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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.

Our guarantee to the subscriber is that the material featured in the e-zine will not be published elsewhere for a period of at least 6 months after a new issue is released.

Readers' comments and inputs are always welcome.

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The METRICS Framework: Seven Words That Would Change The World

The Power of Measurement

If civilisation is a system, then its destiny is shaped by what it chooses to measure.

Metrics act as moral compasses disguised as numbers. They define what counts as success, what gets rewarded, and what quietly withers through neglect.

For most of the industrial era, the dominant metrics – profit, productivity, growth, engagement – have served Society well enough to build scale and efficiency. But they now show diminishing returns. When the measurements of success begin to create failure, a civilisation has entered its own ethical contradiction.

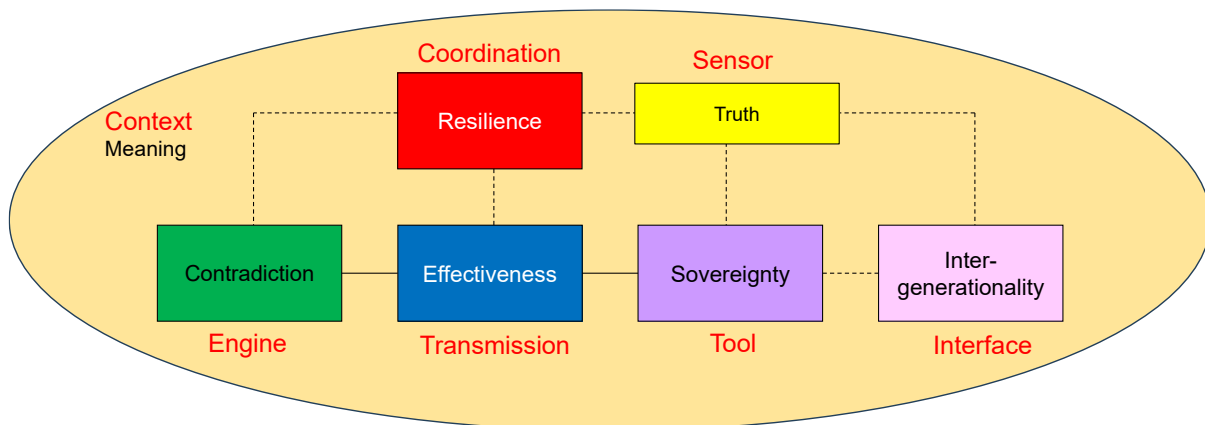
Changing behaviour, in systems terms, is remarkably simple.

Change what is measured and incentivised, and the entire system begins to reconfigure itself.

This short article proposes a new set of seven metrics – a complete system of reference values aligned to societal wellbeing, resilience, and truth. Together they form the METRICS framework:

Meaning, Effectiveness, Truth, Resilience, Intergenerational, Contradiction, Sovereignty.

Each corresponds to one of the seven essential elements of a viable system, from the engine that drives it, to the sensor that keeps it honest, to the coordination layer that maintains its coherence.



Here's a quick introduction to each of the seven elements:

M – Meaning (Context): From Engagement to Meaningful Engagement

The most powerful driver of human motivation is meaning – the felt sense that one's actions matter in a larger story. Yet the digital age has confused engagement with meaning. Social media platforms measure clicks, likes, and outrage as proxies for connection, but they have instead created division, anxiety, and distraction.

A simple shift in algorithmic intent – from maximising engagement to cultivating meaningful engagement – would transform the emotional economy of the planet. Meaning serves as the system's context, the field that defines the direction of progress. When meaning rises, so does coherence, trust, and collective purpose.

E – Effectiveness (Transmission): From Efficiency to Effectiveness

Efficiency measures how well a task is performed; effectiveness measures whether it was worth doing in the first place. Most modern institutions optimise for efficiency which quickly leads to doing the wrong things faster. A more intelligent world measures effectiveness – the capacity to choose the right things to do.

Effectiveness becomes the transmission of the system: the set of processes that converts energy and intention into purposeful movement. It rewards learning, adaptation, and impact over throughput and compliance.

When leaders stop asking “How can we do this faster?” and begin asking “Is this the right thing to do?”, wisdom enters the room.

