumpin'
And the cotton is high

Your daddy's rich
And your mamma's good lookin'
So hush little baby
Don't you cry

Over the nearly 80 years since it was written, the song Summertime has become perhaps the ultimate jazz club standard. From Ella Fitzgerald to Janis Joplin to Sting and beyond, there have been over thirty thousand cover versions. Which has to count as some kind of a ‘wow’ in its own right. The very mention of its title in a social scenario is liable to end up

with someone assaying the opening lines, “Summertime and the livin’ is easy/Fish are jumpin’ and the cotton is high”. When July and August are at their blazing hottest, it makes perfect sense, marinated in a dazed, languorous heat, capturing some ineffable essence of America’s Deep South.

Viewed prosaically, however, it’s less a song than a song snippet, a verse and a chorus repeated twice, taken from a self-styled “folk opera”, Porgy and Bess, whose initial 1935 Broadway run was far from a success. The song’s main creators, the composer George Gershwin and the writer DuBose Heywood, did not even live to see its popularity, as they died in 1937 and 1940, respectively. Yet, somehow, Summertime bucked these odds to become a 20th-century American classic.

American music was coalescing. Talented musicians such as Gershwin could see the potential in adapting roots black American styles such as jazz, ragtime, and spirituals, assimilating them into European traditions to create something new. Jerome Kern and Oscar Hammerstein II’s musical Showboat led the way in 1927, but Gershwin was experimenting with similar fusions as far back as his Harlem-set, one-act “jazz opera” Blue Monday in 1922.

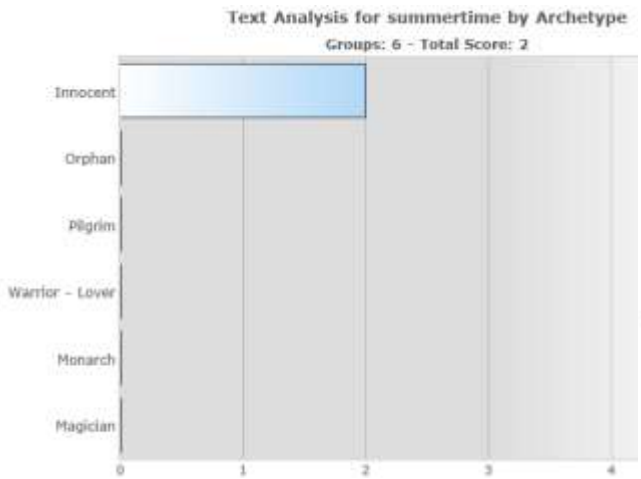
Gershwin wrote Porgy and Bess with Heywood, following the plot of the original novel/play about life in a black community in the Deep South. Summertime retains a writing credit for Gershwin’s older brother Ira but was, in fact, entirely written with Heywood. The mood and musical blueprint came from spirituals such as All My Trials, which had played a similar onstage role in the Heywood’s original play. The gospel singer Mahalia Jackson once recorded a version that melded Summertime with another spiritual, Sometimes I Feel Like a Motherless Child, since this had also been used to close the Heywoods’ original work.

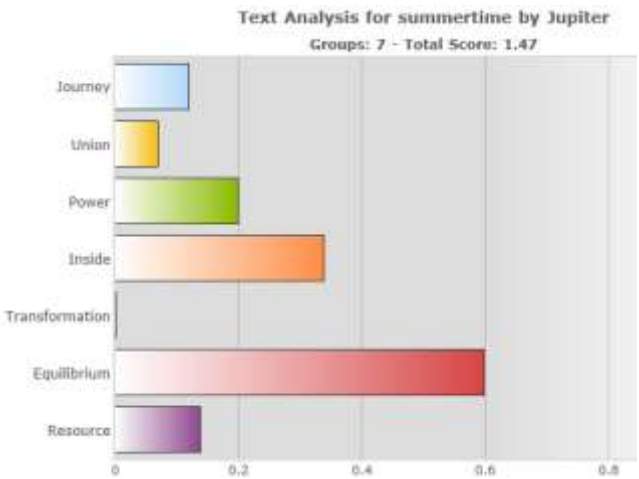
Gershwin was also remarkably successful in his intent to have this sound like a folk song. This is reinforced by his extensive use of the pentatonic scale (C-D-E-G-A) in the context of the A minor tonality and a slow-moving harmonic progression that suggests a “blues”. Perhaps, though the key to the enduring success of the song is it’s innovative seamless fusion (Inventive Principle 5) of multiple different styles and genres of music from Blues to spiritual folk to jazz to, some say, Ukrainian Yiddish folk music:

