

# Systematic Innovation



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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.

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Readers' comments and inputs are always welcome.

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# Changing Habits & Mastery

*“There is in us something wiser than our head.”*

Arthur Schopenhauer

All this talk of veil removal and learning of seven – or more – new skills may cause a person to start thinking that becoming a 1%er is starting to sound a lot like all the other twelve-step programme self-help recipe books. Can't-get-there-from-here books. Part of the problem is that the prevailing logic is that it takes on average 68 days to embed a new (or break an old habit, and 10,000 hours to achieve 'mastery' of a subject. These numbers come from James Clear and Malcolm Gladwell respectively. Both revered and trustworthy media figures. And both known for the scientific, logical brain they bring to bear in drawing the conclusions they publish. 'Evidence-based' being the credibility open-sesame phrase du jour. They did the hard yards, so we don't have to. But, what happens if we decided to take a peek behind their curtains? More particularly, what happens if we do it wearing a pair of 1%er googles? And what might our findings be able to tell us about 68 and 10,000?

Let's start with James Clear and his book, Atomic Habits. First up, as I'm sure Clear would acknowledge, he wasn't the first person to try and quantify the habit making/breaking process. As is often the case, the person that did – Dr Maxwell Maltz – wasn't interested in habit formation at all. Maltz was a plastic surgeon of all things. He observed that amputees took around 21 days to adjust to the loss of a limb and then generalised this to other behavioural changes. This anecdotal observation published *Psycho-Cybernetics* in 1960, subsequently morphed into the popular, over-simplified, self-help claim that it takes "21 days to form a habit." Maltz never claimed it was *exactly* 21 days, just that it was a minimum.

Spool forward to 2009 and Philippa Lally's University College London Study. Lally's research team followed 96 people forming new habits (like drinking water, running, etc.). On average, Lally concluded 66 days were needed for a behaviour to become automatic. A glimpse beneath the rug shows that this average covered a range of results from 18 to 254 days. Which, from a 1%er perspective, thinking about the 95 data-points, is a bit like saying that the 66-day average is essentially meaningless for any practical purposes. The reality being that how long it would take you or I to make or break a habit is highly dependent on the complexity of the habit and the individual.

Perhaps James Clear understood the meaninglessness of the 66 number when he decided to round it up to 68 days. Apparently, 'for ease of memory'. Well, maybe that was the magical insight that allowed Atomic Habits to become a best seller. Who knows. Stranger things have happened. But that's where we are. Or almost.

A 1%er might have gone back and looked at Lally's data and looked at the outlier datapoints rather than the mean. (A 1%er knows that when it comes to doing new things, there is little point in looking at averages, but an awfully large point looking at outliers.) Fortunately, BJ Fogg happened to deploy some 1%er-like habits with his Tiny Habits Approach. A Behavioural scientist at Stanford, Fogg emphasises emotions and environment design over repetition, and makes the claim that we can build new habits *immediately* if they are small enough and tied to existing routines. Instead of a timeline, Fogg suggests that habit formation depends on feeling successful and attaching the new

habit to a “trigger”. For example, “after I brush my teeth, I will do 2 push-ups.” Here, possibly, is a useful clue: habit change is less about time and more about building awareness of triggers and rewards to reshape behaviour patterns. A clue, perhaps extended by Charles Duhigg’s ‘Habit Loop Model. Logically, having replaced time with triggers and rewards, Duhigg doesn’t give any indication as to how long habit formation or breaking might take. That possibly explains why less people have heard of the Habit Loop model than Atomic Habits. 68 days sounds like a long time, but at least it allows me to set my expectations on my calendar. i.e. it’s kind of an Easy Button. Albeit a slow easy button.

What about the world of Neuroscience and Neuroplasticity, what do they have to say about habits? Quick answer: habit change is related to the rewiring of neural circuits, particularly in the basal ganglia. The key ideas then are that repetition strengthens neural pathways, and more complex habits require longer and more conscious effort to rewire. The underpinning insight, however, is the realisation that emotional salience and attention also accelerate habit learning. In the extreme case (e.g. trauma or love) “instant” rewiring is eminently possible. A fact that online platforms like TikTok, Duolingo, and Peloton have seemingly managed to exploit through gamified feedback, nudges, and habit loops. To the extent that it feels like everyone on the planet knows how to dance ‘the floss’ and still be clinically obese. In other words, ‘the algorithm’ is, deliberately or otherwise, optimised to simultaneously love to be able to impress friends with our dance moves, and super-sized burgers.

In summary:

Perspective	Time Estimate	Emphasis
Maltz (1960)	~21 days	Emotional adjustment; anecdotal
Lally et al. (2009)	66–68 days avg.	Repetition; behavioural data
BJ Fogg (Tiny Habits)	Instant if designed	Simplicity, emotion, anchors
Charles Duhigg	Time not specified	Cue–routine–reward substitution
Neuroscience	Varies; weeks–months	Neural plasticity, emotion matters
Behavioural Tech	Fast via design	Gamification, nudges, feedback loops

So, adopting a 1%er perspective again, it seems both habit formation and mastery can be achieved rapidly if we forget about the clock or calendar and replace them with something more related to the actual process of changing behaviours. And, to take that a step further (excuse the pun), change of any useful kind almost invariably at some point involves the recognition and then resolution of contradictions. Hello, Transcender.

At the heart of habit formation is a system-level contradiction: “we want habits to form quickly (so they become useful), but complex habits involve many sub-behaviours and situational variables, which naturally slow the embedding process.”

Push this a step further and we begin to perhaps see a generalisable law of psychological and skill-based learning: “The **number of contradictions** in a behaviour (or skill) correlates more strongly with time-to-mastery than raw time or repetition.”

A couple of examples might help:

- Simple habit (1 contradiction): e.g. “Drink a glass of water after waking up.”
  - Contradiction: remembering vs forgetting → anchor to waking up
  - Can be solved in < 1 week.
- Complex habit (many contradictions): e.g. “Work out daily at 6am.”
  - Contradictions: fatigue vs energy, scheduling vs consistency, motivation vs excuses, etc.
  - More contradictions = slower, unless tackled directly.

This might be a good time to bring Malcolm Gladwell’s 10,000hours to mastery meme into the story. Gladwell also falls into the trap of trying to frame mastery against the clock and calendar (although, I suspect, it was probably the publisher that pushed him to a number, knowing that ‘the public’ like easy button numbers... even if, at 10,000 hours they sound somewhat intimidating).

In the old view, Mastery = 10,000 hours of structured practice. In the new 1%er view, Mastery = Solve X contradictions in the shortest path possible. In the past I’ve suggested that X is 87. That number came from reading a book about Native Americans suggesting that at least one tribe had cultivated the wisdom whereby we all have 87 problems, and that as and when we solve one, rest assured life will bring us a new one to make up the 87 total again. The overall idea being that 87 is a big enough number that we should stop worrying about problems at all since, not only will we ever get to zero, we’re always going to have 87 no matter what we do. One of my 87 problems now seems to be that I cannot find a reference to that number or that story anywhere. The closest I can get is a Stoic re-interpretation of the same idea that says we all have 83 problems. Close enough, maybe. Close enough to make this short – hopefully useful – 1%er diversion:

Every getting-new-things-done agent carries 83 problems.

Not necessary all at once. They rotate—funding stalls, team tensions, tech that won’t work, a market that yawns. Solve one, and another slides in. That’s the rhythm of the Special World—the place you enter the moment you step beyond the familiar and say, “Let’s try something new.”

This is the phase Joseph Campbell called Tests, Allies, and Enemies – where the road is unclear, the rules are new, and the stakes are rising. Every “problem” is really a test in disguise. Each one asking, “Are you still willing?”

The 84th problem is the one that will break you if you let it: the belief that if you were any good, these problems wouldn’t exist.

But here’s the truth every 1%er must learn, usually during the Ordeal: the presence of problems isn’t proof you’re failing. It’s proof you’re in the game.

Drop the 84th. Embrace the 83. They’re not in the way of the journey—they are the journey.

Number aside, the whole premise of process-based habit change or mastery aligns with a number of other pieces of research. Second most notably, Anders Ericsson’s ‘Deliberate Practice’ – which states that progress only occurs when we address *failures*, *errors*, *misconceptions* – aka contradictions. And most notably, the TRIZ Law of Increasing Ideality, which says Systems evolve by resolving contradictions while minimising cost, time and harm.

Put another way, avoiding contradictions leads to plateau and delay. Running toward contradictions leads to faster habit change and mastery.

This also fits with a deal of real-world experience: elite performers *seek out* tough contradictions (bad habits, knowledge gaps, painful drills) and design feedback loops to resolve them efficiently.

Okay, let's come back to Habit Change again. The idea being that if we can formulate a contradiction-based procedure for inculcating useful new habits or eliminating harmful old ones that requires no more than four contradictions, when we come to tackle the 87 (83) contradictions leading to mastery, it will essentially mean climbing the same ladder, just doing it more times.

## Habit Formation as a Contradiction Ladder

A "habit" can be mapped on a contradiction ladder:

1. **Administrative contradiction** ('I wasn't aware I was doing that')
2. **Triggering contradiction**: ('I want X, but I default to Y')
3. **Behavioural contradiction**: ('The action I *intend* conflicts with the one I *default* to')
4. **Identity contradiction**: ('The habit conflicts with my self-perception')
5. **Environmental contradiction**: ('The system around me resists the habit')

If you solve all five contradictions, the habit becomes not just *formed*, but *natural*.

By segmenting the process into smaller chunks, we make it easier to create the all-important feeling of progress.

By focusing on what's important (the contradiction and the s-curve) we create the ability to eliminate or at least attenuate the importance of repetition. That's not to say that muscle memory isn't a factor – as a (mediocre) guitar player, I know it is – but that it's not the thing I need to focus on. As described in one of Iain McGilchrist's more profound quotations:

*"Your ultimate goal might be happiness; and there are worse goals to have. The trouble is that, with all respect to the US constitution, happiness cannot be pursued. People who pursue happiness find that it constantly eludes their grasp, like the bunch of grapes before the outstretched hand of Tantalus. Just as the harder we pursue sleep the more it evades us. Some truths are less self-evident than others (all the true ones, by the way)."*

In summary:

Dimension	Traditional Model	Contradiction Model
Time	Days / weeks	Depends on contradictions
Complexity	Repetition required	Number + type of contradictions
Mastery	10,000 hours	Solve all structural contradictions
Change speed	Repetition = progress	Resolution = breakthrough

And if, 'depends on contradictions' sounds like a cop-out answer for the time dimension in this table, let me say that, over the course of the last five years gradually formulating and testing this contradiction ladder, I've successfully shed over twenty of my less endearing habits, and replaced them with over thirty useful (to me at least) ones. None has taken more than a week, most have taken a couple of days, and a fair few, to BJ Fogg's point have effectively been instantaneous: I decided I was going to do something (write down a

'contradiction of the day' at the end of each day), and adopted it there and then, and, two years later haven't faltered once. That's not because I'm a smart-arse, it's because I'm a smart-arse with a near foolproof process...

### **The Habit Contradiction Ladder**

A tool to diagnose and resolve the core *systemic frictions* preventing a new behaviour from becoming a habit.

Each rung on the ladder corresponds to a *type of contradiction* that blocks habit formation. Climbing the ladder means resolving each one, in sequence or through recursion.

#### **Level 1: Administrative Contradiction**

('I wasn't aware I was doing that')

**Symptom:** I'm doing something automatically because either I've been taught to do it and/or my life experience to date has reinforced that doing it is useful and not a problem (by the way, depending on your individual circumstances, some or all of the Seven Veils identified earlier in the book will fall into this domain).

**Contradiction:** visibility vs. automaticity.

##### **Resolution Strategies:**

- Put the habit (Veil) at the front of your mind and notice each time you say or do something that confirms the presence of the habit, make some kind of note – possibly something as simple as a tally that you can review at the end of a day' or, for a more pernicious thing like a Veil, a sentence or two that will remind you of the context surrounding the habit ('looking for an easy button I know is making me more fragile every time I use it').
- More often than not, awareness of how often a habit is happening is half way to resolving the problems it is causing you – see if, having become mindful that you've just exhibited the behaviour, you can pause, then think about 'what could I have done instead?' before you carry on with whatever you were doing.

*Once this contradiction is resolved and we RECOGNISE the existence of the problematic habit (Veil), we can set about the process of RELEASING it. Time for the next contradiction:*

#### **Level 2: Triggering Contradiction**

('I want to do X, but I forget / don't start')

**Symptom:** The habit is not initiated.

**Contradiction:** Intention vs. automaticity.

##### **Resolution Strategies:**

- Anchor to an existing routine (e.g. 'you already write down a 'three good things' list at the end of the day, add the contradiction of the day thought next to that list').
- Use environmental nudges (post-it, alarm, wearable).
- "If-Then" implementation intentions.

*Once this contradiction is resolved, the habit starts occurring occasionally or irregularly.*

#### **Level 3: Behavioural Contradiction**

('I start doing X, but I default to Y halfway')

**Symptom:** The habit gets interrupted, redirected, or "hijacked."

**Contradiction:** Goal vs. existing neural pathways or muscle memory.

##### **Resolution Strategies:**

- Reduce friction for the new habit.



- Increase friction for the old behaviour (e.g. uninstall apps, hide snacks).
- Practice “micro-successes” (lower bar, increase confidence).

*Once resolved, the behaviour sustains through completion.*

#### **Level 4: Identity Contradiction**

(‘This doesn’t feel like “me.”’)

**Symptom:** Resistance, self-sabotage, imposter syndrome.

**Contradiction:** Habit outcome vs. self-concept.

**Resolution Strategies:**

- Frame habit as identity-consistent: “*I’m a person who...*”
- Use labels and reinforcement: “reader,” “creator,” “runner.”
- Re-author identity through narrative (tiny wins → self-belief).

*Now the habit begins to feel self-aligned and easier to repeat.*

#### **Level 5: Environmental Contradiction**

(‘My world doesn’t support this habit’)

**Symptom:** External demands, lack of time, distraction, cultural resistance.

**Contradiction:** Personal intention vs. environmental pressures.

**Resolution Strategies:**

- Redesign physical or digital environment (e.g. distraction blockers).
- Recruit allies/accountability systems.
- Schedule / location shielding.

*The surrounding system now supports and reinforces the habit.*

And, if we’re thinking about the Seven Veils in particular, or the bigger-still topic of Mastery, rather than we might choose to add a sixth contradiction...

#### **Level 6: Systemic Integration Contradiction**

(‘I do it, but it doesn’t compound or evolve’)

**Symptom:** Plateauing; stagnation of results.

**Contradiction:** Habit repetition vs. system feedback and evolution.

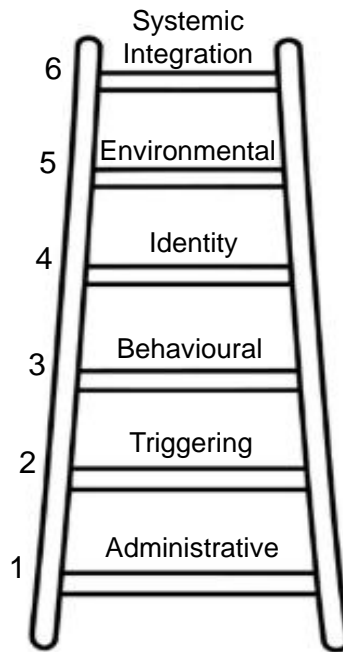
**Resolution Strategies:**

- Link to broader goals (e.g. part of a bigger identity or mission).
- Track signals → adapt → refine habit.
- Introduce reflection, review, iteration loops (weekly/monthly).

*The habit becomes part of an integrated, self-evolving system.*

Essentially, master this sixth step on the ladder and it’s the same one you’ll encounter again and again as you advance to the 83<sup>rd</sup> problem. A problem that we have now begun to remember is called a contradiction.

The Ladder is also intended to be applied both diagnostically (Where is the friction *really* occurring?) and from Navigator and Plate-Spinner perspectives (Which contradictions can we resolve *up front*?)



Finally, let's have a quick look at a worked example using one of the Seven Veils discussed in the 1%er book:

## Building the Habit of 'It's Not Personal, It's Business' through External Awareness

### Level 1: Administrative Contradiction

('I wasn't aware I was doing that')

You're a busy person, so giving yourself a gentle entry onto the ladder, spend a day at work, going about things as you normally would, but now, whenever you get a moment – in the restroom, for example, driving home, eating lunch – reflect on things you've said or done where you prioritised the mechanics of the task over the emotions of the people you work with. Keep a tally. If you get a chance, take one or two of the moments and think about what the 1%er version of you would've done. RECOGNISE.

### Level 2: Triggering Contradiction

"I want to feel more connected and aware, but I forget or get swept into busyness."

**Contradiction:** *Intention vs. automatic momentum of the day.*

**Strategies:**

- Micro-anchor: e.g., every time you touch a doorknob → take 1 conscious breath and notice something beautiful or human around you.
- Set a timed cue: phone buzz at 10:00, 14:00, 18:00 → look up and tune in for 10 seconds.
- Sticky word or symbol in your workspace: an evocative code-word as an attention flag.

**Outcome:** You begin noticing that you're *capable* of interrupting autopilot.

### Level 3: Behavioural Contradiction

"I pause and try to connect, but I feel nothing—or get distracted."

**Contradiction:** *The desired state (calm, present, connected) vs. the reactive momentum of the mind (judgment, to-do lists, etc.).*

**Strategies:**

- rub fingers, wriggle toes or other tactile signal, listen to ambient sound, feel air on skin.



- Reduce the bar: it's not about *feeling something profound* — just *noticing* is success.
- Let go of judgment: noticing disconnection is part of the habit.

**Outcome:** The behaviour of pausing and sensing becomes more embodied.

#### **Level 4: Identity Contradiction**

"This feels a bit weird, or 'not me'."

**Contradiction:** *Your narrative identity (busy, rational, results-focused) vs. the softening this habit requires.*

**Strategies:**

- Reframe: "I'm a person who chooses to see the humans more clearly."
- Link to admired values: e.g., "Einstein said the most important decision is whether we see the universe as friendly or not."
- Journal one small moment a day that shows how awareness helped — build narrative capital.