T – Truth (Sensor): From Popularity to Reality

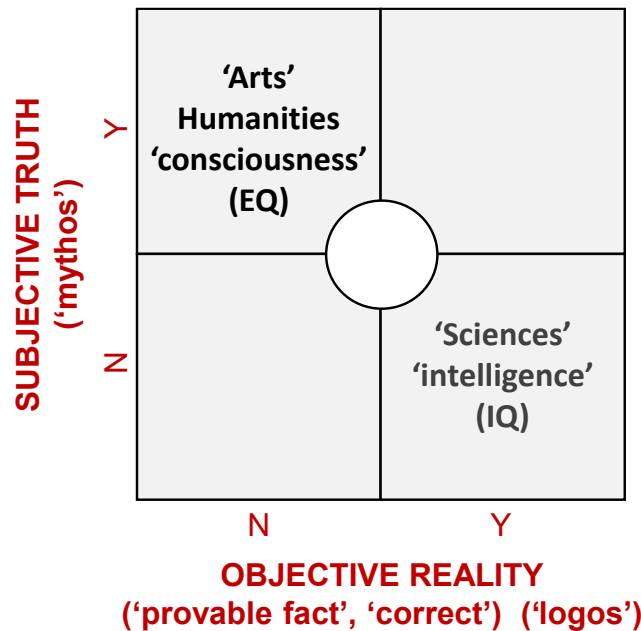
In an information-saturated world, truth has seemingly become optional.

Our current proxies – citations, clicks, shares – measure visibility, not veracity or validity.

A society that rewards popularity over reality breeds epistemic decay and systemic fragility.

Truth functions as the sensor of civilisation. Without accurate feedback, systems collapse into delusion. To measure truth is to begin rewarding accuracy, transparency, correction, and epistemic humility. The more precisely a society can detect what is real, the more resilient it becomes.

Saying it is easy. What it means in practice that makes it difficult is the work we've previously done on the difference between objective reality and subjective truth via the Correct/True matrix:



'Truth' in the METRICS context means the top-right hand corner of the matrix – objectively real and subjectively true.

R – Resilience (Coordination): From Growth to Regeneration

Gross Domestic Product, GDP, was never designed to measure wellbeing. Its inventor, Simon Kuznets, warned that it would be dangerous to mistake financial throughput for social health. And yet that is precisely what happened. GDP rewards extraction, not endurance. (Blog article: <https://www.darrellmann.com/top-10-strategies-for-increasing-gdp/> provides a number of examples of just how ludicrous the GDP calculation is.)

Resilience replaces it as the coordination metric of the system – the quality that keeps everything coherent under stress. Or, in terms of antifragility, uses such stress to make the system even more resilient. Resilience measures the capacity to absorb shocks, adapt, and regenerate. A Resilience-Domestic-Product (RDP) would track not just output, but recovery, redundancy, and renewal – the true signals of viability in a turbulent world.

I – Intergenerational (Interface): From Short-Term Returns to Long-Term Consequences

Modern capitalism measures success in quarters, not generations. Bonuses, share prices, and electoral cycles drive short-termism that depletes the future to feed the present.

Intergenerational metrics remind societies that their interface with reality extends across time. The effects of today's choices are felt most strongly by those not yet born.

An intergenerational perspective ('your customers are your grandchildren') measures sustainability not as restraint but as continuity: the ability to hand the system on in better condition than it was found.

C – Contradiction (Engine): From Quantity of Knowledge to Quality of Discovery

Knowledge creation is the engine of progress, yet most of what we currently count – papers, patents, outputs – is predominantly noise rather than signal, and for the last fifty years has set the world on a slippery slope of targets (academics need to produce x papers per year) that are very easy to game. True knowledge arises when contradictions are resolved. Every breakthrough in science, art, or social reform has followed the same pattern: the tension between opposites is not eliminated but transcended.

Contradiction therefore becomes the metric of the engine – measuring not the quantity of data but the quality of insight. Institutions that reward contradiction-resolution over replication would accelerate genuine innovation and prune the noise that clogs progress.

S – Sovereignty (Tool): From Followers to Agency

Freedom is often spoken of but rarely measured. In the digital economy, the number of followers, clicks, and dependencies has replaced the older ideal of autonomy.

Yet progress depends on individuals and organisations having authentic agency: the power to think, decide, and act independently within shared ethical bounds.

Sovereignty thus defines the system's tool: the means through which action becomes effective. It measures degrees of agency – cognitive, economic, and moral – across individuals, communities, and nations. A society rich in sovereignty is one in which wisdom can act.

Here's a quick summary of the proposed before and after METRICS measurements:

	Current	Proposed
Meaning	engagement	meaningful engagement
Effectiveness	efficiency	effectiveness
Truth	citations, clicks, shares	objectively real <i>and</i> subjectively true
Resilience	GDP	RDP
Intergenerational	quarterly earnings, election cycles, 5-year plans	'your customers are your grandchildren' – anticipated impact
Contradiction	papers, patents, outputs	contradictions solved
Sovereignty	followers, clicks	agency

Thought I

Each of these seven words contains both a metric and a moral.