	Feature	**Detailed Example**
Melodic Phrasing/ Word Painting	Melody based on Pentatonic scale (Bar 14 with the addition of C sharp)	B-D-E-F sharp-A (this is the minor pentatonic scale)
	Use of falling 3rds, typical of Blues writing.	Bar 7 Bar11 Bar 13
	Portamento (added by performer)	Bar 21
	Gershwin demonstrates Jewish origins	Bar 21 (‘Don’ F sharp – E)
	Periodic Phrasing (4 bar phrases and can be compared to Haydn)	
Tonality	B Minor	

Harmony	Pentatonic scale Added 6ths Added 7ths (Blues influence) Chromatic (Dom/Tonic sequence) E natural (Blue note) Added 9ths	 Bar 5-8 Bar 12 (piano part) Bar 20 (piano Part) Bar 14 (piano part; e natural-C-G sharp-G natural) Bar 20-22 Bar 45 (similar to Faure) Bar 14 (accompaniment) Bar 25
Structure	Strophic Form, the music is developed, similar to Haydn.	A-Summertime and the liv'in ain't easy. A1- Fish are Jumpin' an' cotton is high. A – Oh yo' daddy's rich…….. B – So hush little baby don't yo' cry
Instrumentation	Vocal line Orchestra Solo Violin Womens voices	 Bar 26 Bar 26
Rhythm	Dotted Rhythms Swung Quavers Syncopation 2 bar ostinato (lullaby)	Bar 9 Bar 13 Bar 7 Bar 22 Bar 11 Bar 15 Bar19 Bar 24 Bar 26-29

Perhaps, too, there's something universal about the lyrics. Here's what a couple of PanSensic tools have to say about them:

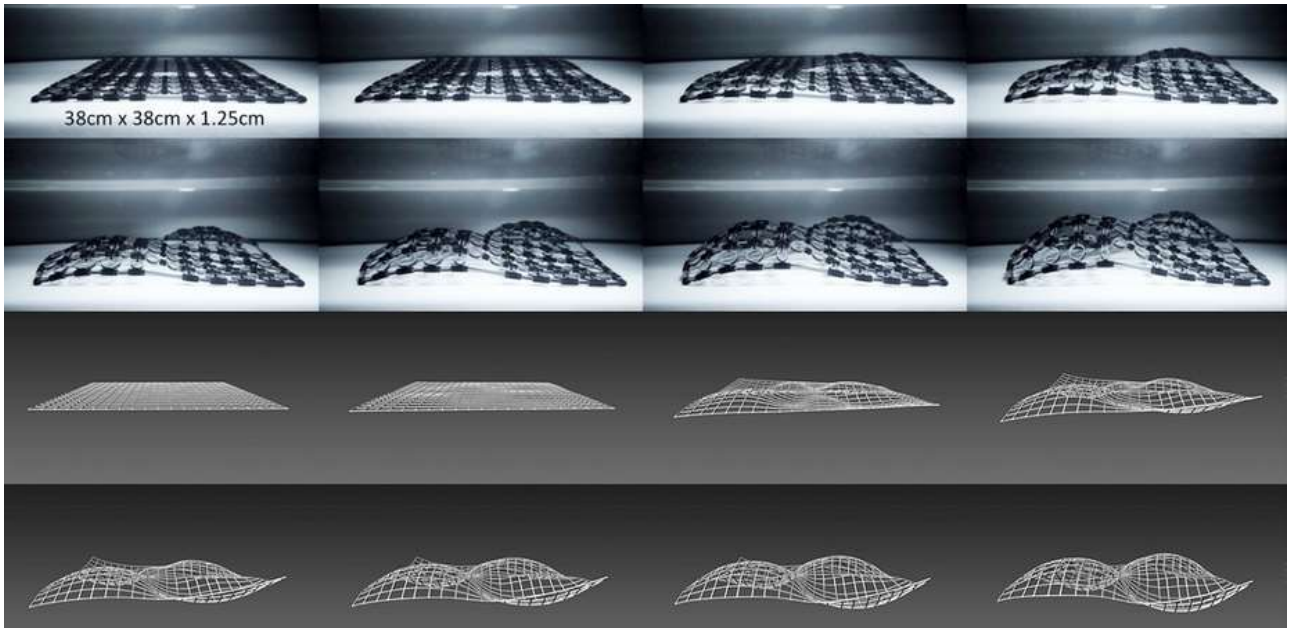




Innocence and equilibrium. The perfect universal lyrical 'wow' themes?