**Outcome:** You begin to believe: *this is who I am becoming.*

#### **Level 4: Environmental Contradiction**

"People around me are cynical or stressed; I keep getting pulled out of presence."

**Contradiction:** *An internal habit of connection vs. a system optimised for disconnection.*

**Strategies:**

- Subtly change language: e.g., offer more appreciative comments or genuine questions to shift group field.
- Shape your inputs: limit outrage-news and judgment-heavy media.
- Find or create one "green zone" space (physical or digital) where this new frequency is normal.

**Outcome:** The world begins to support, not subvert, your habit.

#### **Level 6: Systemic Integration Contradiction**

"I do this sometimes, but it doesn't feel like it's changing who I am yet."

**Contradiction:** *Habit repetition vs. upward spiral of identity and capability growth.*

**Strategies:**

- Set up weekly or monthly Empath *reflections*: How was I more aware this week? What shifted?
- Link 1%er practice to *higher purpose* (e.g. to be a better parent, leader, friend).
- Build in evolution: e.g., Week 1–2: presence to self. Week 3–4: presence to others. Week 5+: presence to nature or systems.

**Outcome:** The habit becomes a platform for transformation, not just self-improvement.

Through each level, don't be afraid of jumping ahead too fast. Or saying to yourself, I just don't have the energy to do any of this today. 1%ers know there's no such thing as failure or 'going backwards', rather that each down day or backwards day is really about learning. Why did I check out? Why did I let that email get to me? Why did I forget to reflect last night?

Either way, you're winning. You're resolving contradictions between the *you of now* and the *you that perceives more clearly and acts more wisely*. You're using attention as a contradiction-solving engine. Habits that "stick" reach *dynamic equilibrium* with their environment and identity.

And, best of all, thinking back to the Schopenhauer quote from the beginning of this chapter (part of your brain forget, another part didn't). What was he talking about? He was, recognising that all this Recognising, Removing and Replacing, all of this Contradiction finding and resolving stuff is already there inside us. It's called the right hemisphere of our brain, and, we're all just beginning to realise that the modern world causes us to spend way too much time using our left hemisphere (that's what James Clear was tapping into) and not nearly enough time using our right. The industrial-age world we can all see sailing off into the sunset was all about using our left-brain skills. The education system tasked with equipping us with the necessary left-brain skills has done its job. Now we can see that computers and AI can do all the left-brain logic and calculation tasks way better than we can. And – crucially – that they can't do the right-brain EQ and big picture things. And won't be able to for a long, long time (you can't build a right hemisphere by starting with a left hemisphere). 'More right hemisphere' is the 1%er's rallying cry. And the Habit Contradiction Ladder is the way we start shifting the hemisphere balance back in the new necessary direction.

# Making Moments



Moments. Ask any educator and they'll have their own collection of magical classroom moments. Fleeting, unplanned, unexpected moments. Moments where something suddenly clicks inside a struggling student's head. An unsolvable problem suddenly unlocked. Something you said that triggered an avalanche of insight. A breakthrough that changed the way they saw the world. A breakthrough that unlocked a lifelong love of a subject. The assignment that produced a short story so good it brought a tear to your eye. The project that brought an awed silence to the room. Breakthroughs that remind you that you didn't become a teacher because it was a job or a career, but because it was your calling.

Not many people have taken the time to study these kinds of Eureka moment. How do you decode magic? How do you find needles in haystacks?

Just because a job is difficult, doesn't mean we shouldn't attempt it. That was our thinking thirty years ago. Eleven and a half million case studies later and there's a lot we now know about the DNA of these golden moments. We know, for example, that they go beyond the logic of the curriculum. A teacher designs a lesson or an exercise aimed at delivering the required outcomes and a student comes back with something that far exceeds expectation. A 10x creativity-driven mind bomb. A new light in their eyes.

We know, too, that what the educator experiences as a wow moment – the sort of moment they can't wait to get home and tell friends and family about – is but a fraction of the buzz the student got from the experience. The sort of buzz that causes them to run up to the teacher in the street, five years after they graduated, and give them a hug.

We also know, most importantly, that these moments don't have to rely on serendipity. There are a million ways to break logic and create poor outcomes, but there are very few ways of breaking it and getting the 10x magical moments.

And, more to the point, we can prove it.

Here's where saving the Titanic comes in.

Picture the Scene:

You are the educator. It's 1912 and you and the class are on board the maiden voyage of the world's biggest, fastest most luxurious cruise ship. It's the middle of the night and everyone is woken by the gut-wrenching noise of what turns out to be an enormous iceberg scraping along the side of the ship. Alarms begin to sound. The ship is sinking. We know we're sinking, and it looks like none of the crew know what to do.

You say to the students, 'you've got ten minutes to come up with a plan'.

At the back of your mind, you know that over 1500 people died that night, and that the task is impossible.

You start the clock anyway. Half the class have been told they can use whatever online resources they like – ChatGPT, Claude, whatever they prefer. The other half, you gather together and share a couple of lines a different kind of generative AI has given you. In the first group, the laptops come out and everyone starts writing prompts. A few start scribbling ideas. One or two start sharing what they've found. Ten minutes later, their AI-driven investigations have generated a dazzling list of logical suggestions:

- Stay calm
- Put on life vests.
- Head to the lifeboats.
- Stay together.
- Help others.
- Follow orders.

You blink. Some of these are smart. But, in the context of the problem, also completely useless. The sort of logical solution the AI will have distilled from Society's accumulated logic. The exact same logic every other AI has also tapped into. The curriculum-following logic that ensured 1500 people died on the night of the incident.

While this is happening, you peak over at the other half of the class. You're a little sceptical because the suggestions the other AI offered up didn't sound very logical. As you watch, though, the group are looking at each other and, after a few moments, start jotting down thoughts and ideas. The flurry of activity grows and by the end of the allotted ten minutes when you bring the two groups together, you can see that this second group's list of ideas is not only a lot longer, but that they've also turned the list into a plan. A plan that, when you get the group to share with the other group, everyone – including yourself – can see is borderline genius. 1500 people needn't have died. The ship could have been saved.

There's a new light in everyone's eyes. They're all going to go home that night and tell their parents. They're probably going to get their parents to do the exercise so they can experience the same flash of didn't-expect-that insight.

All that was needed was a different logic. Saving the Titanic is a classic wicked problem. An extreme version admittedly, but exactly the same kind of wicked problem that students, all of us, have to deal with all the time in the big, wide everyday world outside the classroom. Wicked problems have no root cause. And no 'right' answer. Wicked problems only get solved when we go beyond today's logic and tap into our innate abilities to be creative. Not in a random way, but a way informed by world's greatest logic-breaking creative minds.

The unique knowledge base on which that 'other' generative AI is built.

We call it Violet.

Sure, it can do all the things other AIs can do. As educators, any half-decent AI will very capably allow us to delegate an awful lot of the sort of necessary but mundane ‘easy button’ administrative work. Violet will do all that.

What’s unique – and will continue to be unique – about Violet, though, is its ability to go beyond today’s logic and help educators provoke and inspire breakthrough creative thinking in students. It’s an engine, in other words, for systematically triggering those rare, unpredictable magic Moments.

Without getting into too much detail, Violet’s magic-Moment engine is built around a coherent suite of AI agents capable of dealing with wicked real-life problems (including, naturally, the sorts of wicked problem educators also have to deal with every day – the concerned helicopter parent that refuses to accept your teaching methods, the inevitable ‘discussions’ with the Principal over lack of resources, the aftermath of last week’s bullying incident, the million and one other problems needing beyond-logic solutions):

VioletSense – is all about building an understanding of context and tapping into the ‘irrational’ nature of the human mind, picking up the differences between what the fast and slow, left and right parts of our brain are doing and identifying the dissonances and conflicts that will help determine the objective and subjective realities of a given situation. It’s the part of Violet that helps us see that the sinking Titanic isn’t the problem students need to focus on.

VioletSee – is all about managing complexity. We’re all really good at identifying the myriad different contributing factors in a given situation, but we’re generally terrible at thinking about the relationships between those factors. See is about helping us to think about and map those ‘betweens’. And, in the Titanic situation, realise that the core requirement is finding resources that will keep everyone out of the ocean after the ship is gone.

VioletSolve – is all about tapping into the 11.5 million case study sur/logic solution database, and providing the educator with prompts and provocations to help them or their students generate meaningful and actionable solutions for, yes, the mundane day to day stuff, but also the magic moment breakthrough stuff. And, in the Titanic situation, a realisation that in and around the ship are all the resources that would ever have been needed to ensure everyone on board the ship stayed dry.

Taken together, the choice Violet offers educators is easy-button stark and simple. If you all you need is an AI that will make your life easier by helping offload the mundane, rote work that needs to get done, spin the wheel of fortune and choose whichever one sounds the best. Every AI on the planet is built on the same logic and the same data. Some will absorb that logic and that data faster than others, but in six months’ time, they’ll all be trained-to-death and the outputs they give will be virtually indistinguishable.

All bar one of them, however, will have sucked you into an invisible Faustian Pact. A logic-driven pact in which, the more you lean on the AI, the less frequently those Magic Moments will occur (see Coda II, at the end of this article). Until, after a couple of months the potential for creating them will have disappeared completely.

The exception is Violet. Violet goes beyond today’s logic to help spark tomorrows. Violet is designed to spark magic in such a way that the more you use it, the more magic you make. For yourself, for your students, and, when they graduate, for Society at large. A creativity-driven re-invention of the ways in which Society operates. A re-invention where everything becomes possible again.



Make Moments With Violet.

### Coda I

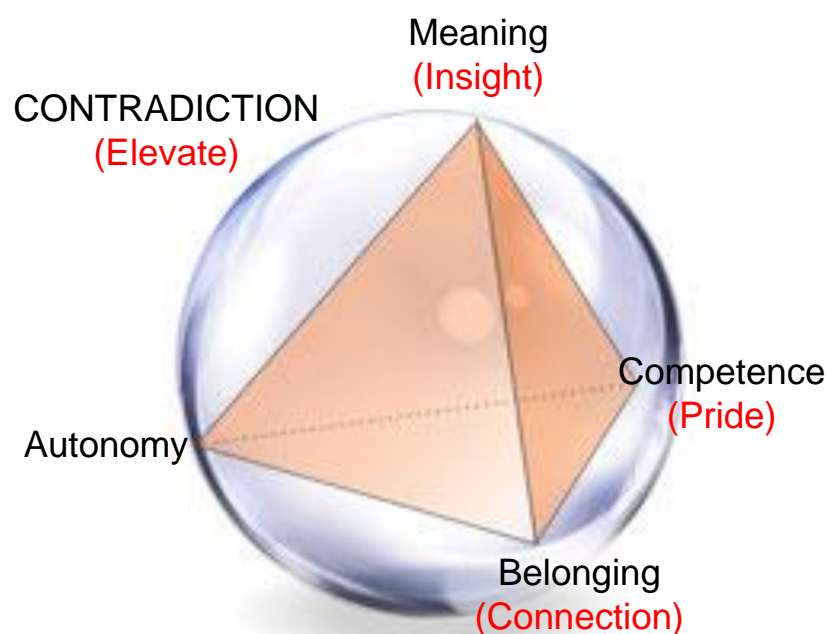
Reference 1 offers a book length investigation of the mechanics of 'moments', intriguingly, also featuring a lot of education related examples. The authors, as here, recognise that moments can of course be created in all other domains. Provided we understand the core principles upon which the effect happens.

In our work, we've tended to focus on the word 'wow' and the recognition that these kinds of reaction are best evoked after contradictions are solved. We expect one (trade-off based) outcome and we receive something that somehow broke free of our expectation.

Nor surprisingly, Reference 1 doesn't use the 'contradiction' word. Rather it concludes that a moment arises as the result of one or more of four factors:

- a) Elevation – 'breaking the script' or 'adding surprise' – which is their language for contradiction solving.
- b) Insight – some kind of 'aha' moment, whether that be situations where we either realise what the real problem is, or what the real solution is. In many ways similar to contradiction solving, but tends to veer closer to the domain of a specific context and desired outcome. The sort of 'aha' that changes how we see the world. (Reference 2).
- c) Pride – situations where we impress ourselves with what we've just accomplished ('I never realised I was capable of doing that'), often received in the form of some kind of validation from others – report cards, thankyou gifts, etc.
- d) Connection – events that provided an unexpected connection with others. The team scores a 96<sup>th</sup> minute winner, and suddenly you're hugging a stranger stood next to you in the crowd. Often, strangers in crowds aside, the sorts of things that get recorded as photos. Wedding photos probably being the iconic exemplar.

The Reference 1 list reminds us that, like 'wow's, moments are fundamentally about emotional responses. In which case, that means we know they should ultimately distil down to the ABC-M principles. Autonomy, Belonging, Competence, Meaning. This list correlates well, but also reveals something missing:





I don't think it takes too long to realise that the missing one on the list – Autonomy – is definitely another form of 'moment'. That feeling of freedom the first time in the car alone after you'd past your driving test. Slipping into a pub to buy your first pint. Voting in your first election. All those times when our agency made a step-change increase ('I never thought I'd be allowed to do that').

Four kinds of moment. All of them involving the resolution of some kind of contradiction.

The more that get built into the moment, the bigger and more memorable the moment becomes.

That's why, when the Titanic exercise is executed well, it always makes an impact. A beyond-logic impact.

## **Coda II**

This is a tough one. There are five distinct stages required to Master a subject The first three of which are template-based or where there is a fixed logical sequence of activities to be followed. The sorts of things that AIs are already pretty good at executing. Hence there is a temptation to outsource the thinking to one of the available generative AI tools to save effort. The cruel paradox then being that the AI isn't capable of doing the fourth or fifth stages of the mastery journey, and because you chose to delegate the first three to the AI, neither are you. It's necessary to build the foundations in order to build the house. Some things in life come with no short-cuts. The more reliant on 'Easy Buttons' we become, the less able we are to master anything. Like being able to create 'moments' for students or team members or bosses or loved ones. Careful what you outsource. (We talk a lot more about this cruel paradox in Reference 4.)

## **References**

- 1) Heath, C., Heath, D., 'The Power Of Moments: Why Certain Experiences Have Extraordinary Impact', Bantam Press, 2017.
- 2) SIEZ, 'Insight Mapping: Making Sense Of Raw Consumer Data', Issue 99, June 2010.
- 3) SIEZ, 'ABC-M Landscapes', Issue 167, February 2016.
- 4) Mann, D.L., Finnegan, S., 'The 1%ers: How New Things Get Done', in press.

## Not So Funny – 40 Inventive (Trolley Problem) Principles

The Trolley Problem is a thought experiment about an ethical dilemma involving a streetcar, several unfortunate people tied to the tracks and some poor guy entrusted with the decision over their lives and deaths. Philosopher Philippa Foot first proposed a version of the moral conundrum in 1967. However, credit for the meme comic, as most know it today, goes to philosopher Jesse Prinz, who appeared to have first posted them in the 2000s.

The scenario is simple yet thrilling: A runaway trolley is threatening to kill five people tied to the tracks. A single individual (you) has the power to divert the trolley to a different set of tracks by pulling a lever. The only problem is that on the other track, there's one person tied to the tracks. You have two options and two options only.

Do nothing and have the trolley run over the five people.  
Pull the lever and have the trolley kill the single person tied to the tracks.

What's the right thing to do? What does your intuition, what does your rational mind say? And how would your decision change if, instead of pulling a lever, you'd have to push a fat man on the tracks to slow down the trolley?

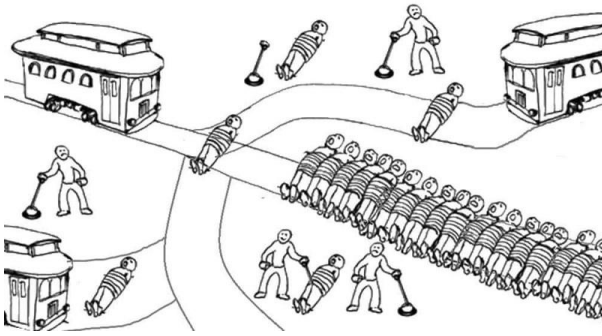
The Trolley Problem (and the related so-called Fat Man Problem) highlights the contrast between utilitarianism and deontological ethics. Utilitarianism suggests that the morally right action is the one that maximises happiness or minimises suffering. Even if it means sacrificing one person to save many. Deontology argues that some actions are inherently right or wrong, regardless of their consequences. Sacrificing one person to save others is therefore morally unacceptable.

One of the best lines from the 2012 spy thriller *Argo* is when the CIA director asks if our protagonist had a "better bad idea" than setting up a fake sci-fi movie production to smuggle American citizens out of Iran. The reply comes promptly: "This is the best bad idea we have, sir, by far." Sometimes, the protagonist knows, there are only bad options and it's about finding the best one. In the absence of real-world dilemmas of life and death, thought experiments help us think through how we'd handle similar situations.

Except, we published an article (Issue 259, November 2023) that applied some TRIZ thinking to all an escape from the either/or thinking the philosophers who keep finding new variants of the Trolley Problem seem to be perpetually stuck in. By way of some kind of proof that modern day philosophers seem permanently lost in Either/Or World, the trolley meme now extends to cover pretty much all of the 40 Inventive Principles. Not, I hasten to add, using any of the Principles to try and break the utilitarian-versus-deontological contradiction – that would be far too useful! – but rather to make the either/or conundrum even more ridiculous. There's no accounting for taste, I suppose.