Together they map a direction of evolution: from quantity to quality, from reaction to reflection, from short-term gain to long-term coherence.

If civilisation were to adopt even one of these metrics seriously – meaning instead of engagement, resilience instead of growth, truth instead of popularity – the trajectory of the future would begin to bend toward wisdom.

But to adopt all seven would do something rarer still:

It would make the system self-correcting.

It would allow progress itself to become ethical.

Seven words. Seven levers. One world to realign.

Thought II: From Concept to Practice

No system ever changes by decree. It changes by demonstration.

Just as engineers prototype before scaling, societies need controlled testbeds to explore new forms of measurement. The transition to better metrics should begin not with universal mandates but with living laboratories – individuals, teams, schools, cities, institutions, or companies willing to test what happens when success is measured differently.

Changing a metric changes behaviour almost immediately.

If engagement becomes meaningful engagement, the conversation softens and deepens. We get fewer anger-inducing videos in our social media timeline, and more ‘wow, look at the amazing things this person just did’. Less flame-stoking division and more division-is-conflict-is-opportunity-to-progress.

If GDP becomes Resilience-Domestic-Product, policy begins to reward renewal rather than depletion.

If contradictions solved become the measure of knowledge, innovation accelerates in quality rather than quantity.

The work of remeasuring is already underway.

Across sectors, evidence is emerging that meaningful metrics do more than describe reality, they reshape it. Many of the most successful organisations have learned that progress depends less on measuring what is easy and more on measuring what is important.

Their results show the same pattern: when meaning, truth, and resilience are measured explicitly, performance follows naturally.

The invitation, therefore, is simple:

Choose one domain – one team, one institution, one project – and change what is measured.

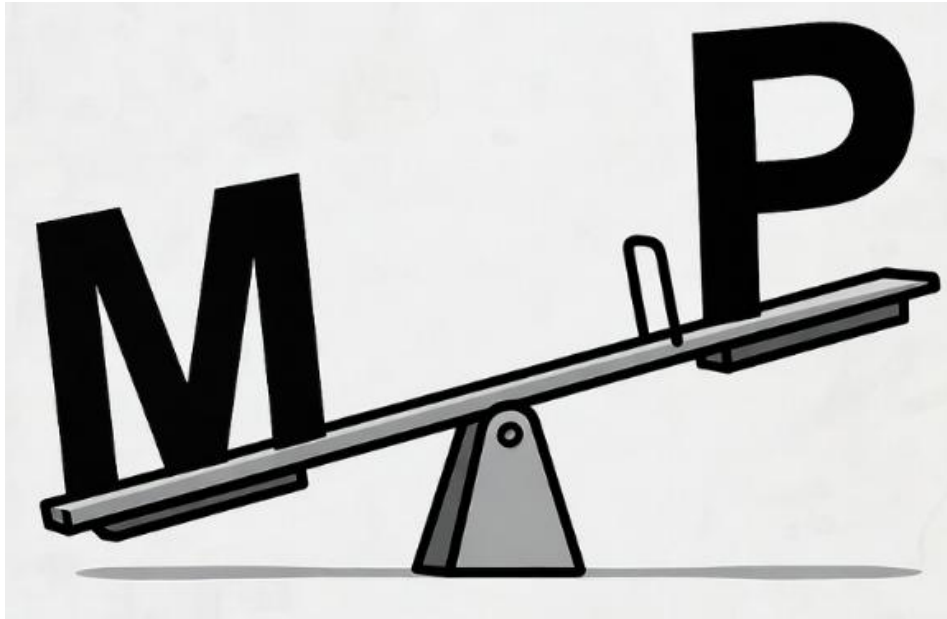
Observe what follows.

Then share what is learned, so that others can build on it.

Wisdom, after all, begins not with certainty but with curiosity.

And this seven word, METRICS, shift – from expedience to meaning – might just be the small experiment that changes everything.

Clausewitz in the Car: Finding Critical Mass at the Critical Point



Carl von Clausewitz wrote that the key to victory in war lay in concentrating *critical mass at the critical point* – bringing maximum force to the precise moment and place where it will change the course of battle. For Clausewitz, that meant troops, logistics, and timing. For the rest of us, navigating complex human systems rather than battlefields, it might mean something rather different: emotional intelligence, empathy, and well-timed restraint.

The principle, though, is the same. Whether you're commanding an army or managing a conversation, success depends on recognising where to focus limited energy for maximum effect, to ensure that the available "mass" is greater than that required to achieve the "point" objective, and if it isn't to adjust one or the other until it is.