Find out more in the BBC4, hour-long documentary about the song, airing just before this ezine is circulated, and no doubt available for iPlayer download for the next month.

Investments – 4D Printing



Additive manufacturing – or 3D printing – is 30 years old this year. Today, it's found not just in industry but in households, as the price of 3D printers has fallen below US$1,000. Knowing you can print almost anything, not just marks on paper, opens up unlimited opportunities for us to manufacture toys, household appliances and tools in our living rooms.

But there's more that can be done with 3D printed materials to make them more flexible and more useful: structures that can transform in a pre-programmed way in response to a stimulus. Recently given the popular science name of "4D printing", perhaps a better way to think about it is that the object transforms over time.

These sorts of structural deformations are not new – researchers have already demonstrated "memory" and "smart material" properties. One of the most popular technologies is known as shape memory alloy, where a change of temperature triggers a shape change. Other successful approaches use electroactive polymers, pressurised fluids or gasses, chemical stimulus and even in response to light.

In a paper published in Nature Scientific Reports, we looked at the design of complex self-deformations in objects that have been printed from multiple materials as a means to customise the object into specific forms.

Unlike many others who have demonstrated how to bend simple paper-like shapes, we constructed a two-dimensional grid structure that deforms itself by stretching or shrinking across a complex three-dimensional surface.

Imagine dropping a flat stretchable cloth onto a randomly shaped object, where the cloth moulds over the shape beneath it. In geometrical terms, as the curvature of the cloth changes to fit the object, the distances and areas alter. We took this into account by providing a solution that copes with bending and also expansion in size, and came up with several designs that demonstrated that this is possible.

Underwater transformation
Head of the MIT's Self-Assembly Laboratory, Skylar Tibbits, started this line of research a few years ago with expanding materials and simple deformations. The collaboration of researchers from MIT's Camera Culture group and Self-Assembly Laboratory and the companies Stratasys and Autodesk Inc took this further.

Our approach was to print 3D structures using materials with different properties: one that remained rigid and another that expanded up to 200% of its original volume. The expanding materials were placed strategically on the main structure to produce joints that stretched and folded like a bendy straw when activated by water, forming a broad range of shapes. For example, a 3D-printed shape that resembled the initials "MIT" was shown to evolve into another formation that looks like the initials "SAL".

What now?
We imagine there's a wide range of applications such as home appliances and products that can adapt to heat or moisture to improve comfort or add functionality. Childcare products that can react to humidity or temperature, for example, or clothes and footwear that optimise their form and function by reacting to changes in the environment.

There are also uses for pre-programmed self-deforming materials in healthcare – researchers are printing biocompatible components that can be implanted in the human body. There are many more uses these could be put to if they can be manufactured to change shape and function without external intervention from a surgeon. Individually designed cardiac tubes are one good example.

This was a proof of concept for self-transforming materials, with an easy production process and an available suite of tools to customise and analyse the process. But even so, this is just scratching the surface – in the future we aim to produce larger structures which can handle more complex transformations, as well as smaller, miniaturised models which can be used in the body. While we found the deformations could be applied and reversed repeatedly, the material degraded after a while, so we need to improve its long-term durability.

With 4D printing there's a lot to play with. Now, that 3D printing captured our imagination, just think what adding time to the equation could do. Watch this one fly!

Generational Cycles – Hero Patients

This story from the 20 December edition of the Guardian newspaper in the UK:

An alarming new dimension to the NHS crisis has been revealed as data shows young adults are bypassing GPs and heading straight to overstretched A&E departments because they can't get suitable appointments.

A stark generational divide in the way people use the NHS is highlighted in a report by Citizens Advice, which finds that people aged 18 to 34 are more than twice as likely to attend A&E departments or walk-in centres as those aged 55 and over – and that they are far less likely than older people to be able to see a GP when they need to.

The findings suggest that, despite repeated promises by successive governments to make GP services more accessible, the NHS is still failing to cater for a working population that wants family doctors to be available at times that fit in with busy working lives.