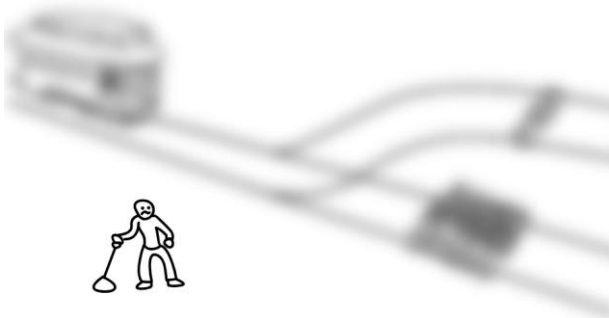
Here are some of the most egregious 'better bad idea' examples:

## Principle 1, Segmentation



## Principle 2, Taking-Out/Separation

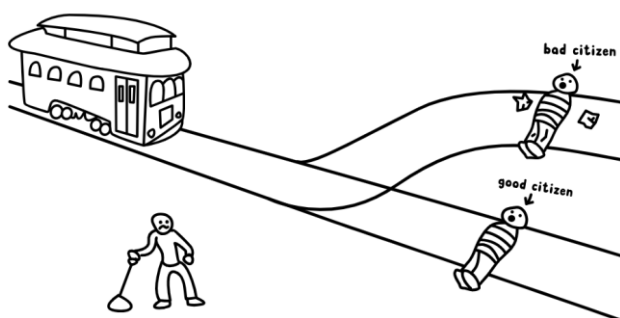
Level 13: Can't see



(Oh no! A trolley is heading towards 5 people. You can pull the lever to divert it to the other track, killing 1 person instead. At least, that's what you think is happening. You forgot your glasses and can't see that well. What do you do?)

## Principle 3, Local Quality

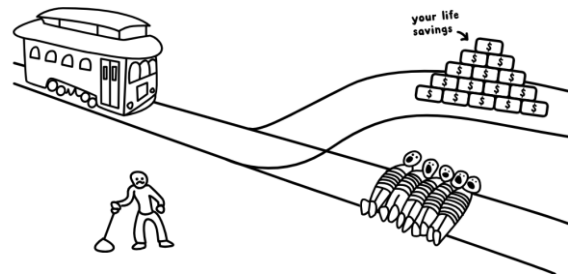
Level 23: Citizens



(Oh no! A trolley is heading towards a good citizen. You can pull the lever to divert it to the other track, running over someone who litters instead. What do you do?)

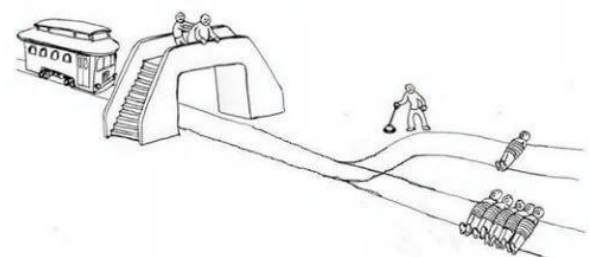
## Principle 4, Asymmetry

Level 3: Life Savings



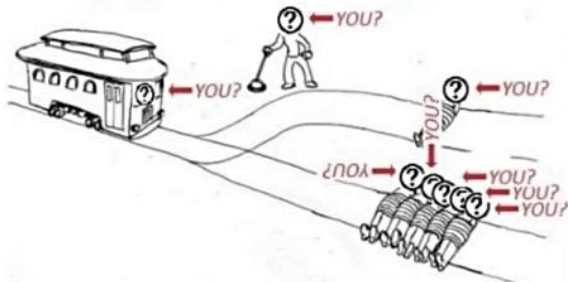
## Principle 5, Merging

Do you push the fat man to prevent a trolley problem?



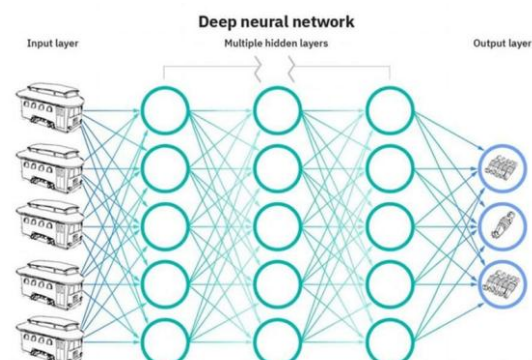
## Principle 6, Universality

### Veil of Ignorance: Trolley Problem



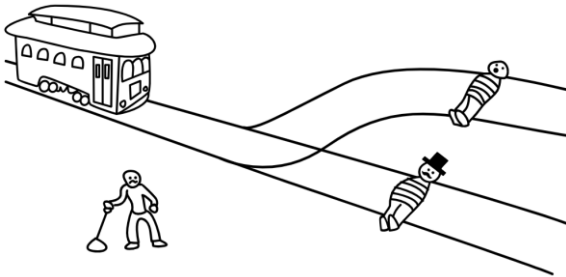
You don't know where you'll be in the trolley problem. However, you have to choose the scenario in advance. Regarding personal interest, would you like the lever to be pulled?

## Principle 7, Nested Doll



## Principle 8, AntiWeight

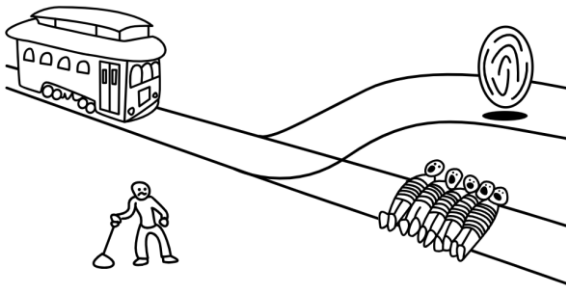
Level 6: Bribes



(Oh no! A trolley is heading towards a rich man. The rich man offers you \$500,000 to pull the lever, which would divert the trolley and kill someone else. What do you do?)

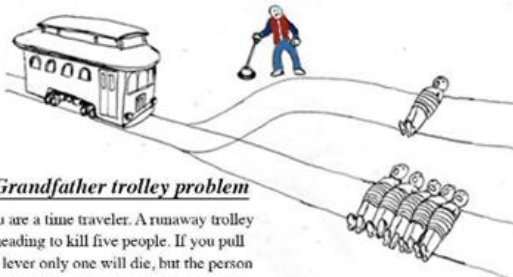
## Principle 9, Prior Counteraction

Level 27: Time Machine



(Oh no! A trolley is heading towards 5 people. You can pull the lever to divert it to the other track, sending the trolley into the future to kill 5 people 100 years from now. What do you do?)

## Principle 10, Preliminary Action

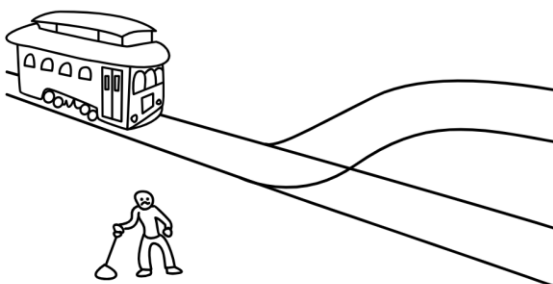


### Grandfather trolley problem

You are a time traveler. A runaway trolley is heading to kill five people. If you pull the lever only one will die, but the person on the track is your grandfather and your parents hasn't even been born yet. What if you pull the lever?

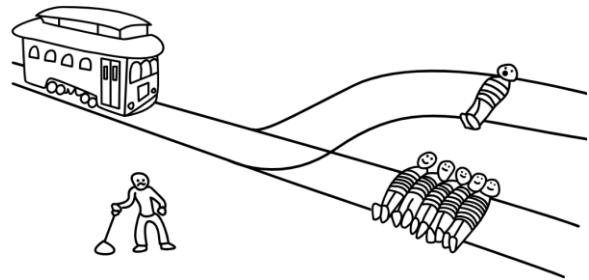
## Principle 11, Beforehand Cushioning

Level 22: Harmless Prank?



## Principle 12, Equipotentiality

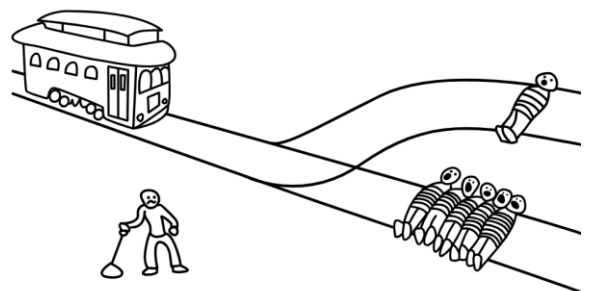
Level 9: Personal choices



(Oh no! A trolley is heading towards 5 people who tied themselves to the track. You can pull the lever to divert it to the other track, killing 1 person who accidentally tripped onto the track instead. What do you do?)

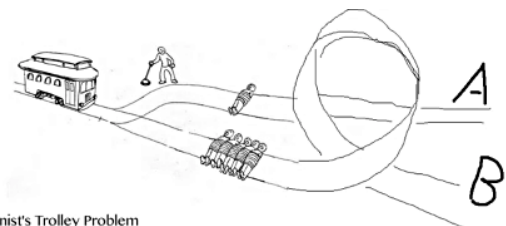
## Principle 13, The Other Way Around

Level 28: Free Will



(Oh no! A trolley problem is playing out before you. Do you actually have a choice in this situation? Or has everything been predetermined since the universe began?)

## Principle 14, Spheroidality



Hedonist's Trolley Problem

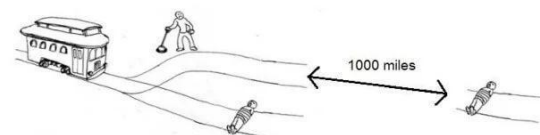
The track is heading towards B.

If you pull the lever, it will switch to A but it won't do the totally sick loop-da-loop.

## Principle 15, Dynamisation

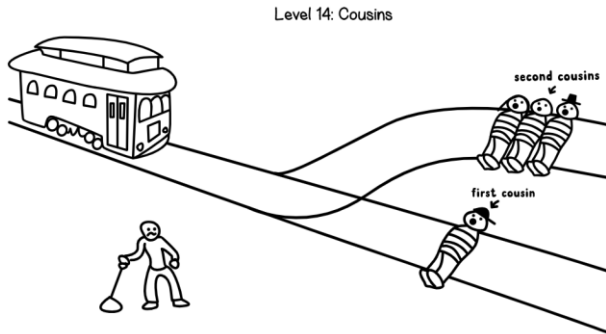
### Ship of Theseus Trolley Problem

If you do not pull the lever, one person will be crushed to death instantly. If you do pull the lever, the trolley will divert onto a thousand-mile stretch of track with one person tied down at the end of it. If as the trolley rolls down this thousand-mile track, a crew systematically switches out every piece of the original trolley with a replacement part, did the trolley which you diverted kill the man?



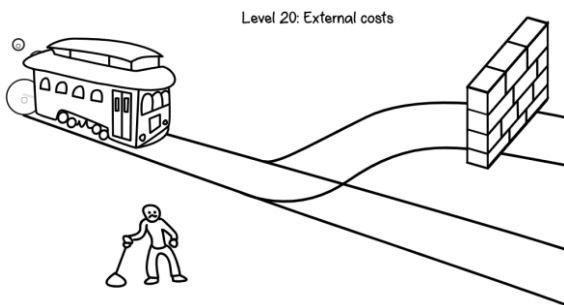


## Principle 16, Slightly-Less, Slightly-More



(Oh no! A trolley is heading towards one of your first cousins. You can pull the lever to divert it to the other track, killing 3 of your second cousins instead. What do you do?)

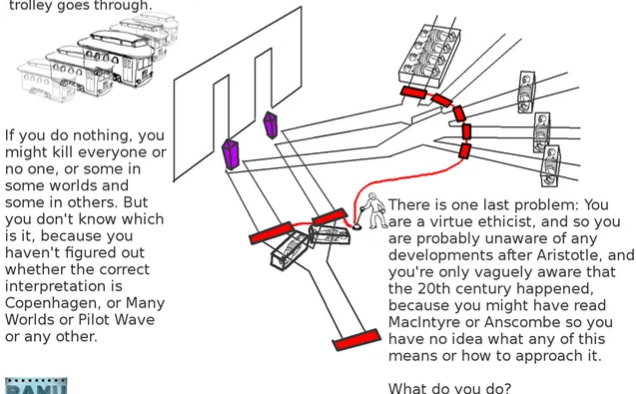
## Principle 17, Another Dimension



(Oh no! A trolley is releasing 100kg of CO2 per year which will kill 5 people over 30 years. You can pull the lever to divert it to the other track, hitting a brick wall and decommissioning the trolley. What do you do?)

## Principle 18, Vibration/Resonance

A quantum wave-trolley approaches a plate with a double slit. On the other end of each slit is a crystal that will split the wave-trolley into an entangled pair of wave trolleys with half the energy of the original. You stand next to a lever that operates seven wave-trolley detectors. These detectors are placed on the tracks that the entangled pairs will go through. Right after the detectors, people are tied down to the track, placed inside a box transparent only to the trolley frequency of the EM spectrum (this means you can't know if they are dead or alive until the box opens). If you activate the detectors, you will force the trolley's wave function to collapse into a single trolley-particle by revealing which slit it went through. This would instantly kill one of the two persons in front of the detectors on one side, but also have a 50% chance of killing a single person on the other end, or a 25% chance of either killing 4, or none, depending the final direction that the particle-trolley goes through.



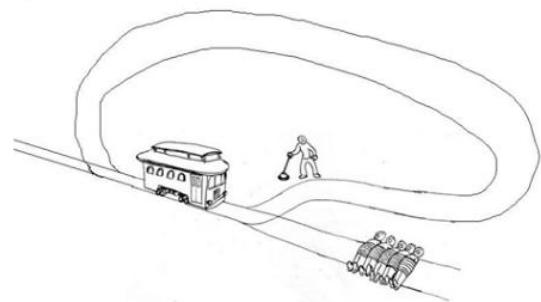
## Principle 19, Periodic Action



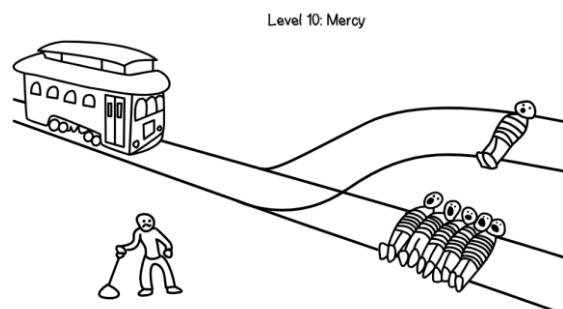
## Principle 20, Continuity Of Useful Action

### Sisyphus Trolley Problem

The lever only changes the course of the track for 5 seconds, before switching back to the first path, where it will kill 5 people. You must keep pulling the lever in order to save these people (neither you nor the captives need to sleep or eat coz this is a greek myth or something). There is no one else nearby, and no way of leaving or reaching help. Do you keep pulling the lever in the hope that somehow these circumstances will change, or do you decide that this is an inherently futile act and that to keep all of you in this state of imprisoned limbo for all eternity was more cruel than death?



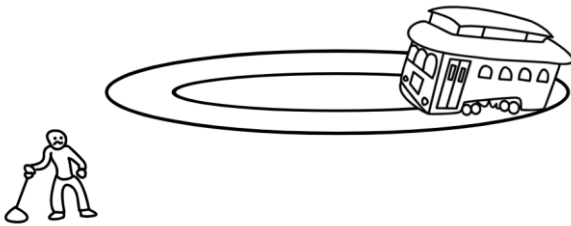
## Principle 21, Skipping



(Oh no! A trolley is heading towards 5 people. The lever just speeds up the trolley, which might make it less painful. What do you do?)

## Principle 22, Blessing-In-Disguise

Level 24: Eternity

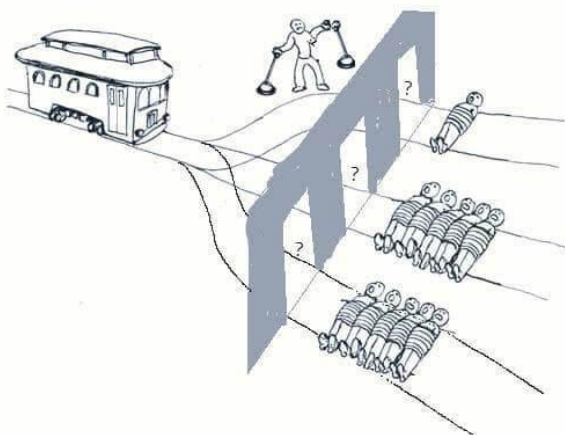


(Oh no! Due to a construction error, a trolley is stuck in an eternal loop. If you pull the lever the trolley will explode, and if you don't the trolley and its passengers will go in circles for eternity. What do you do?)

## Principle 23, Feedback

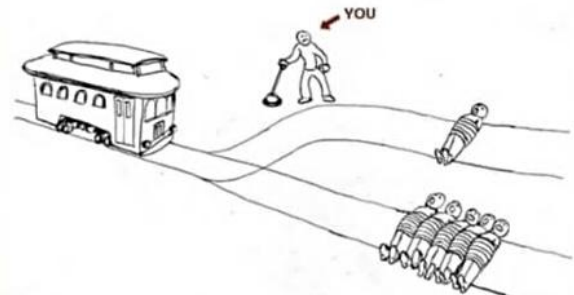
The Monty Trolley Problem

You are forced to blindly choose a path for a trolley to travel down, knowing one has only one person tied to it and the other two have five. As the trolley approaches, one pathway, which you did not choose, is revealed to you to have 5 people tied to it. Is it in your moral best interest to switch the tracks to the unknown path that you did not originally choose?