And sometimes that battlefield looks suspiciously like the front seats of a car.

Lost in the Complex Domain

Imagine this: you're driving to a wedding. You think you know the way. Your spouse is in the passenger seat. It's been a while since you passed a road sign that looked familiar, and then comes the moment.

"We passed that building ten minutes ago," she says, with a carefully managed tone. "You missed the turning."

You feel the temperature in the car shift a degree or two. You're not *entirely* sure she's wrong, but you're not quite ready to admit you're lost either. She's biting back the phrase "I told you so," wondering why you didn't just switch on the satnav like a normal person. And just like that, you've crossed a threshold. What started as a *complicated* problem – navigation – has become a *complex* one: two human beings, each slightly frustrated, with their emotions, histories and expectations all entangled.

There's no longer a single "right" answer. You can't fix this one with logic alone. The "enemy" isn't the road layout; it's the dynamic between you. The question is no longer "Which turning did we miss?" but "How do we get where we're going *without another argument?*"

In other words: we've found a potential critical point to be aiming for.

Clausewitz in the Passenger Seat

Let's set the desired outcome. Ideally, you both want to *arrive at the wedding on time, without an argument*. Two objectives; both important; possibly mutually exclusive. Now let's assess the situation – Clausewitz's equivalent of surveying the terrain and counting your troops.

Available resources:

- Two slightly tense humans.
- An uncertain sense of direction.
- A car satnav that hasn't been switched on.
- A driver quietly embarrassed. He's worked out his good reason for not switching the satnav on – using satnav's all the time has a really bad impact on right-hemisphere functionality – but already knows she'll know it isn't the real reason.
- A passenger who knows that if she reaches for the satnav herself, it'll likely spark a defensive reaction.

Not much to work with.

At this point, the rational solution ("turn on the satnav") is blocked by emotional reality. The only way forward is to change the *system state*. That means shifting the energy – the "mass" – towards empathy, humour, and shared purpose.

She knows she can't simply "win" the argument; she needs to win the moment.

The Micro-Battle: Applying Critical Mass

A realistic reassessment: the perfect outcome – on time *and* calm – might not be achievable. Perhaps they can arrive on time but stressed, or late but still laughing. The key now is to *increase the available critical mass* at the emotional level.

She takes stock again.

She's got her phone with a working satnav.

She could text a friend at the wedding to say they might be late.

She could also use something more powerful than either: a shared memory.

A year earlier, they'd been late for a football game. Tempers had frayed, but their friends had arrived even later, and the absurdity of it had made them both laugh. That memory had turned irritation into connection.

So she runs what in complexity science might be called a safe-to-fail experiment – a small, low-risk action designed to shift the pattern without escalating it. A new, simpler, smaller, critical point.

She reaches over, kisses him on the cheek, and looks him in the eyes.

At first, he keeps trying to not look at her, to keep focusing on the road ahead.

She doesn't give in. Keeps her face close to his.

Finally, just when she's thinking it isn't going to work, he glances back, softens, smiles.
"The game," he says.

"The game," she repeats.

And the first battle is won. The critical mass – keeping her face close to his – was greater than the critical point.

"I bet we'll beat Betty and Pete," she whispers.

"Put the satnav on," he says. "We can do this."

Clausewitz would have called that the *turning point*. The moment where limited energy, concentrated at the right place and time, transforms the trajectory of the entire campaign.

The Tactical Breakdown

If we replay the scene in slow motion, we can see exactly how the wife's strategy mirrors Clausewitz's principles of critical mass and decisive point:

Step	Clausewitz / Complexity Concept	Wife's Action	System Effect
1. Define the Critical Point	Identify where the situation's outcome will be decided.	"Arrive at the wedding on time, without argument."	Clarifies shared purpose; reframes conflict.
2. Assess Resources	Understand constraints and assets before acting.	Notes emotional tension, driver's pride, own empathy, phone satnav, shared history.	Avoids rash intervention that would backfire.
3. Recognise the Domain	Distinguish complex from complicated.	Understands that logic alone won't fix this.	Prevents escalation.
4. Calculate	Assess whether critical mass @ critical point test satisfied	Realisation test is not satisfied.	Re-formulation needed
5. Redefine	Find smaller critical point.	"Need to restore connection."	New direction.
6. Build New Critical Mass	Concentrate limited resources where they'll have most leverage.	Uses humour and affection to restore connection.	Converts emotional energy into trust.
7. Safe-to-Fail Action	Small, reversible move that tests direction.	Gentle gesture + shared memory.	De-escalates tension safely.
8. Consolidate the Gain	Reinforce success with new coordinated action.	Shared laugh leads to mutual decision to use satnav.	Restores partnership and progress.