The data will stoke the increasingly fraught debate over the future of the NHS, which both the Conservatives and Labour believe will be a key battleground in next year's general election campaign. Based on responses from 900,000 people across England, Citizens Advice found young adults were more than twice as likely to be unable to secure an appointment with their GP at a convenient time as those aged 65 and over, and that levels of satisfaction with and trust in the GP service were dramatically lower than among those of pensioner age.

It found that 30% of young adult respondents had found their experience of GPs to be "very good", compared with 64% of those aged 75 and over. One in seven people (14%) aged 18-34 could not see a GP last time they tried to make an appointment. Just one in 17 (6%) aged 55 or over said they had been unable to see their GP. One in eight (13%) of younger adults did not get any professional help for a health problem after failing to see their GP.

Gillian Guy, chief executive of Citizens Advice, said failure to treat younger people outside hospital would add to the financial pressures on the NHS. "GP services need to keep up with 21st-century lifestyles. With many younger adults out at work, it can be difficult for them to get an appointment with a GP, particularly at a convenient time. As a result, some people are struggling to access the medical advice they need.

"It is in the NHS's interest to get primary healthcare for younger adults right and ensure services fit around busy working lives. A failure to meet their needs piles more pressure on budgets," Guy said.
The report helps explain the rapidly growing pressures on A&E services, as the NHS struggles to cope with the challenges of an ageing population, more sophisticated and expensive methods of treatment that are creating a culture of rising expectations, and limited resources.

It also emerged on Saturday that a secret report approved by health secretary Jeremy Hunt could double the time it takes ambulances to reach critically ill patients. A document seen by the Mail on Sunday *reveals that the target time to get to those suffering a range of serious problems including strokes and seizures is to be increased to 19 minutes.*

On Friday, figures from NHS England showed that in the seven days to 14 December the percentage of patients who were seen in A&E within the target time of four hours of arriving had hit its lowest level since monitoring began in 2010. Other data this weekend casts further light on the extent of the NHS crisis, which is seeing hospitals increasingly struggling to cope.
It includes:
■ *New analysis of the official GP patients' survey by the House of Commons library, which found there were 37.4m failed attempts to book an appointment with a GP last year, affecting about 4.7 million people. The figure is 700,000 higher than the year before.*
■ *Figures released on Friday that show a 27% rise since November last year in the number of beds taken up by older patients who could not be discharged because of a lack of social care places in the community. In November this year, 94,046 bed days were lost when medically well patients could not be discharged.*
■ *The findings of a survey by the medical trade journal,* Pulse*, published on Saturday, which found that four in 10 GPs have taken or expect to take time off because of burnout as a result of increasing workloads and intense scrutiny.*

The strains on GPs are being blamed in part for a 15% fall in the number of graduates applying for GP training roles this year, compared with 2013.

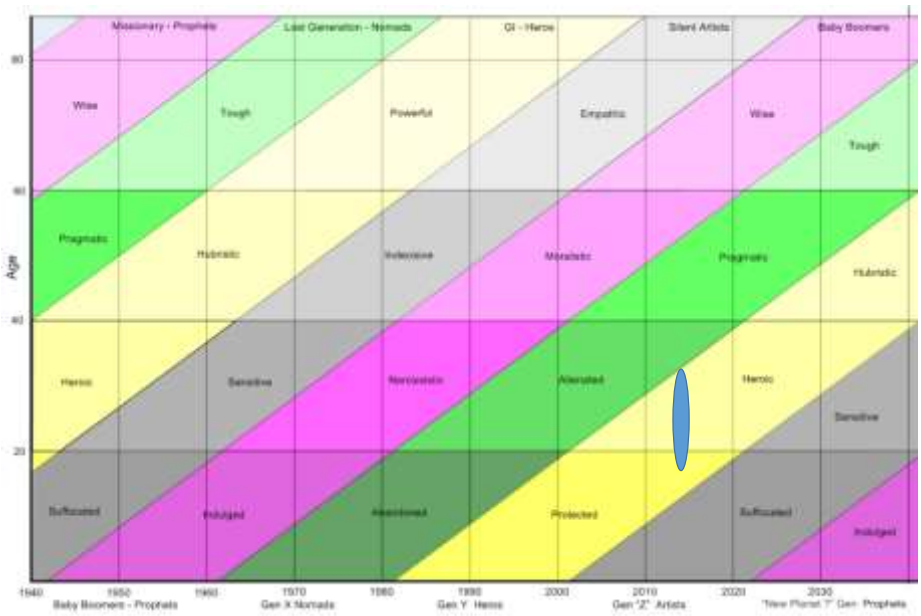
Citizens Advice found that young people often prefer to use walk-in centres instead of GPs but noted that nearly a quarter of these seven-day-a-week, 24-hour centres had closed since 2010.