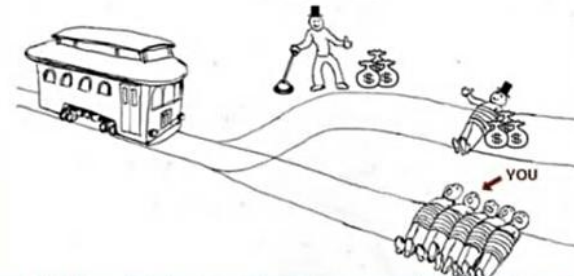


## Principle 24, Intermediary

*How you imagine the trolley problem*

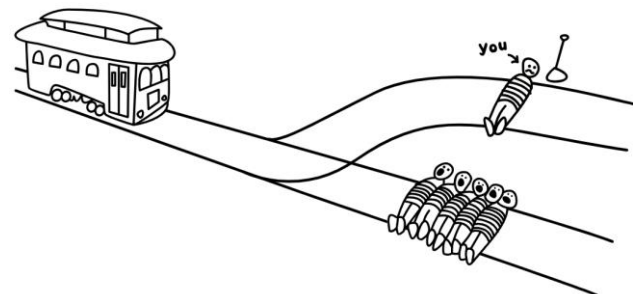


*How it's actually going to be*



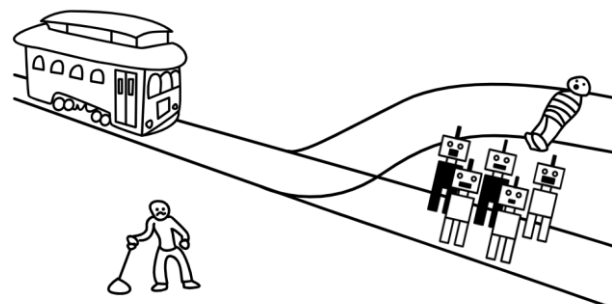
## Principle 25, Self-Service

Level 4: You



## Principle 26, Copying

Level 18: I am Robot



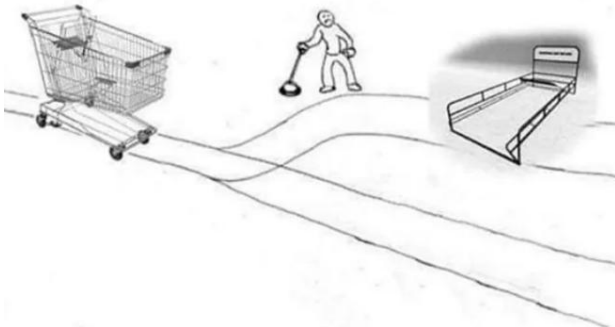
The 5 Sentient Robots Problem...



## Principle 27, Cheap Disposable

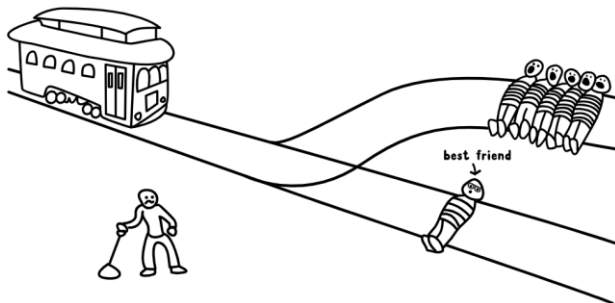
**There is no dire emergency.**

**Do you accept your duty to return the cart even though you gain nothing?**



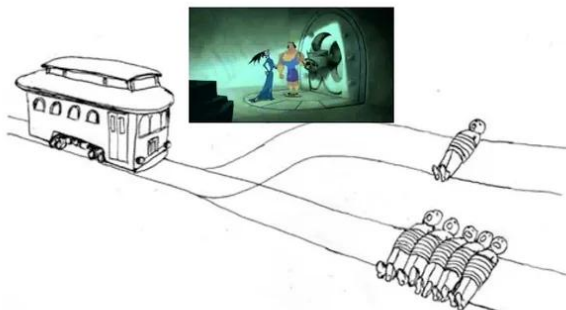
## Principle 28, Mechanics Substitution ('Emotional Fields')

Level 12: Best Friend



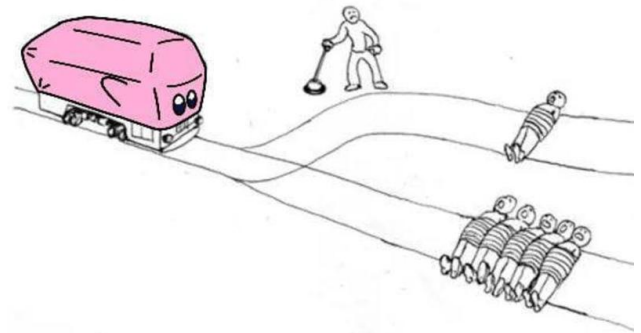
(Oh no! A trolley is heading towards your best friend. You can pull the lever to divert it to the other track, killing 5 strangers instead. What do you do?)

## Principle 29, Pneumatics & Hydraulics



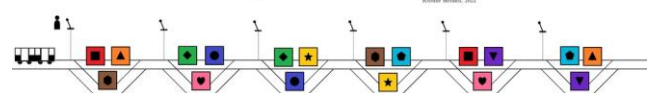
You are Yzma. If you do nothing, the trolley will run over five people. If you direct Kronk to pull the lever, the trolley will be diverted and only run over one person. However, if Kronk pulls the wrong lever, you will fall into a river filled with deadly crocodiles. What will you do?

## Principle 30, Flexible Shells & Thin Films



## Principle 31, Porous Materials/Holes

The Decoy Boxes Trolley Problem

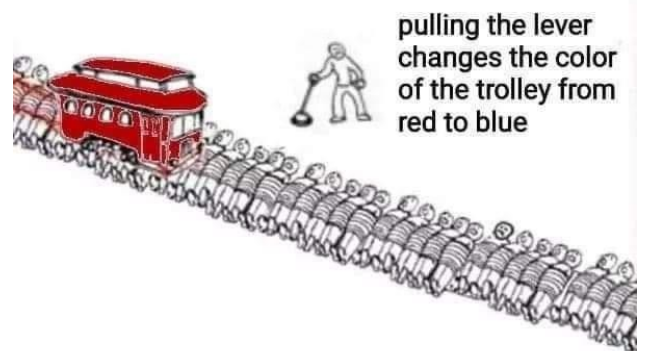


A mad philosopher and puzzler tied 9 people to the track, then covered them with large, opaque, coloured boxes, along with 9 extra matching decoys. For each pair of boxes of the same colour, only one of them has a person inside it, while the other box is empty.

A trolley is approaching at full speed, presumably also the work of the mad philosopher and puzzler. You see 6 levers, each controlling a split in the track. For each junction, not pulling the lever loads the trolley to crash into two boxes, while pulling the lever diverts the trolley onto the side path, where it will only hit one box then return to the main track, but you will be directly responsible for it.

You see that you have enough time to reach all 6 levers, plus some extra for you to be able to work through the logic of this situation. However, it is definitely not enough time for you check the boxes and rescue them out of their boxes. What will you do?

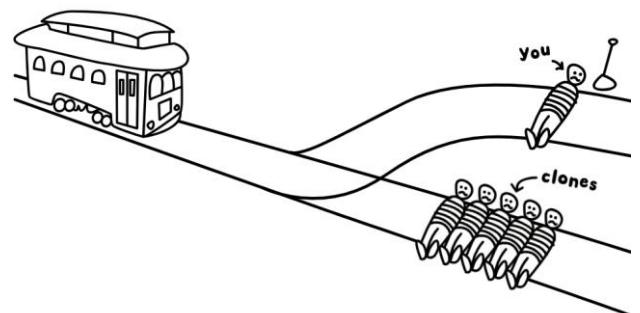
## Principle 32, Colour Changes



pulling the lever changes the color of the trolley from red to blue

## Principle 33, Homogeneity

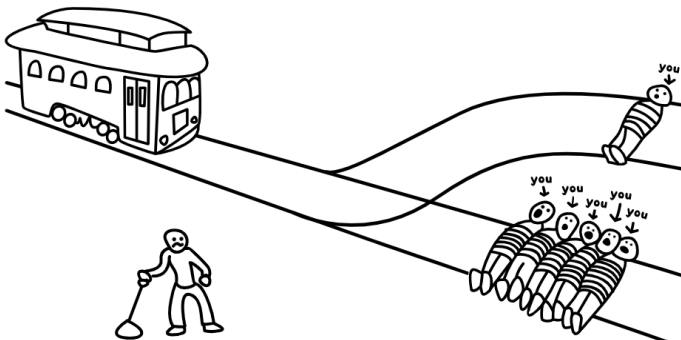
Level 16: Clones



(Oh no! A trolley is barreling towards 5 identical clones of you. You can pull the lever to divert it to the other track, sacrificing yourself instead. What do you do?)

## Principle 34, Discarding & Recovering

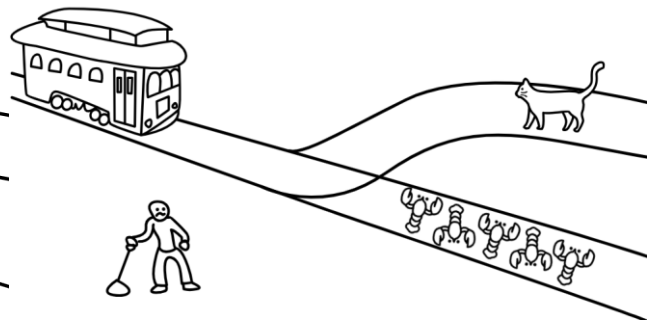
Level 21: Reincarnation



(Oh no! You're a reincarnated being who will eventually be reincarnated as every person in this classic trolley problem. What do you do?)

## Principle 37, Relative Change

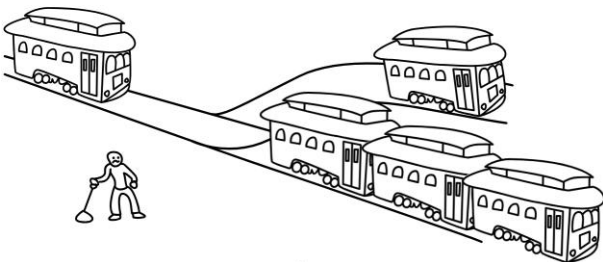
Level 7: Levels of sentence



(Oh no! A trolley is heading towards 5 lobsters. You can pull the lever to divert it to the other track, running over a cat instead. What do you do?)

## Principle 35, Parameter Changes

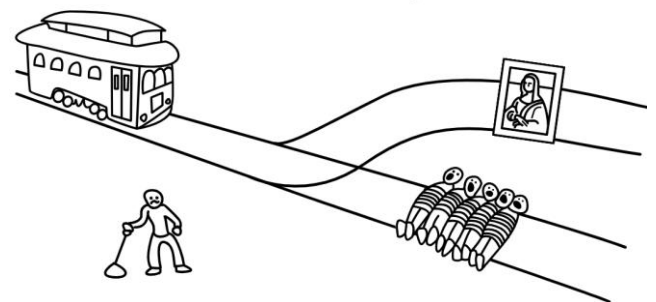
Level 19: Economic Damage



(Oh no! A trolley is heading towards 3 empty trolleys worth \$900,000. You can pull the lever to divert it to the other track, hitting 1 empty trolley worth \$300,000 instead. What do you do?)

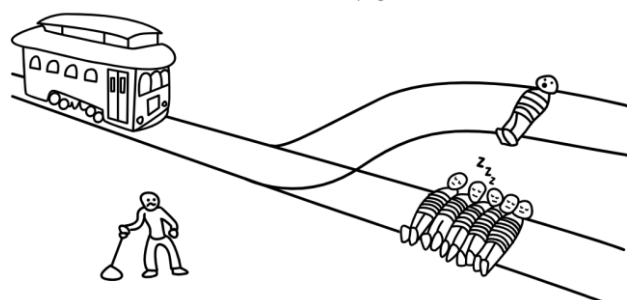
## Principle 38, Enriched Atmosphere

Level 5: Priceless Painting



## Principle 39, Inert Atmosphere

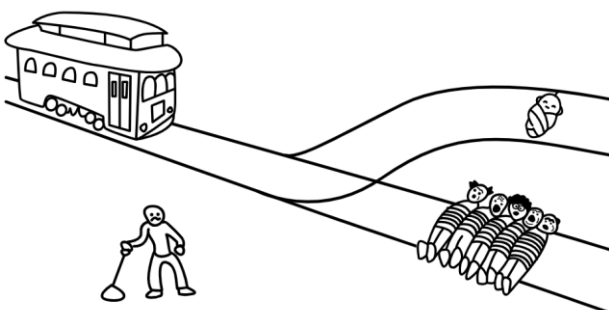
Level 8: Sleeping



(Oh no! A trolley is heading towards 5 people who are sleeping and won't feel pain. You can pull the lever to divert it to the other track, running over someone who is wide awake instead. What do you do?)

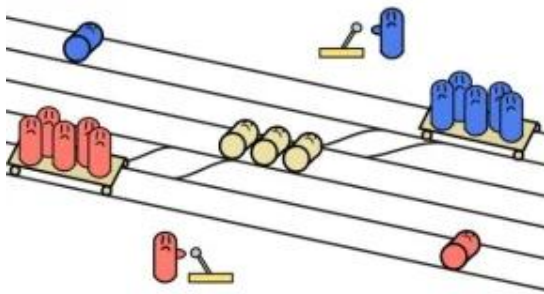
## Principle 36, Phase Transition

Level 15: Age



(Oh no! A trolley is heading towards 5 elderly people. You can pull the lever to divert it to the other track, running over a baby instead. What do you do?)

## Principle 40, Composite



 traceexcalibur

### INTRODUCING: THE PRISONER'S TROLLEY PROBLEMMA

A trolley full of your loved ones is heading down the tracks and will hit another loved one. If you redirect it, it will hit three strangers, but all of your loved ones will be fine. However, there is another person on the other side of the tracks facing the same problem. If you both choose to redirect the trolleys, they will crash in the middle, killing almost everyone.

The least amount of people will die if you do nothing and allow a loved one to die, the best-case scenario for you will occur if you pull your lever and the other person does not pull theirs, and the worst-case scenario will occur if you *both* pull your levers.

What do you do???

 argumate

good lord

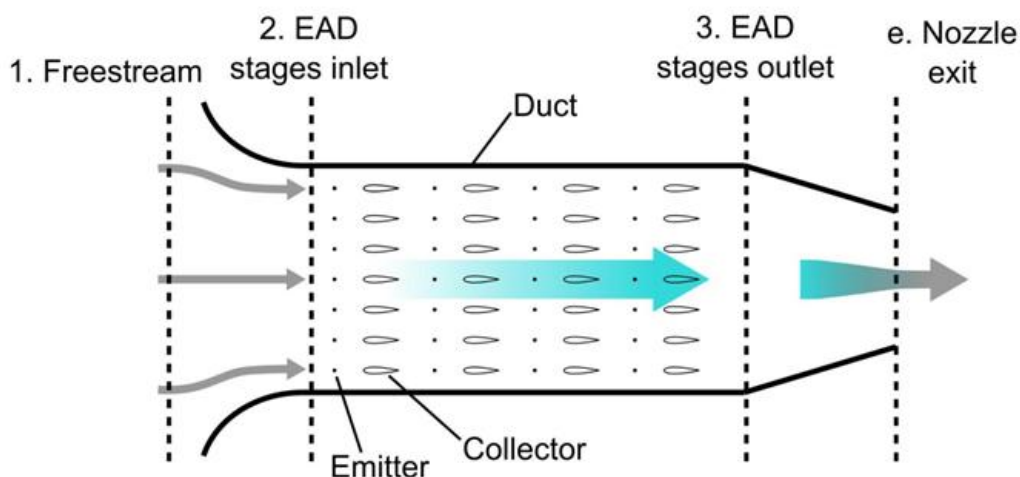
 uncertainkitten

Philosophy should be banned.



Congratulations, you have solved philosophy!

## Patent of the Month – Electroaerodynamic Thrusters



Another one we've been tracking for some time. Electroaerodynamic thrusters. Who wouldn't want to know about no-moving parts, silent propulsion technology, right? The technology behind electrically driven ion lifters has been more or less understood since the 1920s. More commonly known as "ionic wind," the physics behind the effect is "a physical principle... that can be produced when a current is passed between a thin and a thick electrode. If enough voltage is applied, the air in between the electrodes can produce enough thrust to propel a small aircraft."

Unfortunately, the power requirements of ion lifters have prevented any real-world applications of the technology beyond hobby demonstrators. That's mainly because ion lifters require a large, heavy power source that must remain on the ground, with the lifter tethered to that power source. A 2006 saucer-shaped invention known as the Wingless Electromagnetic Air Vehicle briefly hovered, but as of 2022, no applications of this or any other practical design were publicly available.

In 2018, MIT researchers broke through the critical power-to-weight barrier by flying the first untethered electroaerodynamic powered airplane across the length of a 60m indoor gym. That likely helped the researchers behind that pioneering effort to obtain a 2022 Innovative Advanced Concepts (NIAC) program grant from NASA, aimed at scaling their technology up even further.

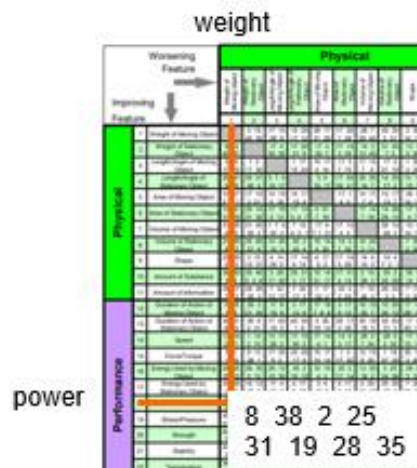
The critical breakthrough occurred years before the 2018 flight when MIT Professor Steven Barrett was wrestling with the power-to-weight issues that have kept untethered ionic wind lifters from taking flight. "It was a sleepless night in a hotel when I was jet-lagged, and I was thinking about this and started searching for ways it could be done," he recalled. "I did some back-of-the-envelope calculations and found that, yes, it might become a viable propulsion system."