What she's doing is pure Clausewitz – not with cannon fire, but with compassion. She finds the moment of highest leverage, applies just enough pressure to shift the balance of the critical mass @ critical point test, and converts emotional entropy into alignment.

The resources haven't changed. The map hasn't changed. The *relationship with the situation* has.

The Strategic Lesson

Clausewitz's insight wasn't just about war. It was about *focus*. Spread your energy too thin, and you dissipate it. Wait too long, and you miss the moment. But identify the true point of leverage – and bring all your attention, empathy, and intent to bear there – and you can change the entire dynamic.

In today's complex world, that "critical point" might appear in a corporate negotiation, a classroom, or a family conversation. Wherever systems involve people, emotion, and uncertainty, the battlefield is not made of geography but of *relationship*.

The "mass" we must concentrate is rarely physical anymore. It's emotional, cognitive, or cultural – the trust we've built, the humour we can call upon, the courage to pause before reacting. To use that pause to dynamically calculate critical mass and critical point, and to redefine both until Clausewitz' test is satisfied.

When we can see that, the Clausewitzian principle still holds:

Success belongs to those who can sense the decisive moment and act decisively within it.

Clausewitz might never have imagined a battlefield as small as the front seats of a tired hatchback with barely functioning aircon, but he would have recognised the strategy. In both war and marriage, the difference between collapse and victory often lies not in overwhelming strength, but in knowing exactly when – and where – to apply it.

Not So Funny – The Metal Spike Problem:



It doesn't matter what profession you're working in, humans make mistakes. Even the best-trained among us are, statistically speaking, barely "two-nines" reliable. That's one error in every hundred opportunities to mess up.

When training or design is poor, that reliability can easily fall to "one-nine" – one mistake in every ten opportunities. Exhibit A: supermarket self-checkouts, currently, in my experience, the most dysfunctional devices on the planet.

My personal average is about one in three attempts before the dreaded "*call for assistance*" message appears. Maybe it's because I'm left-handed and whoever designed the interface wasn't. Maybe it's because the stupid machine wouldn't read the reduced label and insisted on putting the item through at full price. Either way, the point stands: even in systems meant to make life easier, humans still fail – and systems designed *around* humans often fail even faster.

The Human Factor in a World of Nines

Safety engineers, of course, have long been chasing extra "nines." The aerospace industry, for instance, operates at something like *thirteen-nines* – one failure every five to ten trillion opportunities. That's almost absurdly good when you consider the people inside those aircraft are still, well, people.

The aviation world solved this dichotomy by quietly moving humans out of the loop. Most passenger planes are flown by autopilot (“George”) for more than 95% of every flight. A long-running industry joke goes that the pilot’s job is to make sure the co-pilot doesn’t touch anything, and the co-pilot’s job is to make sure the pilot doesn’t touch anything either.

It’s a tempting vision of safety: take the messy, error-prone humans out of the system. The automotive industry, to its great credit (and occasional hubris), has spent billions trying to do the same with self-driving cars – and mostly failing so far.

The benchmark, after all, isn’t that high. Even the best human driver is a “two-nines” operator, making a mistake roughly once in every hundred decisions. And given that 90% of drivers believe they’re above average, there’s clearly a mismatch somewhere between confidence and competence.

Fortunately, we don’t crash every hundred journeys. The reason is that driving, like most human systems, is buffered by *collective error correction*. When I make a mistake – drift into a lane, forget to indicate, brake too hard – the drivers around me (usually) don’t. They compensate. They notice. They adjust.

Accidents happen when *two* one-in-a-hundred mistakes coincide: when I pull out without looking and the driver in the car behind is too busy trying to disengage the stupid lane-assist function to notice. Bang. Probability meets probability and the system collapses.

Safetyism: Solving the Wrong Problem

Because nobody likes collisions (or lawsuits), engineers naturally respond by trying to make things safer. Stronger chassis, bigger airbags, better lane assist, brighter blind-spot sensors. Sensors on everything.

And it works – up to a point. Cars are statistically safer than they’ve ever been. But there’s a twist: the safer our cars become, the *worse* we get at driving them.

The safer the system, the less attention its human users pay. It’s as though each of us carries a built-in “acceptable accident rate,” and when external safety goes up, internal caution quietly goes down. Psychologists call it *risk compensation*. Engineers call it a headache.

Which brings us to one of the great dark jokes of the automotive world:

“The only car safety feature that would actually work is a metal spike sticking out of the steering wheel – one inch from the driver’s chest.”