Andy Burnham, the shadow health secretary, said: "Under this government, it has got harder to get a GP appointment. People compare it to getting sought-after concert tickets, sitting for hours early morning with the phone on redial. Sadly, too many young people leading busy lives are now giving up and going straight to A&E.

"This is an unacceptable state of affairs and cannot continue. To solve the A&E crisis, David Cameron must take immediate action to restore confidence in primary care. He needs to reverse his decision to end evening and weekend opening, halt the closure of walk-in centres and match Labour's guarantee of a GP appointment within 48 hours."

A Department of Health spokesman said: "We're giving the NHS £150m to develop new ways of improving GP access for millions of people, including 8am to 8pm appointments seven days a week, as well as email and Skype consultations. Next month commuters will also be able to register at a surgery near work."

18-34 year olds? Hmm. I wonder if this picture has anything to say to perhaps explain why young people's first thought is Accident & Emergency at their local hospital before they'd consider making an appointment to see their local GP:



Something to do with 'Heroic' Generation Y maybe? Heroes don't plan. Heroes don't visit their doctor; heroes keep going until they fall over. Or something like that. What we're seeing isn't entirely unpredictable in other words. The failure of the Government or NHS to anticipate it probably isn't either.

Biology – Bornean Gliding Lizard (Draco cornutus)

Imagine you're a green thing living in the flora and fauna of the rainforest. You're green to make you look the same colour as your surroundings and thus camouflage you against predators. You've also just learned a new predator avoidance trick: gliding. The only problem is when you're gliding, you're not camouflaged any more: there's nothing the same green colour that spends its time gliding between the flora and fauna. It's a problem. A contradiction problem: I want to be green and not green.

Enter a piece of work by researchers at the University of Melbourne in Australia. The work suggests that populations of the gliding lizard, *Draco cornutus*, have evolved extendable gliding membranes, like wings, which closely match the colours of falling leaves to disguise themselves as they glide between trees in the rainforest.

Found throughout South-East Asia, Draco is the only living genus of lizard with extendable gliding membranes -- call patagia -- which allow them to glide between trees in their territories.

Published Dec. 24 in the international journal *Biology Letters*, the study was conducted by PhD student Ms Danielle Klomp, based at both the University of Melbourne and the University of New South Wales with supervisors Dr Terry Ord and Dr Devi Stuart-Fox and collaborator Dr Indraneil Das from the University of Malaysia.

The team travelled to Borneo and observed two populations of a gliding lizard that have different coloured gliding membranes and occupy very different habitats.

One population has red gliding membranes, which match the colour of the red falling leaves of their coastal mangrove forest habitat. The other population has dark brown and green gliding membranes, which match the colours of falling leaves in their lowland rainforest habitat.

They determined how the colours would be perceived by a predatory bird and found that the gliding membrane colour would be indistinguishable from a falling leaf in the same forest.

Birds can see ultraviolet light as well as the colours that humans see, so it is important to take into account how closely the colours would actually match to a bird, Ms Klomp said.

"It's a cool finding because these gliding lizards are matching the colours of falling leaves and not the leaves that are still attached to the tree. In the mangrove population the leaves on the trees are bright green, but turn red shortly before falling to the ground, and it is this red colour that the lizards mimic in their gliding membranes. This allows them to mimic a moving part of the environment- falling leaves -- when they are gliding." Ms Klomp said.

Because some animals have developed colour not only for camouflage, but also as a form of communication, we also wanted to watch the lizards interact in the wild and determine whether their gliding membranes were used for communication as well as gliding said Ms Klomp.

The team filmed hours of gliding lizard behaviour to observe how often the colours were displayed to other lizards.

"We found that both the red and green/brown gliding membranes seem to have evolved to specifically resemble the falling leaves in each population's particular habitat, and are rarely used for communication," Ms Klomp said.

"Perhaps these populations may have originally had the same gliding membrane colours but as they have moved into different forest types their colours have adapted to closely resemble the colours of falling leaves in the different forests, known as divergent evolution."