2022 then saw an order of magnitude power/weight ratio improvement. And a patent application that was finally granted to Barrett and a trio of co-workers on 2 September as US12,404,844. Now called multi-staged ducted (MSD) thrusters, this innovative design may now even lead to Vertical Take-Off and Landing (VTOL) capable aircraft development. Here's what the inventors have to say about the problem needing to be solved:



*Electroaerodynamic (EAD) devices produce a flow of fluid, and corresponding thrust, using solid-state components and applied electric fields while being nearly silent and producing no combustion emissions. In addition, while not as powerful as combustion or propeller-based propulsion, EAD propulsion has also been proven capable of sustaining flight of heavier-than-air airplanes. The most successful EAD propulsion devices thus far have used a direct current (DC) corona discharge to produce ions and the same DC field to accelerate those ions to produce a thrust.*

Essentially, the problem is, as described in the pre-amble, a power-versus-weight contradiction. Here's what the Contradiction Matrix has to say about how others have solved similar attribute conflicts:



And here's how the new thruster design manages to create the order-of-magnitude improvement:

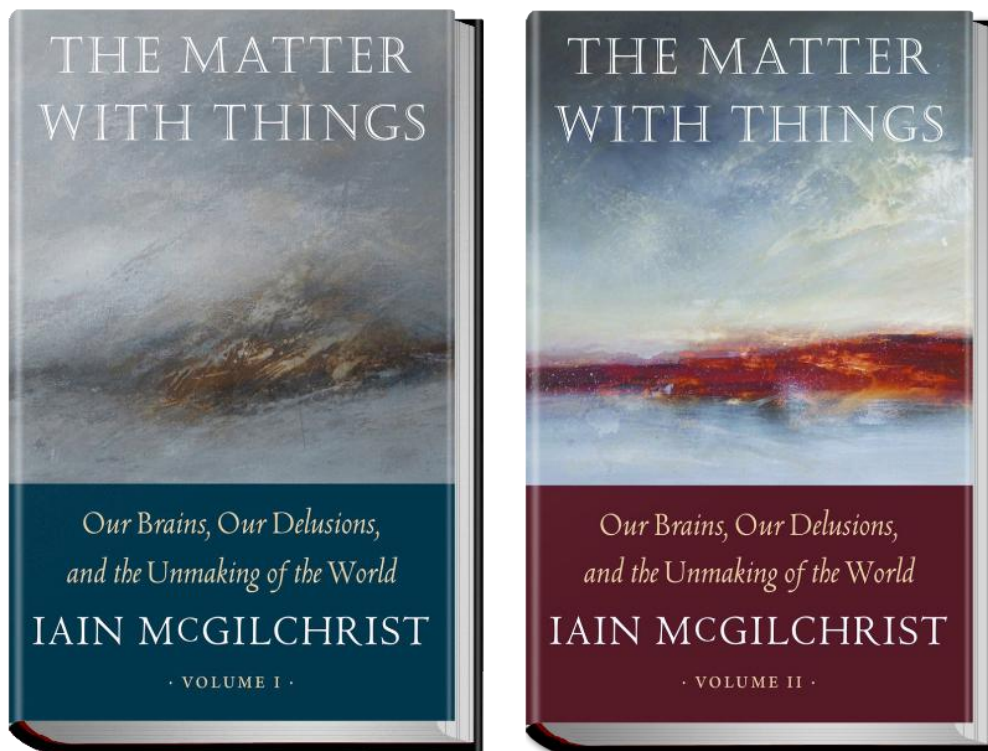
*An electroaerodynamic device comprising: a duct including an inlet and an outlet; and a [Principle2] plurality of serially arranged electroaerodynamic stages disposed in the duct along at least a portion of a length of the electroaerodynamic device, wherein each stage of the plurality of serially arranged electroaerodynamic stages includes a plurality of ion sources and a plurality of ion collectors distributed across at least a portion of a height of the electroaerodynamic device.*

Simple really: separate the ion source into multiple ion sources.

Also worth noting is the presence of Principle 28, Mechanics Substitution, down towards the end of the list. Obviously, electroaerodynamics is an example of a 'field' based solution, albeit this invention, of course, merely deployed existing knowledge of said field rather than inventing it.

Of more interest, perhaps, are some of the other Principles recommended by the Matrix. My money is on Principles 19, 31 and 25 (in that order) to provide the next order of magnitude advance, and then, hopefully, those ultra-reliable, silent delivery drones won't be too far behind...

## Best of the Month – The Matter With Things



*"It's very simple: this is one of the most important books ever published. And, yes, I do mean ever. It is a thrilling exposition of the nature of reality, and a devastating repudiation of the strident, banal orthodoxy that says it is childish and disreputable to believe that the world is alive with wonder and mystery... No one else could have written this book. McGilchrist's range is as vast as the subject – which is everything – demands. He is impeccably rigorous, fearlessly honest, and compellingly readable. Put everything else aside. Read this now to know what sort of creature you are and what sort of place you inhabit."*

Professor Charles Foster

Whatever your benchmarks for quality are, this month's best-of selection re-writes them. Ostensibly about left and right hemisphere's of the brain, *The Matter With Things* by Iain McGilchrist is far closer to a Theory Of Everything book. It's what happens when you pull at a thread and end up unravelling the whole tapestry. It re-defines scientific rigour. It re-defines connecting the dots. It re-defines insights-per-page. Which is quite something when you consider there's close to 1400 pages to get through. Not to mention the additional 200 pages of bibliography and references. Which is also to say that it's taken us several months to get here. I knew it was going to be Best of The Month when I was a quarter of the way through Volume 1. That was January. This is September and I just finished the final chapter. Admittedly, I was doing other things during the year, but even so, there were days when I was making so many notes, re-reading poetically beautiful passages, tweeting important sentences, trying to get hold of some of the more obscure references and reading them, and then working out how to weave McGilchrist's revelations into all the other things we're doing that I was barely managing to get through ten pages of the book.

In my mind it is nothing more and nothing less than a redefinition of the term magnum opus. Now I've read it, I can only say – despite the commitment it's going to take – if you



have any interest in the way the world works, you need to read it too. I'm conscious that might come across as the sort of 'well, he would say that wouldn't he' comment I normally run a mile from if someone says it to me. At the end of the day, that's not my problem. My hard yards are my hard yards. There are a million other ways to spend a couple of hundred hours of your life. I struggled with some of McGilchrist's thoughts on physics ('the physicists, don't know what's happening, and neither do I, although I have a couple of ideas'), and the final Chapter on religion and the sacred left me thinking (the point!) but far from convinced. There's nothing else I can say. Just leave you with a selection of some of the choicest innovation-relevant passages from the book. Most from McGilchrist, the others from some of the people he quotes in the book...  
(quotes all from McGilchrist and in page-order, unless otherwise specified)

"The right hemisphere... becomes crucially involved whenever the question involves meaning that is not revealed by simply following the rules."

"As with everything else to do with the right hemisphere... it is a matter not of manipulating the world, but of understanding it. And belonging to it. Indeed it is not so much a matter of cogito ergo sum, as sentio ergo sum."

"Just about everything that is said about the hemispheres in pop psychology is wrong because it rests on beliefs about what the hemispheres do, not about how they approach it: each does so in a consistently different way."

"Virtually all insights involved a change in understanding... a surprising number of insights were triggered by inconsistencies and contradictions. The insights that were triggered by contradictions seemed to depend on the person taking the anomalous data point seriously rather than attempting to explain it away."  
Klein & Jarosz (p255)

"The left hemisphere simply ignores, dismisses, and ultimately denies the existence of, anything it can't pin down and measure."

"An important part of the thesis both of this book and its predecessor is that we have come to see and inhabit the world in a most peculiar way: one whereby what can be offered by the right hemisphere, the one that sees and understands the most, has come to be neglected, with consequences that are far-reaching – indeed devastating."

"If the mind is functioning normally, with the right hemisphere as the Master, the working of the two hemispheres is experienced as integrated (according to the right hemisphere's integrative nature), if not, the division of, even antagonism between, these two modes of being is felt (according to the left hemisphere's 'either/or' character)."

"The most fundamental truths, of both a physical and psychical nature, can ultimately be expressed only in terms of poetry."

"The tendency is for the one that sees less (the emissary) to believe that he sees all, while the one that sees more (the Master) sees there are things he doesn't know; just as those that think they know it all know less than those who know they do not."

"Truth is the asymptotic limit of sensitive attempts to be responsible to our actual experience of the world... 'sensitive attempts to be responsible' means truth is the result of attention. (As opposed to inspection.) Of looking informed by love. Of really looking."  
Jan Zwicky

“It happened to him as it always happens to those who turn to science... simply to get an answer to an everyday question of life. Science answered thousands of other very subtle and ingenious questions... but not the one he was trying to solve.”

Count Leo Tolstoy

“The antagonism between science and metaphysics has, like all family quarrels, been disastrous.”

Alfred North Whitehead

“Science and metaphysics are inextricably united, and stand or fall together.”

K.G. Collingwood

“Explanation, science’s forte, is a subset – an explicit, rigorous, disciplined subset, but still a subset – of understanding. All understanding depends on metaphor. What we mean when we say we understand something is that we see it is like something else of which we are already prepared to say ‘I understand that’. That, in turn, we will have understood because we have likened it to something else we had previously understood, and so on. It’s metaphors all the way down.”

“In general, it is hoped that our road will lead to understanding; mostly it leads only to explanations. The difference between these two terms is also being forgotten... They are two very different things, for we understand very little about nature. Even the most exact of our exact sciences float above axiomatic abysses that cannot be explored. It is true, when one’s reason runs a fever, one believes, as in a dream, that this understanding can be grasped; but when one wakes up and the fever is gone, all one is left with are litanies of shallowness.”

Erwin Chargaff

“Metaphorically speaking, it is as though many biologists now reside in the left hemisphere’s hall of mirrors, and not only cannot find the way out, but have stopped being aware there’s a world outside to attain.”

“Specialisation has become an indispensable intellectual tool. But, being indispensable is not the same thing as being sufficient... the farther that specialisation is carried, the more the meaning of the phenomena is left unplumbed in the underexplored gaps between the specialists’ deep but narrow constricted borings. This method leaves critical questions not only unanswered but unasked.”

Arnold Toynbee

“Science, truly to be such, must centre not on descriptions and names but on principles – that is generalisations, theories, relationships, interconnections, explanations about and among the facts.”

George Gaylord Simpson

“If you’re working on something new, then you are necessarily an amateur”

John Archibald Wheeler

“As Richard Feynman said... ‘a very great deal more truth has become known than can be proven.’ And, might I add, a very great deal more falsehood can become known than can be disproved.”

“Imagination is not an impediment, but, on the contrary, a necessity for true knowledge of the world, for true understanding, and for the neglected goal of human life, wisdom.”

“Rationality is exclusive: reason is inclusive, balancing rationality with intuition, emotion and imagination. Emotion is not, as some Enlightenment philosophers thought, necessarily an impediment to reason, but an essential component of it.”

“What philosophy absolutely depends on, and without which none of its enterprises is worth the paper it is scribbled on, is a vision. You can be as clever as you like at finding technical objections to the vision of another, but unless you have the courage to stand by one of your own, you are not a philosopher – just a logic-chopper. And a vision never results from following procedures.”

“Our desire to calculate leads us to invent weights and measures to ‘evaluate’ issues before us. But numbers can never *evaluate* anything at all, precisely because they don’t deal with values. Even if you ‘evaluate’ something as ‘profitable’, the value is nowhere to be found in your measurement, which has no capacity to deal with value (although, subtly, it imports a pernicious value, that of the person who believes everything can be measured). The value is what is in the background here: your desire to make a lot of money.”

“A philosopher may see an important truth and yet be unable to demonstrate it by formal proof. But the fact that his arguments are not logical does nothing to detract from their rationality.”

Waismann

“Philosophy ought... to trust rather to the multitude and variety of its arguments than to the conclusiveness of any one. Its reasoning should form not a chain which is not stronger than its weakest link, but a cable whose fibres may be ever so slender, provided they are sufficiently numerous and intimately connected.”

C.S.Peirce

“Your ultimate goal might be happiness; and there are worse goals to have. The trouble is that, with all respect to the US constitution, happiness cannot be pursued. People who pursue happiness find that it constantly eludes their grasp, like the bunch of grapes before the outstretched hand of Tantalus. Just as the harder we pursue sleep the more it evades us. Some truths are less self-evident than others (all the true ones, by the way).”

“In the first three levels of skill acquisition, algorithms are overall more helpful than not: in the highest two they actually impede excellence. You shouldn’t break the rules until the rules have become second nature – but then you must sometimes break the rules if you are to be successful and excel at what you do.”

“The true method of discovery is like the flight of an aeroplane. It starts from the ground of particular observation; it makes a flight in the thin air of imaginative generalisation; it again lands for renewed observation rendered acute by rational interpretation.”

Whitehead

“All expressions of truth are rooted in metaphor... literal truth is a chimera.”

“There is a paradox entailed in paradox. What we call paradox is seen by the purely analytical mind as a sign of error somewhere – an error which it may be hard to identify, but which nonetheless exists, and must be flushed out and exposed, no doubt by further analysis. Meanwhile to the imaginative mind it may be a sign of quite the opposite: that we are at least approaching, in one of the two possible senses, a deeper level, not of error, but of truth.”

“There is no such thing in practice as a desire without a belief or a belief without a desire... We need to start seeing alienated boffins not as ‘unemotional’ but as people with over-abstracted metaphysical beliefs that interfere with their emotional integration. Similarly, an ‘emotional’ person has lots of beliefs which they are reasoning about a good deal: just on the basis of over-narrow assumptions. It is this false dichotomy between rationality and emotion that, I think, more than anything, is responsible for moral failures in the history of Western thought.”

Robert Ellis

“There is a difference between the irrational – something that is defined by its opposition to reason – and that which transcends, reaches beyond, rationality, where rationality no longer can hold sway. This is not to exalt the irrational, but to pay due respect to what one might call the ‘supra-rational’. In this realm lies intuition, and by one’s openness to it no claim is made that is somehow infallible.”

“In situations where there are no feasible solutions to a problem, the gathering and publication of performance data serves as a form of virtue signalling. There is no real progress to show, but the effort demonstrated in gathering and publicising the data satisfies a sense of moral earnestness. In lieu of real progress, the progress of measurement becomes a simulacrum of success.”

Jerry Muller

“The creative imagination neither ‘just’ sees or ‘just’ creates, but brings the new into existence through the combination of both, so rendering the authorship of what emerges ambiguous. And this is how we bring all our world into being: all human reality is an act of co-creation. It’s not that we make the world up; we respond more or less adequately to something greater than we are. The world emerges from the dipole. We half perceive, half create.”

“What, then, can the testimony of poets, composers, painters, mathematicians and scientists tell us about the business of creation? That a new, intrinsically beautiful, form, just as much in maths or physics as in the arts, is sensed intuitively. That it is not seen precisely at first, and that the dragging of it into the realm of precision too early in order to work on it, brings the danger of its loss. That it takes back something from the realm of the worn and familiar, the wonder of which has been lost, and makes it live. Imagination is literally creative: it brings everything we can know into being for us – and it is only as it is for us that we can know anything at all.”

“Each truth conceals another, opposing, truth, and that becomes apparent as soon as we move from the abstract to a real world context. Moreover, we need *both* the vision that reveals separation *and* the vision that reveals union.”

“We should... ‘trust to the contradictions and see them *out*. Never annul one force to give supremacy to another. The contradiction itself *is* the reality in all its manifoldness... the more faithful [man] is to his perception of the contradiction, the more he is open to what there is for him to know... a contradiction that is faced leads to true knowledge.”

Alfred Kazin

“What we get when we become unaware of the neglected – that is to say, opposing – truths inherent in our position is extremism. We yield power to the dark side by ignoring it: by acknowledging it we free ourselves from its stranglehold.”

“The inhibitory action of the corpus callosum enables the human condition. Delimitation is what makes something exist. Friction, for example, the very constraint on movement is

also what makes movement possible at all. In excess, true, we are immobilised; yet so we are in its absence. There is nothing to push against.”

“The imagination thrives on the implicit, and is deadened by the explicit. The explicit is single: the implicit is coming together of opposites, and requires the simultaneous presence and absence of whatever is being gestured towards. We may become more aware of something if it is partially eclipsed, while a pure manifestation would not have achieved its end.”

“The principle for division and the principle for union need to be brought together, not divided. We need not *either* both/and *or* either/or, but *both* both/and *and* either/or. We need not non-duality only, but the non-duality of duality and non-duality.”

“What happens when a new work of art is created is something that happens simultaneously to all the works of art that preceded it. The existing monuments form an ideal order among themselves, which is modified by the introduction of the new (the really new) work of art among them – the relations, proportions, values of each work of art towards the whole are readjusted... Whoever has approved this idea of order, of the form of European, of English literature will not find it preposterous that the past should be altered by the present as much as the present is directed by the past.”

T.S.Eliot

“Because we think of time as a ‘thing’ to be filled with other ‘things’ we foreground it... We hasten always to pack more in, and often seeking to do (but it cannot truly be done) as many things as we can at the same time. It leads us to feel we are always running against the clock, running after thing, and snatching them hastily, putting them in our little – always too little – bag of time. Time, however, does not work like this. The more we hurry, the more it hurries too. The more we try to do thing at once, the less they mean, the less pleasurable they are, the less time we have, and the less we are alive. For we are never really *there*, but forever in the past or the future.”

“There are not things that flow, but there is just – flow, which manifests as things flowing; it’s the flowing that is the ultimate reality.”

“Operations of thought are like cavalry charges in a battle – they are strictly limited in number, they require fresh horses, and must only be made at decisive moments.”

Alfred North Whitehead

“The re-admission of the observer’s consciousness into the description of the cosmos is a change of unequalled significance in the history of science since its banishment in the seventeenth century... that exile enabled us to become hugely, indisputably, powerful; but at the price of a lack of understanding of what it is we had power over.”

“The main claim is that value, whether it is truth, goodness or beauty, is not, as our culture has come to regard it, and ‘add-on’, a human intervention, some sort of extra that is not intrinsic to the nature of the cosmos, but is, rather, itself constitutive of the cosmos and is discovered by, and disclosed in, the encounter of life (and not just human life) with whatever it is that exists. The attendant claim is that the encounter is best served – indeed, served only – by the right hemisphere, optimally when it is assisted by the left; and if, on the contrary, the left hemisphere usurps the right hemisphere and ‘goes it alone’, it will not only fail to comprehend what is true, good or beautiful, but, by misconceiving it, helps to destroy it.”



“For the left hemisphere, value is something we *invent*; which is *separate* from and, as it were, painted onto the world; and whose function is *utility*. For the right hemisphere, on the other hand, value is something *intrinsic* to the cosmos; which is *disclosed* and responded to in a pre-cognitive take on the *Gestalt*; and is not, other than incidentally, in service of anything else.”

“...it is not surprising that a mass of research of differing kinds suggests strongly that the right hemisphere is more important for morality... It takes into account intention and context.”

“Utilitarianism tends to lead to the overvaluing of individualistic pleasure and individualistic determination, otherwise known as autonomy. While each is a reasonable enough goal, each needs to be tempered with other considerations, since unmitigated pursuit of either is not only bad for society but bad for the individual. A pleasure-filled life is not the same as a happy life, and a happy life is not the same as a meaningful life.”