Picture it. A sharp, uncompromising, chest-level reminder that every decision has consequences. The spike wouldn’t make you more *reliable* (you’d still be a two-nines human), but it would dramatically alter *how* you behaved. You’d drive slower. Leave more distance. You’d only start trying to dis-engage the instrument of torture that is lane-assist before you set off, or when you’re on an empty stretch of road.

No manufacturer, of course, has dared put the Metal Spike Edition into production. But the underlying principle – make things *less* safe to make them *more* safe – occasionally finds its way into real design.

The Magic Roundabout and Other Paradoxes

One brilliant example (anyone attending one of my workshops will no doubt have had foisted upon them) is the so-called *Magic Roundabout* found in several UK towns, including Swindon and Hemel Hempstead. It's a central roundabout surrounded by five or six mini-roundabouts, each allowing traffic to flow either clockwise or anti-clockwise.

On paper, it looks insane. In practice, it's one of the safest intersections in Britain. Why? Because nobody has the faintest idea what's going on. Drivers enter slowly, make eye contact, proceed cautiously, and stay alert. It's chaos – beautifully managed chaos.

This is Clausewitz meets complexity theory on the B-road: uncertainty drives attention, and attention drives safety.

You can see the same paradoxical pattern in other domains, too:

- Dutch “shared space” street design: In several European cities, planners have removed road markings, signals, and even curbs. The result? Traffic slows down, pedestrians assert themselves, and accident rates plummet. Without the illusion of order, everyone behaves responsibly.
- Ski resorts and hiking trails: Where safety rails are minimal and warning signs sparse, people tend to be more cautious and have fewer accidents. Add barriers, and visitors assume the system will protect them – until it doesn't.
- Workplace safety in heavy industry: A study of construction sites found that removing “safety shields” around some equipment led to *fewer* injuries – because workers became hyper-aware of their proximity to danger instead of trusting the shield.

Each is a version of the metal spike: a carefully managed discomfort that keeps human attention alive.

When Safety Becomes a Trap

Unfortunately, most modern institutions have drifted in the opposite direction – what you might call safetyism. The reflexive belief that every failure demands another rule, another barrier, another checkbox.

- Hospitals add new regulations after every mishap, until the protocols themselves become so complex that staff can't keep up – and errors rise.
- Banks, burned by 2008, pile on so many compliance layers that nobody understands the system anymore – and the loopholes multiply.
- And health-and-safety officers post “Hold the Handrail” signs on staircases, only to find incidents actually increase because everyone is either too busy cursing the stupidity of the sign to notice where they're putting their feet, or too busy working out how to think of a witty piece of graffiti to ‘improve’ the sign.

Safetyism creates the illusion of control while quietly breeding fragility. The more we wrap people in procedural bubble wrap, the less adaptable and situationally aware they become. When the real world inevitably deviates from the manual, disaster ensues.

The Spike We Need

Which brings us back to the big question:

What is the *metal spike* equivalent in your world?

What's the feature, rule, or design choice that would make things *feel* a bit less comfortable – but, in doing so, force people to engage, think, and take responsibility again?

Maybe it's removing the endless disclaimers that nobody reads, so people have to actually *understand* risk again.

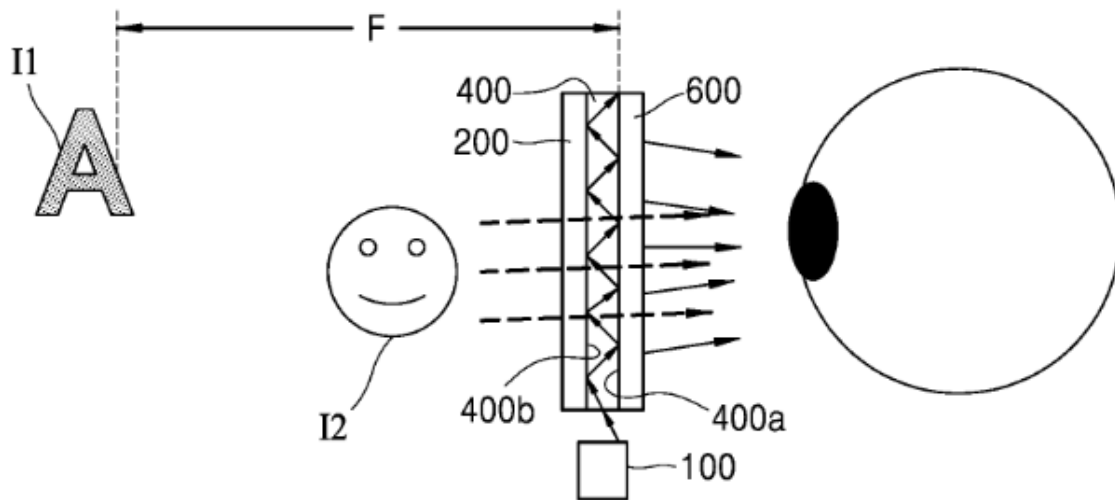
Maybe it's simplifying regulations instead of adding new ones, trusting professionals to make informed judgements.