Here's what Draco's contradiction problem looks like when mapped on to the Contradiction Matrix:

IMPROVING PARAMETERS YOU HAVE SELECTED:

Safety/Vulnerability (38)

WORSENING PARAMETERS YOU HAVE SELECTED:

Ability to Detect/Measure (49)

SUGGESTED INVENTIVE PRINCIPLES:

28, 37, 32, 17, 3, 13, 26

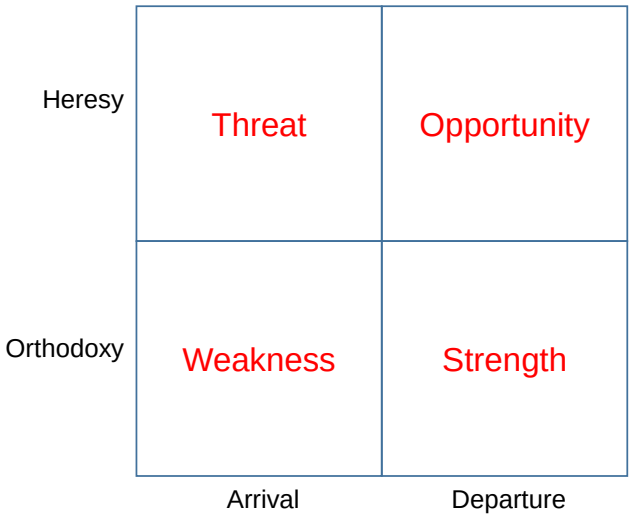
The 'unfold dead-leaf-coloured gliding bits' is simultaneously a lovely example of Another Dimension (Principe 17), Colour Change (Principle 32), Copying (Principle 26) and a healthy dose of either of both of Principles 3 (Local Quality) and 37 ('Relative Change' version) thrown in for good measure. I expect the 'add a field' solution (Principle 28) might take a little more evolutionary time. We'll keep our eyes peeled.

Read more here:

D. A. Klomp, D. Stuart-Fox, I. Das, T. J. Ord. **Marked colour divergence in the gliding membranes of a tropical lizard mirrors population differences in the colour of falling leaves**. *Biology Letters*, 2014; 10 (12): 20140776 DOI: 10.1098/rsbl.2014.0776

Short Thort

When you grow up by the sea, you spend a good deal of time looking at the horizon. You wonder what on Earth the waves might bring - and where the sea might deposit you - until one day you know you have lived between two places, the scene of arrival and the point of departure.
Andrew O'Hagan



"Heresy is the eternal dawn, the morning star, the glittering herald of the day.
Heresy is the last and best thought.
It is the perpetual New World, the unknown sea,
toward which the brave all sail. It is the eternal horizon of progress.
Heresy extends the hospitalities of the brain to a new thought.
Heresy is a cradle; orthodoxy, a coffin."
Robert G. Ingersoll

News

ICMM Ireland
We will be running a one-day event with good friends IRDG to formally launch the Innovation Capability Maturity Model in Ireland. The workshop date has been set as 16 April. More details on irdg.ie in due course.

Unlocking Big Data
We will be demonstrating some of the PanSensic capabilities at the 'Investing in Human Capital' event being run by the Met Office in Exeter on Wednesday 28th January 2014. The big idea is we've been asked to scrape comments and sound-bites gathered during the day and present our findings at the end of the day. No pressure there then.

University Of Southampton
We're happy to announce that we've been invited to come and lecture on the Business School's 'Project Management' Masters degree programme. The first guest module – on

the application of TRIZ in the project management world – will take place with the current cohort of students during early March.

Automated Myers-Briggs Profiler
We are currently finishing off the development of a PanSensic scraping tool that will automatically calculate a Myers-Briggs profile of an individual. Right now we're at a point where we need open-minded volunteers to offer themselves up to help validate the calculation engine. If you know your Myer-s-Briggs profile and you're happy for us to scrape some of the electronic text you might have committed to the public domain, please let us know and we'll build you into our plans. Best place to start will be to contact Cara @systematic-innovation.com.

New Projects
This month's new projects from around the Network:

Pharma – PanSensic NPD insight study
Process – Sweat project
Automotive – (more) SI Certification workshops
FMCG – Trendstorming workshop
Government – IP 'white space' mapping project
Pharma – SI Certification workshops
Healthcare – network analytics project
Transport – ICMM Journey mapping project
FMCG – PanSensic project

SI HQ
Happening more quickly than we thought (makes a change!), the Clevedon office closes its doors for the last time at the end of this month. All of the work and planned public workshops will now take place at our rather splendidly appointed premises in North Devon. It's the new centre of the universe you know.