“Devoid of procedures that could ideally lead to the one correct answer, the left hemisphere is lost. But that is the very nature and purpose of judgment: it introduces a concept that is capable, precisely, of going beyond rules. The claim is not that it is impregnable, merely that it is better than any other option. The price of certainty is absurdity; the prize of uncertainty is wisdom.”

“According to the left hemisphere’s model of reality, it is the author of all its experience, so that goodness, like truth, is its own invention. In intuiting, by contrast, what is good, the right hemisphere makes room for the idea that something that is not its own invention, but part of the order of things, is being disclosed to us. It creates the disposition (of humility, love and reverence) that allows it to respond to the good that is, I suggest, in some form constitutive of the cosmos, as is the consciousness that makes possible its apprehension, its intuition and its disclosure in the world.”

“Starting from first principles, the essence of beauty is harmony, including its judicious violations: appreciation not of things, but the relations between things that are simultaneously similar but different. This is a strength of the right hemisphere.”

“On first principles, we would expect a preference for the perfect over the imperfect, and the symmetrical over the asymmetrical. (Certainly this would be the case if beauty was just an aid to mate selection,) What we find, though, is that beauty often attends a coupling of symmetry with asymmetry, of perfection with imperfection: and that these couplings are themselves asymmetrical, as in the case of the brain hemispheres, one element being capable of incorporating its opposite, while the other cannot.”

“Contradiction would have to be taken as the profounder determination and most characteristic of essence. For as against contradiction, identity is merely the determination of the simple immediate, of dead being: but contradiction is the root of all movement and vitality; it is only in so far as something has a contradiction within it that it moves, has an urge and activity.”

Hegel

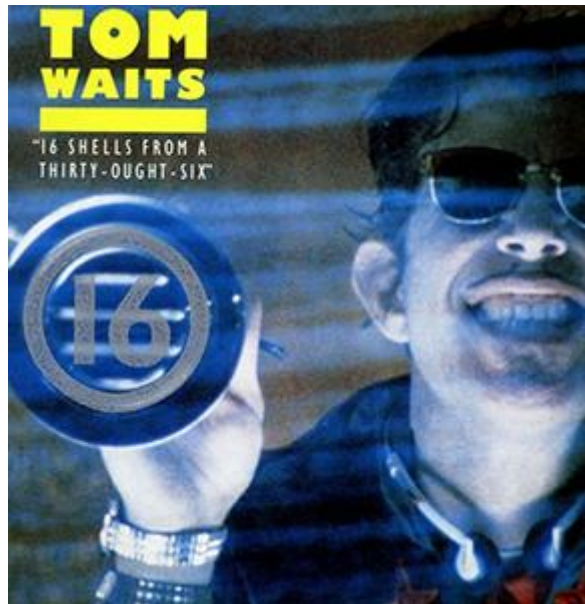
And, finally, these two from the Epilogue at the end of the book:

“We exist in the world, of course, but we no longer *belong* in this world – or any world worthy of the name. We have unmade the world. This is entirely new in the history of humanity and it is impossible to exaggerate its significance.”



“...we have succumbed twice in the West (at the end of the Greek and Roman civilisations) and are now succumbing for the third time, to the temptation to see the world only through the eyes of the left hemisphere emissary. In the past this has coincided with the over-reaching of an empire, as today, and the collapse of a civilisation, as I fear awaits us tomorrow. But never has the hold of the left hemisphere on us been more complete than it is today. Its form of attention to the world and the way of being in it confronts us wherever we look. The sword must be turned around if we are to survive.”

## Wow In Music – Sixteen Shells From A Thirty-Ought-Six



There are two Tom Waits. Before *Swordfishtrombones* Tom, and After *Swordfishtrombones* Tom. *Swordfishtrombones* is his eighth studio album. It was released in 1983 on Island Records. It was also the first album that Waits self-produced. Which probably explains part of the sea-change in sound. Pre-*Swordfish* Tom wrote conventional piano-based, melodic songs. Post-*Swordfish* Tom parked the piano, and most of the melody and swapped them for unusual instrumentation and a somewhat more abstract and experimental rock approach.

The critics, judging by the album reviews, liked post-*Swordfish* Tom better. *Swordfishtrombones* was ranked the second best album of 1983 by NME. In 1989, Spin named *Swordfishtrombones* the second greatest album of all time. Pitchfork ranked it at number 11 in its 2002 list of the best albums of the 1980s. In 2006, Q listed it as the 36th best album of the 1980s, while in 2012, Slant Magazine listed it as the decade's 26th best album. In 2000, it was voted number 374 in Colin Larkin's All Time Top 1000 Albums. Elvis Costello included *Swordfishtrombones* on his list of essential albums, highlighting "In the Neighborhood" and our featured song this month, "16 Shells From a Thirty-Ought-Six". Inauspiciously placed as track five on the first side of the album.

Thanks mainly to the NME ranking, I bought the album. To say that it required me to recalibrate my understanding and appreciation of music was something of an understatement. 16 Shells was the first track that gelled, which is somewhat ironic given that it farther away from pre-*Swordfish* Tom than almost anything else on the album. What I knew for sure from the getgo was that I was utterly transfixed by the brake drum that gives the song its 'hook'. And when I say "brake drum," I don't mean a regular percussion instrument, I mean, the brake drum that helps your car stop in a timely fashion.

Said brake drum was hit at seemingly random intervals over a shuffling rhythm from drummer Stephen Taylor Arivzu Hodges and bassist Larry Taylor, accompanied by weird cool rhythm guitar from Fred Tackett and the occasional held out trombone line from Joe Romano. Also being hit at random intervals – by Victor Feldman, the brake drummer – an actual percussion device called a bell plate.

For those that don't know, Victor Feldman was the session percussionist pretty much from the moment he left his UK home and emigrated to the US, up to his passing in 1987. If Victor Feldman was on the list of musicians playing on an album, you knew it was a safe bet.

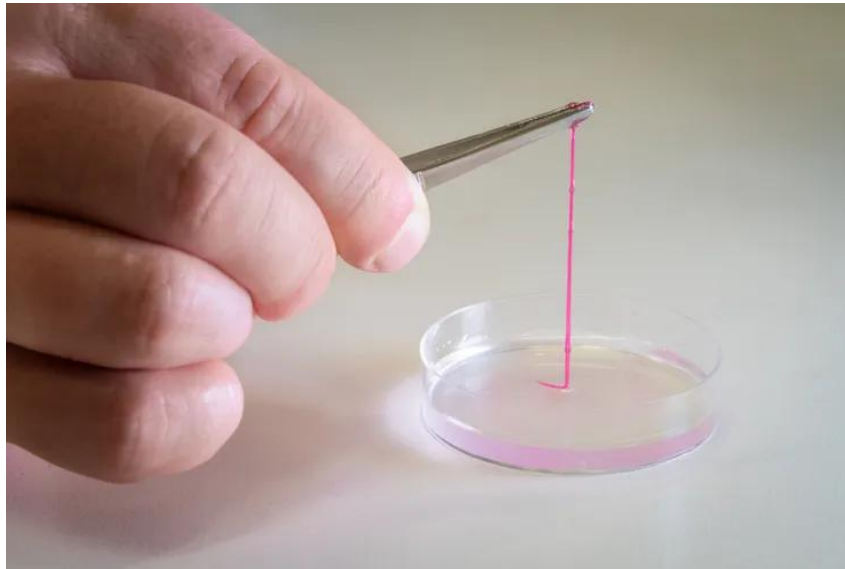
That said, I'm still intrigued by what Mr Feldman thought about Tom's wishes for the rhythmic sound of Swordfishtrombones. Whatever Waits said can't have sounded right. Ahead of the beat, behind the beat... is there even a beat? But the result probably couldn't have been anything else. It's Principle 16 'randomness' quickly became the new version of syncopation. It still sets the standard today.

With Waits yelling from the next holler about mules, Corvettes, skinnybone trees and the Washburn jail, "16 Shells from a Thirty-Ought Six" was lyrically almost as 'random-not-random' as Feldman's percussion. It too still sets the standard today. And that standard is this:

I'm gonna whittle you into kind [donk] lin'  
Black crow, six[donk] teen shells from a thirty-ought-six  
Whittle you into kindlin' [donk]  
Black crow, sixteen shells from a thirty-ought-[donk]-six

Donk.

## Investments – Skin In A Syringe



Researchers have created what could be called “skin in a syringe”. The gel containing live cells can be 3D printed into a skin transplant, as shown in a study conducted on mice. This technology may lead to new ways to treat burns and severe wounds. The study was led from the Centre for Disaster Medicine and Traumatology and Linköping University.

As long as we have a healthy skin, we do not give it much thought. However, if we get major wounds or other injuries, it becomes clear that the skin is the body’s protection from the outside world. Helping the body restore the skin barrier after a serious burn can therefore be a matter of life and death.

Large burns are often treated by transplanting a thin layer of the top part of the skin, the epidermis. This is basically composed of a single cell type. Transplanting only this part of the skin leads to severe scarring.

### **"Skin in a syringe"**

Under the epidermis there is a thicker and more advanced layer of skin called the dermis. It has blood vessels, nerves, hair follicles and other structures necessary for skin function and elasticity. However, transplanting also the dermis is rarely an option, as the procedure leaves a wound as large as the wound to be healed.

The trick is to create new skin that does not become scar tissue but a functioning dermis.

“The dermis is so complicated that we can’t grow it in a lab. We don’t even know what all its components are. That’s why we, and many others, think that we could possibly transplant the building blocks and then let the body make the dermis itself,” says Johan Junker, researcher at the Swedish Center for Disaster Medicine and Traumatology and docent in plastic surgery at Linköping University, who led the study published in *Advanced Healthcare Materials*

The most common cell type in the dermis, the connective tissue cell or fibroblast, is easy to remove from the body and grow in a lab. The connective tissue cell also has the advantage of being able to develop into more specialised cell types depending on what is needed. The researchers behind the study provide a scaffold by having the cells grow on

tiny, porous beads of gelatine, a substance similar to skin collagen. But a liquid containing these beads poured on a wound will not stay there.

The researchers' solution to the problem is mixing the gelatine beads with a gel consisting of another body-specific substance, hyaluronic acid. When the beads and gel are mixed, they are connected using what is known as click chemistry. The result is a gel that, somewhat simplified, can be called skin in a syringe.

"The gel has a special feature that means that it becomes liquid when exposed to light pressure. You can use a syringe to apply it to a wound, for example, and once applied it becomes gel-like again. This also makes it possible to 3D print the gel with the cells in it," says Daniel Aili, professor of molecular physics at Linköping University, who led the study together with Johan Junker.

### **3D-printed transplant**

In the current study, the researchers 3D-printed small pucks that were placed under the skin of mice. The results point to the potential of this technology to be used to grow the patient's own cells from a minimal skin biopsy, which are then 3D-printed into a graft and applied to the wound.

"We see that the cells survive and it's clear that they produce different substances that are needed to create new dermis. In addition, blood vessels are formed in the grafts, which is important for the tissue to survive in the body. We find this material very promising," says Johan Junker.

Blood vessels are key to a variety of applications for engineered tissue-like materials. Scientists can grow cells in three-dimensional materials that can be used to build organoids, i.e. mini versions of organs. But there is a bottleneck as concerns these tissue models; they lack blood vessels to transport oxygen and nutrients to the cells. This means that there is a limit to how large the structures can get before the cells at the centre die from oxygen and nutrient deficiency.

### **Step towards labgrown blood vessels**

The LiU researchers may be one step closer to solving the problem of blood vessel supply. In another article, also published in *Advanced Healthcare Materials*, the researchers describe a method for making threads from materials consisting of 98 per cent water, known as hydrogels.

"The hydrogel threads become quite elastic, so we can tie knots on them. We also show that they can be formed into mini-tubes, which we can pump fluid through or have blood vessel cells grow in," says Daniel Aili.

The mini-tubes, or the perfusable channels as the researchers also call them, open up new possibilities for the development of blood vessels for e.g. organoids.

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# Generational Cycles – New Beginnings: CBGBs, Suffering & Sur/Logic

This is a copy of the paper presented at the 2025 Innovation In Music Conference held at Bath Spa University in the UK.

## Abstract

*How to predict the future of the music industry and its myriad components? How is the emergence of generative AI likely to impact the industry? How is the current global omni-crisis likely to impact the industry? The aim of this paper is to explore these questions and to make predictions for the next 10-20 years. The current state of the art in terms of tools and methods for doing the future prediction job are, to say the least, dysfunctional. The paper describes emerging processes aimed at making step-change advances on the inadequate state of the art. The primary focus is on tools and methods for getting the most challenging – timing – aspect of the innovation equation right. Commensurate with the knowledge that in any complex system, everything is connected to everything else, answering the timing question is shown to inevitably require consideration of all the other contributing factors that form surrounding eco-systems. Specifically, in this case, that will mean, firstly, examination of the first principles underpinning the timing question, and then an exploration into how best to integrate sur/logic solutions and suffering into the innovator's journey.*

## Introduction

The rapid emergence and evolution of generative AIs in the last few years, while they might not yet have sparked an innovation revolution, have certainly generated a lot of noise. Several authors, for example, have made claims that they have successfully used AI to copyright 'every' melody<sup>1</sup>. Automated generation algorithms spitting out tens of billions of melodies. Purportedly, by publishing all 68 billion through a creative commons, to avoid future legal action in infringement cases.

The simultaneous strength and weakness of generative AIs is that they are fundamentally built on logic. Strength because, once coded, the established logic can easily compose 'every' melody. Weakness because, as any innovator knows, all breakthroughs start from a position of un-logic. Innovators challenge assumptions and break rules. Thus guaranteeing that, the moment someone claims to have invented 'everything', the next moment will see the emergence of an army of rule-breakers proving that there is still a vast new everything still to be invented.

Fortunately for the logical rule followers, society has evolved to a stage where, as discussed by Rory Sutherland, "it is easier to get fired for being illogical than for being unimaginative"<sup>2</sup>. Today's society, in other words, tends to favour the logical generative AI creator rather than the – often annoying – illogical rule-breakers. What this means in practice is that innovators are expected to endure often protracted periods of ridicule, rejection and resistance before they are allowed to succeed. The persistence required to endure the bad times is in effect a societal filter mechanism that, in theory at least, only allows the most persistent and – ideally – only the best 'illogical' ideas to succeed. Il faut souffrir. And that's why all traditional attempts to make the innovator's life easier end up achieving the precise opposite. Innovation comes from the poisonous, unpleasant cesspit of a CBGBs not through government grants and over-endowed benefactors.

That said, it is also increasingly fair to say that the more complex and interdependent the modern world becomes, the greater the level of persistence required by the would-be rule-breaking revolutionary. The amount of trial-and-error logic-breaking guesswork needed to become successful can now easily exceed the lifetime of any individual. There are millions of ways of being illogical that will create inferior solutions. On the other hand, a thirty-year

study of logic-breaking has now revealed the presence of a number of rules-for-breaking-rules well<sup>3</sup>. These meta-rules mean that innovation is not about being illogical but rather being sur-logical.

In theory, these sur/logic rules – less controversially, ‘heuristics’ – take a significant amount of risk out of the innovation challenge. When it comes to music, and especially popular music, however, being able to generate breakthrough solutions has historically been a relatively small component of the overall journey to a successful innovation attempt. Far more difficult is the challenge of timing. Whether the market is ready and willing to accept something new – a ‘new beginning’ for example, or a complete blank-slate re-boot – is dependent on a broad spectrum of cultural, economic, technological (e.g. generative AI), governance, commercial, fashion and individual personality traits. In the current economic climate, even the best forecasters and futurologists are not able to make meaningful predictions more than 400 days into the future<sup>4</sup>.

The aim of this paper is to explore emerging processes aimed at making step-change advances on this somewhat un-usable state of the art. The primary focus will be on tools and methods for getting the timing part of the innovation equation right. Commensurate with the knowledge that in any complex system, everything is connected to everything else, answering the timing question will inevitably require consideration of all the other contributing factors that form the surrounding eco-system. Specifically, in this case, that will mean, firstly, examination of the first principles underpinning the timing question, and then exploration of how best to integrate sur/logic solutions and suffering into the picture...

## **Innovation Timing First Principles**

According to Bill Gates, "we always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten." His formative role in the emergence of the change-at-the-speed-of-light ‘Information Age’ meant he was one of the first people to recognise that the world was non-linear. Actually, it has never been linear, but, prior to digital technologies, when change did happen it was generally slow enough that it *felt* linear. The biggest failing of futurologists is that linear extrapolation is still the main tool in the future prediction toolbox.

The reality is that the world is s-curve shaped<sup>5</sup>. When an inventor first discovers a novel – sur/logic – idea, they will struggle to improve all the things they need to improve before customers will buy it. If they are persistent, and possess sufficient resources to keep going, eventually they will encounter a tipping point<sup>6</sup>. This is the point that triggers the arrival of progressively larger numbers of customers and hence increasing revenues that will create a virtuous cycle of growth. Life becomes good. The innovator is making money, the enterprise grows. Fundamentally, however, that growth cannot last forever. Sooner or later a law of diminishing returns comes into play. Growth decreases and then plateaus and, unless the innovator does something about it, then begins a slide down an ever more slippery slope that will eventually become a tailspin. What goes up, must come down. Somewhere prior to the plateau, the smart innovator realises the only sensible way forward is to make a discontinuous jump to a different, better, solution. Except, it won't be better at first, it will be worse and will require a deal more suffering. And the cycle begins again. Suffer-Stride-Stuck-Sink. Innovate, repeat.