Maybe it's reintroducing a little bit of unpredictability – not because we want more danger, but because we want more *attention*.

True safety, as it turns out, isn't about eliminating danger. It's about keeping humans *awake to it*.

Because when systems become so safe that people stop noticing what they're doing, that's when the real spike appears – you just don't see it coming.

Patent of the Month – See-Through Display



An intriguing university/industry collaboration patent of the month this month, which means we're at the commercialisable end of the innovation-risk spectrum. The partnership in question is between The University of Massachusetts and Samsung, and the result was published as US patent 12,461,376 on November 4.

The problem needing to be solved is succinctly described in the background description section of the patent:

Recently, interest has grown in ultracompact display apparatuses that are to be used as wearable display devices for implementing virtual reality devices, augmented reality devices, and the like.

A solution to make ultracompact display apparatuses lighter and thinner while maintaining the quality of an image for the user's eyes has been continuously sought, and a light waveguide-based optical system has been used as an example thereof.

The key phrase being, 'lighter and thinner while maintaining the quality of an image'. Here's what that contradiction looks like when mapped onto the Contradiction Matrix:

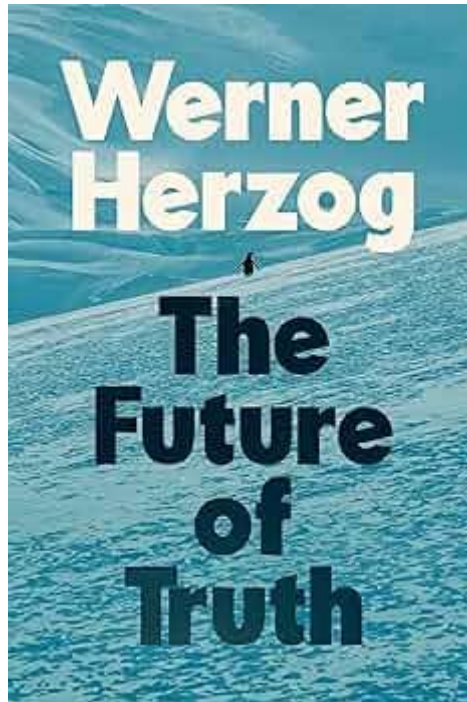


And here's how the inventors have tackled the contradiction as defined in the main claim of the patent:

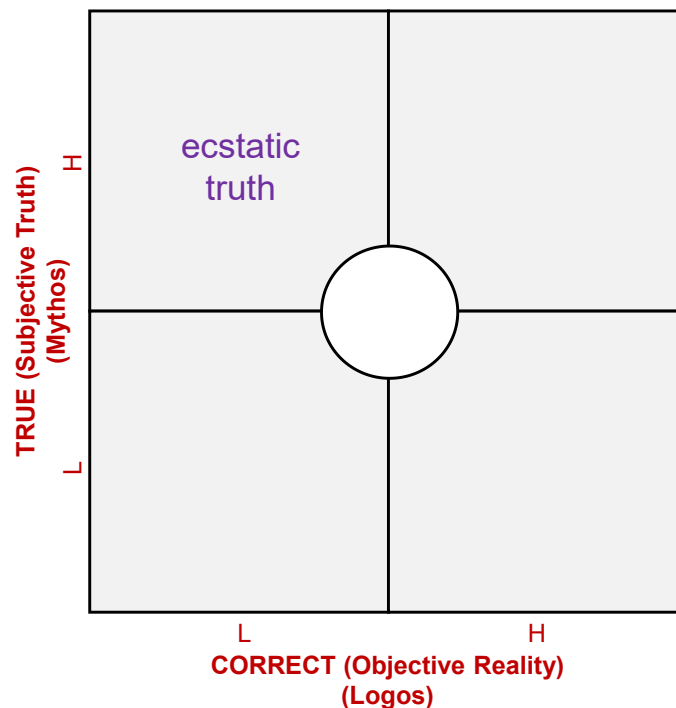
1. A see-through type display apparatus comprising: an image projector configured to output image light; a waveguide configured to receive the image light output from the image projector and transmit the image light to a user's view, the waveguide comprising a first surface through which the image light is output and a second surface opposite the first surface; a first lens disposed on the first surface of the waveguide, the first lens having a negative refractive power, and comprising one or more [Principle 7] meta lenses; and a second lens disposed on the second surface of the waveguide, and the second lens having a positive refractive power, the first lens including a first meta lens disposed on the first surface of the waveguide, the first meta lens having a first refractive power; and a second meta lens disposed on the first surface and spaced apart from the first meta lens by a first distance, the second meta lens having a [Principle 3] second refractive power [Principle 13] opposite to the first refractive power.