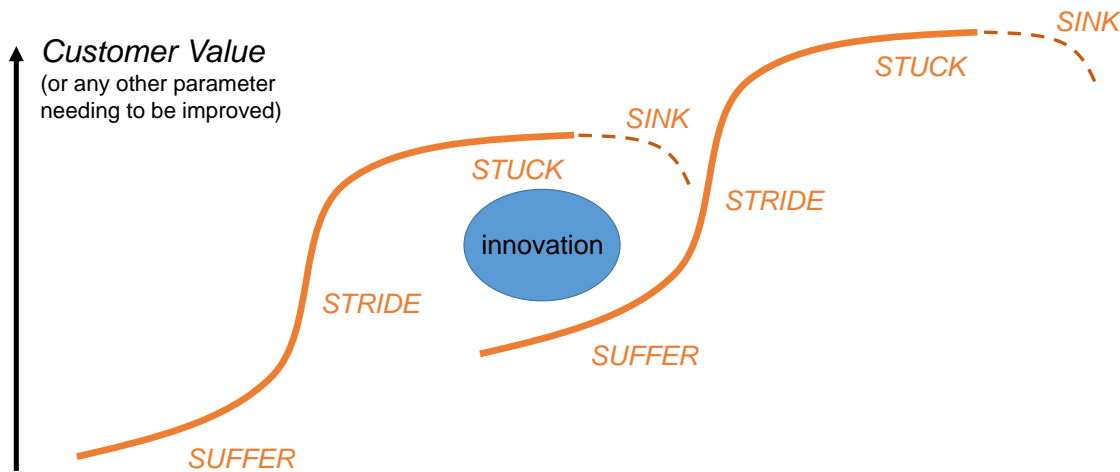


Figure 1. S-Curves And Discontinuous Change<sup>5</sup>.

The good news is the characteristics of the s-curve – Figure 1 – are universal and hence provide innovators with a map of where they are and what lies ahead. The bad news is that the speed at which the cycle plays out is highly dependent on a nested hierarchy of ecosystem effects that together make any kind of timing calculation fraught with uncertainties. Everything is connected to everything else, but some things inherently change faster than others: individual artists change faster than their audience; audiences change faster than record companies; record companies change faster than business law and governance; governance changes faster than culture. This hierarchy of inertia is typically known as pace-layering<sup>7</sup> – Figure 2.

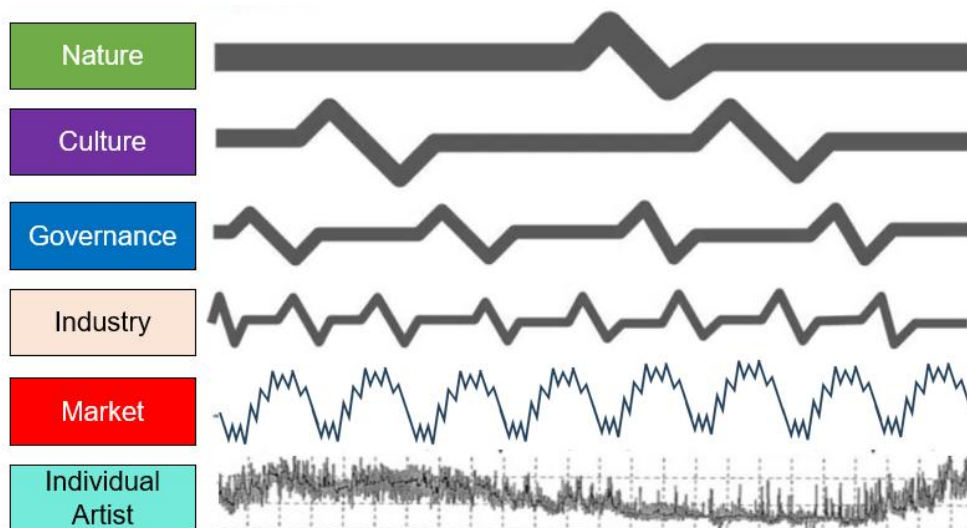


Figure 2. Pace-Layering And The Music Industry.

Each of the layers evolves at different rates, but all are evolving according to the periodic discontinuities inherent to the s-curve. Nature tends to be the slowest evolving layer in the hierarchy, but is still subject to non-linearities. It takes seven-hundred years for a forest to grow, but an afternoon for it to burn down. And, when it does, it is very likely to set in train a cascading series of other discontinuities at the lower layers of the hierarchy<sup>8</sup>.

Conversely, changes at the lower, faster levels of the hierarchy can occasionally have a Butterfly Effect-like impact on higher levels. As Margaret Mead famously said, “never underestimate the power of a small group of committed people to change the world. In fact, it is the only thing that ever has.” The assassination of JFK in 1963, for example, was

an untimely discontinuity for one individual, but it turned out to have a stark non-linear effect on American and global culture.

The point being that each layer has the potential to affect all the other layers, each of which needs to be taken into account if there is to be a meaningful calculation of the right timing for any given innovation attempt. Before attempting to conclude this paper with such an attempt, it is instructive to examine a number of discontinuity mini-case studies at different levels of the pace-layer hierarchy. Starting with an individual musician...

### Miles Davis

Many believe that the development of talent is a linear process. The reality again, however, is that talent development also follows the rule of the s-curve: technical proficiency playing an instrument, for example, will improve for a period but will inevitably eventually plateau and a state of 'stuckness' will arrive. Many musicians, when these periods occur, either give up their instrument, or more usually become comfortable with the knowledge that their progression has ended. This comfort is often supported by record companies. Their primary motivation being that, once an artist has tapped into a money-making formula, they should keep making more of the same music.

Some artists go along with the game and others don't. David Bowie and Madonna, for example, managed to convince their audiences and therefore record company that change was central to their 'brand' and so were allowed to keep moving forward. Or 'moving' at least. Then there are artists like Miles Davis. A man that didn't particularly care what the record company wanted but cared a lot about progress<sup>9</sup>. A man that forced himself and the artists around him through multiple re-inventions of the jazz genre – Figure 3.

Making even one step-change shift is a Hero's Journey<sup>10</sup>. Most entrepreneurs make one and decide it was enough. Rare individuals like Miles Davis put himself through the Hero's Journey trauma multiple times. Every individual has their own capacity to evolve and advance. Some evolve faster than others, but all are part of the potential Butterfly Effect at the bottom layer of the pace-layering story.

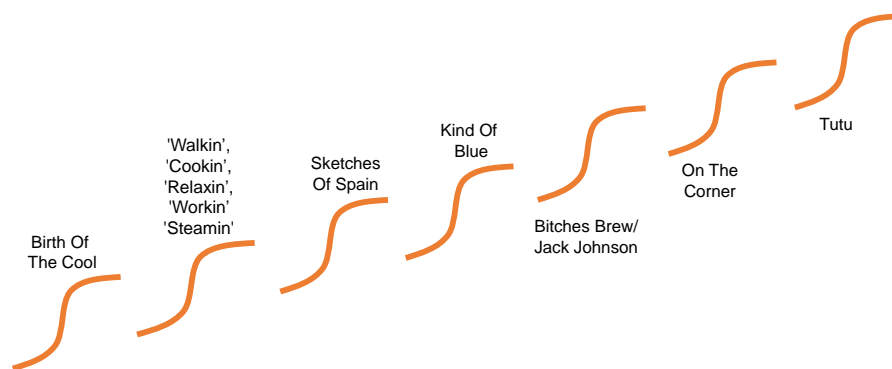


Figure 3. Miles Davis' Periodic Discontinuous Jump Re-Inventions.

### Cultural Generation Cycles

Mark Twain purportedly said, "history doesn't repeat itself, but it often rhymes", and in so doing, effectively prefaced the historical pattern finding work of Strauss & Howe in US in the 1990s<sup>11</sup>. The history of the US, of course, is relatively short and so finding a repeating 80-100 cycle across a period of not much more than four-hundred years may be seen as lacking any great statistical significance if it weren't for the fact that, thirty years after publication, attempts to invalidate the cycle they uncovered have singularly failed.

As described by Strauss & Howe, the cycle is one of periodic 'Crisis' periods. Neither is apparently aware of s-curves, but in effect what they found was that (American) society has evolved through a series of s-curves, each of between 80 and 100 years duration. Their 'Crisis' periods correspond to periods when society has reached the 'stuck' top of one s-curve and undergoes the discontinuous shift to the next s-curve. The focus of the pair's Fourth Turning book<sup>12</sup> was to warn of the imminent arrival of the next Crisis period. The previous ones being the Depression of the 1930s and WW2, before that the American Civil War, and before that the War Of Independence. There's no rule that says each Crisis period necessarily ends in armed conflict, just that for the previous three cycles that's what has happened.

One of the reasons the model has thus far not been able to be invalidated is because its foundations are (accidentally) consistent with the characteristics of any kind of complex adaptive system. The first of which is that behaviours are emergent. Some parents tend to over-protect their children, while others do the opposite. Oscillation between these two extremes creates the s-curve outcome, and as long as that under/over-nurture oscillation keeps taking place, the societal shifts that emerge will continue to rhyme.

The second is the recognition that events happen at random, but *society's reaction* to those events is not. Some events – like the assassination of JFK – take on great significance, while others fade into obscurity.

This meant it was possible to predict back in 2009<sup>13</sup> that society would be vulnerable to a trigger event around 2020, that would in effect push us off the current s-curve, and that the between-curve chaos would endure until around 2025-6, by which point, the mood of society would be a widespread craving for an end to the chaos. It wasn't possible to predict what the 2020 event would be, merely that, because society was at the top of its s-curve there would be multiple conflicts and contradictions and if any one of them ignited, it would tend to ignite other ones in a kind of domino effect. As it turns out, a global pandemic was the trigger event<sup>14</sup>. Amongst the global omni-crisis still in play at the time of writing, it is still no possible to predict what the specific Crisis-ending trigger will be, but that – domino effect again – the arrival of one, will trigger others. People have had enough and want life to revert to normal. Albeit a new kind of normal.

The fact that society is currently in a Crisis period – i.e. is between s-curves – provides a first clue that this is a time in history for new beginnings.

Figure 4, a summary of the overall generation cycle model, provides an opportunity to bring an increasing level of richness to the new beginnings clue. At the next level of detail, it was hypothesised that the 80-100year cycle time corresponded to four generation archetypes: Prophets, Nomads, Heroes and Artists. Again, consistent with complex systems and emergent behaviour, each archetype arises in part due to the part of the cycle they were born, and partly through the transfer of behaviours from parent to child: the way a child is raised by its parents will affect the way they will later raise their own. Add in the evergreen saying, "give me the child until he is 7 and I will show you the man", and a somewhat implausible idea perhaps begins to become something worth considering. Enough to provoke a twenty-five year 'via negativa' research that continues to confirm the validity of the model<sup>15</sup>.



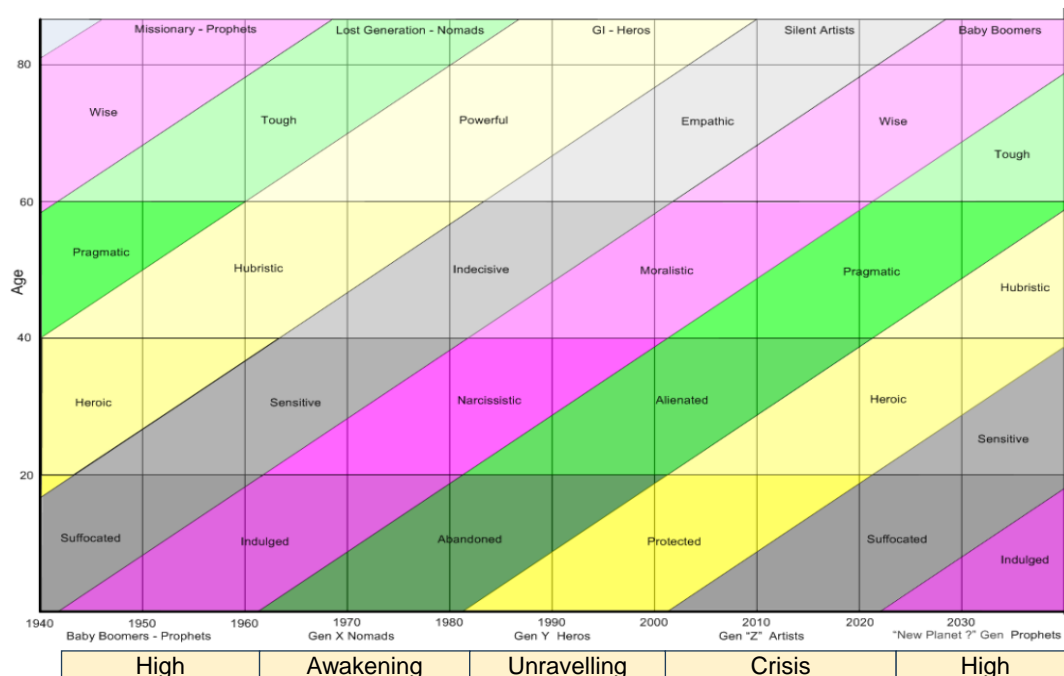


Figure 4. Generation Cycle Model (US/UK)<sup>13</sup>.

The full details of the Figure 4 model are described elsewhere<sup>13</sup> and are hence only the essential components germane to the topic here are discussed. What is relevant here as potential additional clues in the journey to make more resilient predictions about the future of music and the music industry:

- So-called 'Artist' generations are born during Crisis periods. The artist label comes from a life of 'suffocation' being raised during the Crisis leading to high levels of sensitivity in young adulthood. This is a generation that has very few real-world skills and hence tends to live the lives of spectators, reflecting on the world they see around them. As the name suggests, they are responsible for the creation of a high proportion of the great art, literature, film and music. With the four-generation repeating pattern, it is possible to examine previous Artist generations – e.g. the Silent Generation raised during the 1930s depression years and into WW2 – and project similar traits to the current cohort. From a musical perspective, the be-bop branch of jazz is an iconic example – combining high levels of technical proficiency with deep artistic vision. The current 'Generation Z' cohort is the emerging new Artist generation.
- At the same time Crisis helps spawn a new generation of Artists, older generations that have to live through the period with all the responsibilities of adulthood tend to have a very different view of the arts. Life is challenging enough and so rest and relaxation sees a craving for comfort and solace. Particularly when it comes to the music that people want to listen to. During the previous Crisis cycle, that came in the form of artists like Glen Miller and Vera Lynn. In the current Crisis it has arrived in the form of tribute acts – Figure 5 illustrates the sea-change shift in the calendars of live music venues. Back in the pre-Crisis year, 1998, the most prestigious venue in Bristol featured 17% tribute acts; by 2025 that figure had risen to 82%.
- Prophet generations are born into the 'High' period following the end of the Crisis period. The Baby Boomer generation represent the Prophets born in the wake of WW2. This generation has an 'indulged' childhood, which leads to strong opinions and narcissism during the adult years. Prophets seek to re-invent the world, and,

given the relative lack of authority of their parents, typically seek control. Artists like The Beatles, Rolling Stones, The Who, The Doors, Jimi Hendrix, Janis Joplin, Joni Mitchell, CSNY and the wave of 70s singer-songwriters characterize this generation.

- Nomad generations arrive through an 'abandoned' childhood (those narcissistic parents!) into an alienated adulthood. Whatever the previous generation did, this cohort is going to do the opposite. And so, the musical chops of progressive rock turns into two-chord thrashes and Pretty Vacant lyrics.
- "What happens when a new work of art is created is something that happens simultaneously to all the works of art that preceded it. The existing monuments form an ideal order among themselves, which is modified by the introduction of the new (the really new) work of art among them – the relations, proportions, values of each work of art towards the whole are readjusted... Whoever has approved this idea of order, of the form of European, of English literature will not find it preposterous that the past should be altered by the present as much as the present is directed by the past." T.S.Eliot<sup>16</sup>... who in effect reminds us that in characteristic everything-effects-everything-else manner, the generation cycle tends to be self-organising and self-repeating.



Figure 5. Tribute Act Presence 1998 versus 2025.

## Popular Music Fashion Cycles

By way of illustrating the pace-layering effect and interactions between the layers illustrated in Figure 2, if the Strauss/Howe generations model defines the driving cultural cycle of society, when it comes to the cascade down into markets and market patterns, what becomes clear in the world of popular music is that it follows a half-generation pattern – Figure 6. Popular music as we now recognise it, effectively emerged with the invention of the 'teenager' in the post-WW2 years. For the first time, young people had disposable income, and the music industry quickly worked out how to help them spend it. Typically (it does vary a little from one generation cohort to the next) the primary purchasing years for popular music tend to be 16-25 years. That age-band effectively

means, when examining the intersection of the diagonal generation boundary lines on Figure 4, that for each generation of listeners, there are two regimes<sup>17</sup>. Given that the artists creating the music tend to be a little older than those listening, for listeners in the first half of a cohort, the music they are listening to is being made by artists born into the previous generation (e.g. Elvis Presley and Buddy Holly (Artists) made music bought by The Beatles (Prophets). But then, for the second half of a generation of listeners, the music they're likely to buy is coming from older people from within the same cohort (e.g. younger GenX Nomads listening to music made by older GenXers, Radiohead).



Figure 6. Half-Generation Pattern In Popular Music Market.

### New Beginnings, Tabula Rasa & Sur/Logic

Having now outlined a foundation upon which to build better predictions of what the future holds, it becomes possible to speculate with more confidence about mechanisms for making the tides of history work for a prospective music industry innovator rather than against. The IIM conference in 2025 was themed around New Beginnings and Tabula Rasa, perhaps, considering the prevailing Crisis period, somewhat presciently. Cultural discontinuities are highly likely to create cascade effects to lower layers in the Figure 2 hierarchy. When a big system undergoes an s-curve shift, it tends to trigger knock-on effect in other layers, even if they are not at the top of *their* particular s-curve and thus aren't 'due' for a shift. Sometimes innovation happens proactively – an innovator decides to make a leap of faith – and sometimes reactively – the world changes and forces innovators to change what they're doing. The triggering event of the Crisis period climax – the Pearl Harbour moment – turned out to be the Covid-19 pandemic. Its arrival meant that musicians could no longer tour, and in many cases, could no longer even get together to record new music. Musicians, if they wanted to continue working, in true, 'Don't Let A Good Crisis Go To Waste' manner, needed to invent new ways of generating revenue. It was, and until such times as the Crisis period ends, continues to be the perfect time in history for New Beginnings. 'Beginnings' being the operative word. As suggested in Figure 6, listeners are tending towards comfort-providing recreation, and so any radical, step-change new beginning is likely to attract a small cohort of early adopter followers. The money, if there is sufficient will to keep going (more on that in the next section), will come later. This is consistent with the universal dynamic of the s-curve.

A useful mini example may be seen with the half-generation shift created by the arrival of Punk Rock in the mid-1970s. The pioneers of the genre – The Ramones, Richard Hell, Wayne County, The Dictators and other bands that homed in on CBGBs in New York – had little expectation of making money, and for the most part never did. Many of their names have been lost in the fog of the period. It's one thing to pioneer a new wave, quite another to ever make money from it.

Ironically no doubt for those bands that were there at the beginning, the CBGB band that did make it to the big prize was Blondie. They were viewed by the other bands as something of an embarrassment. Whether consciously or not – most likely very

consciously when they started working with star-maker pop producer Mike Chapman – Blondie’s career followed a well-trodden path in terms of generating success. Figure 7 shows how Blondie and other CBGB bands mapped onto the archetypal s-curve journey as it relates to financial reward:

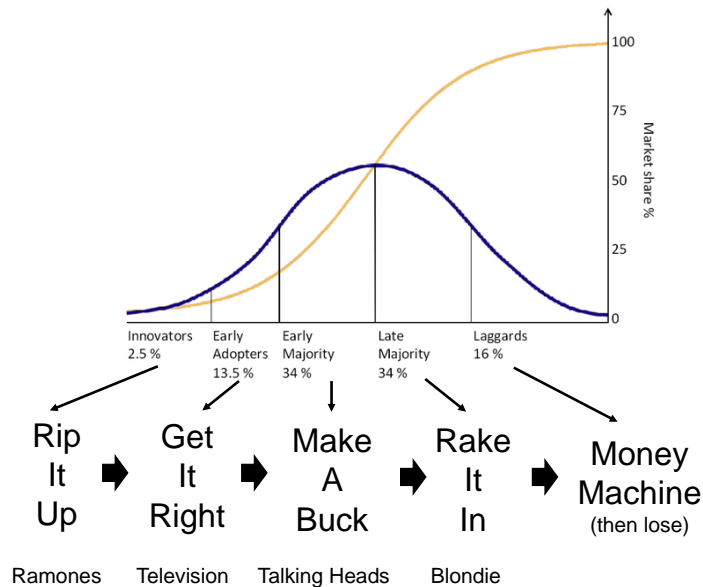


Figure 7. Fundamental Stages Of The S-curve Journey (CBGBs Examples).

Key to Blondie’s template-following success is recognition of the fact that New Beginnings is one thing, Tabula Rasa is quite another. The clear evidence from equivalent situations in other industries is that the ‘blank slate’ approach to innovation is one of the very best ways of losing money ever invented. Customers – whoever they may be – love new, but they also love familiar. When something completely new comes along (Segway, Sinclair C5, Webvan, Apple Newton, etc...), prospective customers might be attracted by the hype, but when it comes to knowing what the jobs the product is going to help them get done, and how, they are unable to make the necessary connections and hence don’t buy. Central to the success of the 2% of innovation attempts that prevail is the idea of an ‘adjacent possible’<sup>18</sup>. Creating a solution that has the right blend of familiarity and new. The punk purists offended by Blondie’s knack for melodic hooks and sing-along choruses, failed to see that this was precisely the kind of familiarity that caused millions of listeners to go out and buy a copy of *Parallel Lines*.

These ‘adjacent possibles’ almost always become the visible in the form of a contradiction – crudely, customers want ‘the same *and* different’. Contradictions are also what cause the top ‘stuck’ part of the s-curve to occur – there’s a desire to improve, but something arrives to prevent the improvement from happening. Solving contradictions demands that the logic of today is broken, and a new ‘better’ logic is generated. Typically, when it first appears, the new logic will appear very counter-intuitive and therefore prone to rejection by incumbent enterprises with vested interests in continuing to make profit from their existing ways of doing business. Counter-intuitive is seen as risky. Leaders want ‘proof’ that the proposed next-big-thing will indeed be big, and fundamentally there can never be any proof. And that then means risk. Enterprises with a lot to lose don’t like risk, which is why, more often than not, when breakthroughs arrive they come from outsiders and disruptors with nothing to lose. That said, previous work has demonstrated – through 11.5 million case study examples – that there are millions of way of generating logic-breaking solution ideas that are bad, but just a small number that will deliver success. There are, in



other words, rules for breaking rules and doing it well. They break today's logic to create tomorrows. Logic becomes sur/logic.

To all intents and purposes, the sur/logic law of the adjacent possible tell prospective innovators there is no such thing as a tabula rasa. Innovation World has no blank slates.

## **Suffering**

The main reason for selecting CBGBs as an exemplar of the s-curve road-to-success dynamic looks like is that, looking at photographs and descriptions from the artists and audiences that visited the venue in the 1970s was that it was somewhere close to being the sort of place a sane person would avoid at all costs. Cost, here, being the operative word. Start-ups and entrepreneurs typically start with little or no resources. If for no other reason that it forces them to become very inventive about not only how they survive from day-to-day, but also find time and energy to devote to their world-beating new thing.

The East Village of Manhattan, where CBGBs was located, was also a model of the sort of place no sane person would wish to live. Crime was rife, the city was bankrupt, there was rubbish and graffiti everywhere, muggings and crime were at an all time high, and drugs were rife. Aspiring artists didn't have money and neither did their prospective audiences. A perfect combination for creating a community of outcasts. The way that almost every new artistic community starts. When a person has nothing to lose, it's easy to try new things. People have literal 'skin-in-the-game'. Unlike places and communities that have plentiful resources and have created an appealing ambience that pushes property prices up and terminates with gentrification (i.e. the East Village today). These communities now have a lot to lose and therefore tend to become protective of what they've got, rather than continuing to push forwards. This, of course, is precisely the same s-curve dynamic that drives the evolution of every system on the planet.

Recent years have seen multiple already successful regions – Leeds or Glasgow in the UK or Austin in Texas as three iconic examples - funding initiatives to purportedly support future generations of musicians. As evidenced by the complete absence of innovative, breakthrough artists emerging from any of them, it is clear they have thus far singularly failed to understand the s-curve dynamic. Austin is a music making factory, not a place for innovative talent to flourish. Factories demand that artists fit the proven mould. The fundamental *raison d'être* of the innovator is breaking moulds. The two goals are incompatible. One seeks to give comfort, the other demands suffering. Suffering, in other words, is a fundamental part of the innovation process. Customers want (need) to know that the things they support have got the requisite grit and persistence and have 'paid their dues'. Not graduated through The X-Factor university meat-grinder.

## **Conclusions – Never Make Predictions, Especially About The Future**

What might all the above pre-amble be able to say about the music industry in the coming years? And how is the potential technological sea-change of generative-AI likely to play into the picture?

Probably the first thing to conclude – and the reason for the Niels Bohr quote in the title of this section – is that the chaos and turbulence associated with the Crisis period the world is in right now, makes any kind of clear prediction impossible. That said, 'events happen at random, but society's reaction is not' suggests that, while it may not be possible to predict what specific event might cause the Crises to end, it already seems clear that the majority of the population is more than ready to acknowledge the end when it does appear. With large numbers of wild-card, populist national leaders in position, it is still not inconceivable



that something happens in 2025 to trigger the era-defining climax, but, examining previous Crisis periods through history, ‘the event’ – dropping of the atom bomb on Hiroshima and Nagasaki, the surrender of Confederate General Robert E. Lee to Union General Ulysses S. Grant in 1865, or the decisive victory of the Continental Army and its French allies at Yorktown in 1781 – even though the public had been ‘ready’ for some time, the event didn’t happen for several years into the societal ‘readiness’ period.

After this climax, whatever it turns out to be, the seeds of the next musical New-Beginning/Rip-It-Up period will begin to germinate. They may already have been sown...

... they will be unlikely to begin generating serious new revenue for another 16-18years, when the next Prophet generation after today’s GenZ Artists, begin to come of age.

In terms of what it will look like, the following look like the most likely emerging scenarios when we factor in generative AI and what it can do in the ‘inspiration’ and ‘perspiration’ stages of any innovation process:

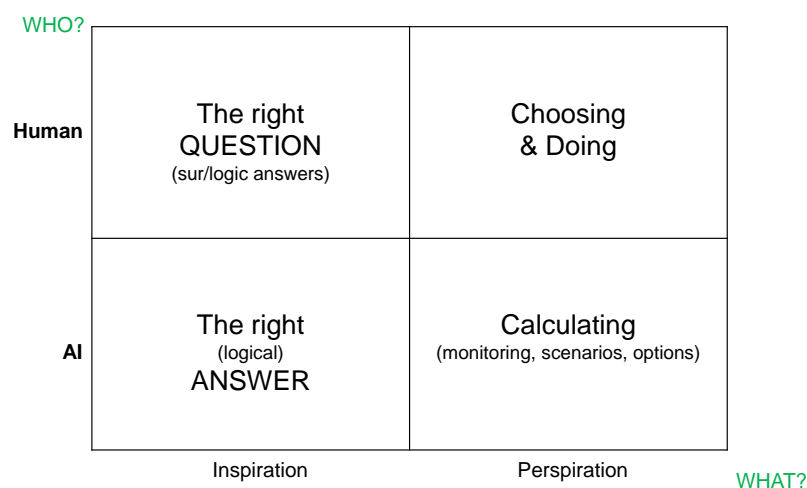


Figure 8. The Likely Role Of Generative AI In The (Music) Innovation Process.

Essentially, the AI will always now be better at finding logical answers and making millions of optimisation calculations to present humans with options. It will increasingly do all the ‘rote’ jobs that any industry needs to have done. Depending on the rate of arrival of robots, the task of ‘doing’ during the execution (‘perspiration’) part of the innovation process – whether that be playing of instruments, or mastering, or engineering – will also migrate from the human to the technology.

This effectively means three roles for humans remain. The first two, per Figure 8, are visible and ‘obvious’: the human is necessary to ask the right questions and to choose from the presented options. The third is somewhat less visible, but is likely the key to future success: the more AI and robots take on board the IQ part of the innovation task, the more important the EQ part of the success equation becomes. EQ here means understanding what listeners want, not what they say they want, it means getting groups of humans to work together effectively, and it means thinking and acting like an entrepreneur. In the emerging world EQ>>>IQ<sup>19</sup>.

All three, as an aside, look set to present an existential problem for educators and an education system geared up to teaching (IQ) answers and almost nothing on asking the right questions and helping students to understand what makes other humans tick. For musicians, the first coming contradiction is likely to be about technical proficiency. Artist generations and the art they create tends to veer in the direction of high proficiency

(be-bop!), and as such learning to play an instrument and being able to play it to a stellar level is the imperative. The world of musicianship hasn't experienced its 'Move 37' moment yet - the moment in the world of the Chinese game, Go, where Deepmind AlphaGo beat the best human player – but is probably not that far away. Whether the listener will be accepting of stellar computer-generated/robot-played music is an unknown right now, but if the decline in interest that has happened with Go, and with chess before it, once the human-v-computer game is lost, interest from 'customers' tends to migrate elsewhere.

The second coming contradiction – albeit one that is in effect already with us thanks to the Crisis period the world is in – is probably the dominant one. It is the contradiction between the time musicians devote to the creation and artistic parts of the job versus the time devoted to thinking like an entrepreneur. The person, in other words that's able to corral all the necessary talent to arrive at the right time and place and to do the right things for the right reasons. The music industry used to rely on specialists. Now a lot of the money has disappeared, there's no doubt – again, the precedent is ever-present across every industry at some point in its evolution – it is the dot-connecting, stellar-EQ generalist that will prevail.

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## Biology – Reindeer Eyes



Far above the Arctic Circle, the seasons don't simply change, they flip between extremes. For reindeer, summer means endless daylight, with the sun circling the horizon but never dipping below it. Winter, in contrast, brings months of near-total darkness. Yet through both seasons, the reindeer must spot predators, find food, and navigate treacherous terrain.

This presents a biological paradox: how can one set of eyes excel in both the harsh glare of the Arctic summer and the faint glimmer of its winter nights?

The answer lies in a shimmering layer behind the retina called the tapetum lucidum – the same structure that makes a cat's eyes glow in torchlight. In reindeer, this layer changes colour with the seasons. In summer, it gleams gold, bouncing light neatly back to the retina, bright enough for clear vision without overwhelming it. But in winter, it transforms to a deep, liquid blue. This subtle shift scatters light more chaotically inside the eye, giving every photon multiple chances to hit a photoreceptor – a crucial boost when the Arctic sun has all but vanished.

It's nature's version of a camera that swaps its sensor to match the light: gold for the sunlit months, blue for the long dark. In a world where survival depends on seeing what's out there – whether in blinding brightness or near-pitch black – the reindeer has mastered the art of adaptive vision.

Here's what the summer/winter contradiction looks like mapped onto the Contradiction Matrix:

enormous difference in  
light levels between  
summer and winter

the right amount  
of light to see

Worsening Feature Improving Feature		Physical										Performance										Efficiency										Usability									
↑		Weight	Height	Length	Width	Depth	Volume	Area	Perimeter	Surface Area	Mass	Strength	Stiffness	Flexibility	Stress	Strain	Energy	Power	Efficiency	Cost	Time	Space	Material	Process	Design	Manufacture	Assembly	Disassembly	Repair	Upgrade	Customization	Interactivity	Feedback	Control	Navigation	Information	Communication	Collaboration	Integration		
Physical	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
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	39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																					

15 35 4  
40 3 32

Good to see Principles 15, Dynamisation and 32, Colour-Change on the solution recommendations list. A bit like reactolite RayBans, only built-in.

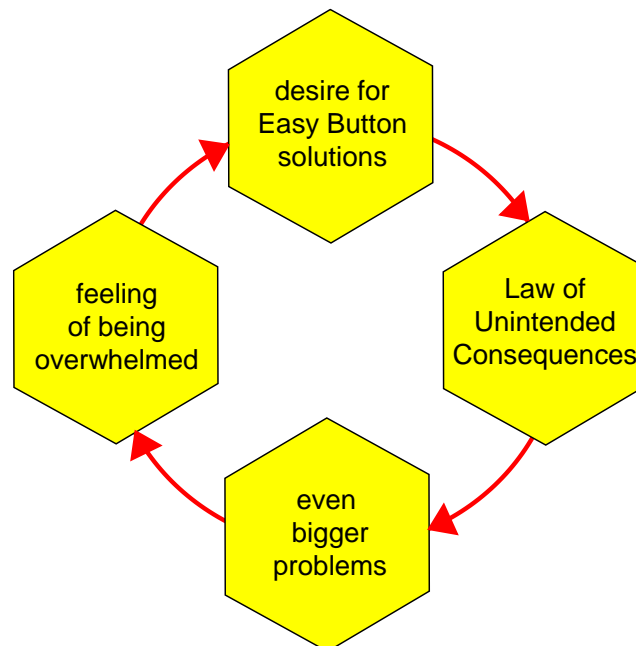


## Short Thort

Easy Buttons Beget Broken Glass.



Install enough Easy Buttons eventually they cause the collapse of Society.



Today, we are at that point.  
Now is the time to wean ourselves away from Easy Buttons.

## News

### TRIZ Mastery Hub

A quick reminder that Darrell's online session on 'Systematic (Software) Innovation' will be taking place at 2pm UK time on October 6 at the TRIZ Mastery Hub. There can't be too many software text-books still in print almost twenty-years after first publication, so a chance to see whether and how it's managed to stand the test of time... and how much longer it might continue to do so.

### TRIZCON

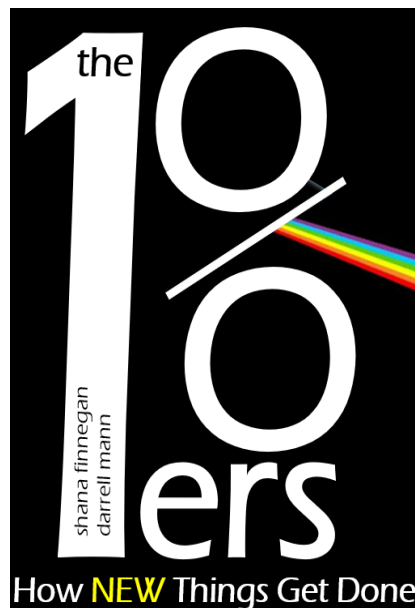
Another reminder that Darrell will be keynoting at the physical TRIZCON event being held in Riga on 6 and 7 October. Hopefully, the keynote time won't be clashing with the TRIZ Mastery Hub online session! Especially since the TRIZCON topic is all about innovation



timing and almost nothing about software innovation... although, inevitably, there will be a fair amount of discussion in the presentation about AI. With a following wind, we'll make the slides available via the 'free downloads' section of the SI online shop after the event. (The usual nice part of doing a keynote is that there's no expectation that the presenter will have to produce an accompanying paper... depending on the reception received at the conference, Darrell is planning to write a paper version anyway – most likely for the November issue of SIEZ.

### **1%er Workshop & Book**

It will be touch and go whether you receive this issue of the ezine before September 23. If you do, there will still be time to register for the first of what will hopefully become a regular schedule of 1%er workshops. Check out <https://si-shop.org.uk/september-2025-the-1-ers-how-new-things-get-done/> for more information. And head to the ebook page after September 25 if you'd like to get your hands on the first edition version of the book. We might have agreed on the final cover art by then. Right now, the man on the tightrope walk image is out and this is in:



(Fingers-crossed that the Pink Floyd, Dark Side Of The Moon fraternity don't get too annoyed with us.)

### **IMechE TRIZ Workshop**

We are happy to confirm that the IMechE will continue to offer the one-day 'Systematic Innovation with TRIZ' workshop next year. The 2026 London session has been confirmed as 1 September. Book your place at: <https://www.imeche.org/training-qualifications/training-details/21st-century-triz>

### **DangerMouth Season#3**

Well, guests seem to keep saying yes to our invitations to come and talk with us about innovation, so we're happy to say that the first episodes of a third season of our podcast will go live in early October. You know where to find it.

### **New Projects**

This month's new projects from around the Network:

- Consulting – Requisite AI-agent App Development Project
- FMCG – Technology Scouting Project

FMCG – Innovation Project Support Agreement  
O&G – Innovation Feasibility Project & IP Generation Project  
Electronics – Innovation Leadership Workshops  
Logistics – 1%er Assessment Project  
Finance – Innovation Metric Dashboard  
Healthcare – Weak Signal Detection Project

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