I wonder if they used TRIZ?

Best of the Month – The Future Of Truth



"I have always insisted that you need stylizations, invention, poetry, and imagination to locate a deeper layer of truth, one that can access a distant echo of something that can illuminate us, far beyond the reach of fact. My term for this is 'ecstatic truth'.



A slightly tricky one this month. For quite a while, I thought the clear choice for the Best book this month was going to be the Carl Benedikt Frey book, 'How Progress Ends', but, 300 pages in, I reached the point of thinking to myself, 'well, this is certainly comprehensive, but at the end of the day, the principles that underpin the history of innovation success and failure Frey has 'uncovered' can be summarised in one slide'. A slide with an s-curve on it, with a label at the bottom saying 'de-centralised/under-coupled' and one at the top saying 'centralised/over-coupled'. It might make a Short Thort one day. SIEZ readers, in other words, will likely not be happy if I recommend something that might take a month to plough through, and yet delivers so little insight. A substitute was required. Figuring that I love Werner Herzog's work, and that he had a new book published in October, it ought to be a banker. Especially since it only has a 100-pages. I read as far as the 'Axioms Of Emotion' chapter – essentially a five-page summary of one of the more 'random' Italian opera story-lines – and figured, nope, I can't possibly make this the Book of the Month. Fortunately, I persevered (100 pages doesn't require that much persistence admittedly) and when I got to the 'Ecstatic Truth' chapter – see the opening quote – I figured, nope, I can't possible *not* make this the book of the month.

Which is to say, ultimately, that there's a lot to both love and hate about the book, and – for this reader at least – the loves end up outweighing the hates. Not dissimilar to most of Herzog's movies now I think about it.

The Guardian's Tim Adams captured the central tension beautifully when he asked whether The Future of Truth is "profound or just a prank." That, it turns out, is the right question to ask. Herzog has always been both preacher and trickster – the philosopher-as-jester who plays with our most serious questions while also mocking our need for them to be answered. The result is a short, mischievous, occasionally maddening meditation on what "truth" might still mean in an age drowning in data and starving for meaning.

At its best, the book channels the energy of his famous 1999 Minnesota Declaration, where he first laid out the idea of "ecstatic truth" – the notion that there exists a kind of truth deeper than facts, one that can be reached only through imagination, metaphor and emotional resonance. This is the Herzog who famously restaged scenes in his documentaries, or fabricated moments entirely, not to deceive but to reveal. "Fact creates norms," he wrote then; "truth creates illumination."

In the SI work, we often separate "objective reality" from "subjective truth" – as illustrated in the hopefully now familiar 2x2 matrix just below the Herzog quote. The former is the world that can be measured, modelled, mapped – the domain of systems, physics and contradictions. The latter is the world of inner resonance: what we feel, value and make meaning from. Herzog's "ecstatic truth" lives unapologetically at that subjective end of the spectrum. His concern is not with what happened, but with what it felt like when it did.

If you're looking for data or argument, you'll be disappointed. But if you accept that reality and truth are not the same thing – that one is structural and the other is emotional – the book becomes strangely profound. It's also a perfect study in the kind of contradictions I've spent much of my career exploring. On one hand, we humans crave accuracy, precision, certainty – the "accountant's truth." On the other, we crave depth, emotion, resonance. Herzog refuses to choose between the two. He's solving the contradiction by inversion: he breaks accuracy in order to preserve meaning.

In TRIZ terms, this is Principle 13 – The Other Way Around – or perhaps Principle 19 – Periodic Action if you consider the rhythm of Herzog’s truth-seeking. The very act of oscillating between the factual and the poetic becomes the mechanism through which “truth” emerges. It’s messy, but so is life.

This may explain why readers (and critics) are split between finding *The Future of Truth* either profound or pretentious. They’re both right. The apparent inconsistency is the point. Herzog isn’t trying to resolve the tension between objective and subjective truth; he’s performing it. The book is, in its way, a living example of his own philosophy: a hybrid of insight and absurdity, clarity and chaos, reason and rapture.

By the time I finished it, I realised that what Herzog gives us isn’t a definition of truth so much as a permission slip to seek it differently. He’s inviting us to feel as much as to think, to let the heart be a sensor as well as the head.

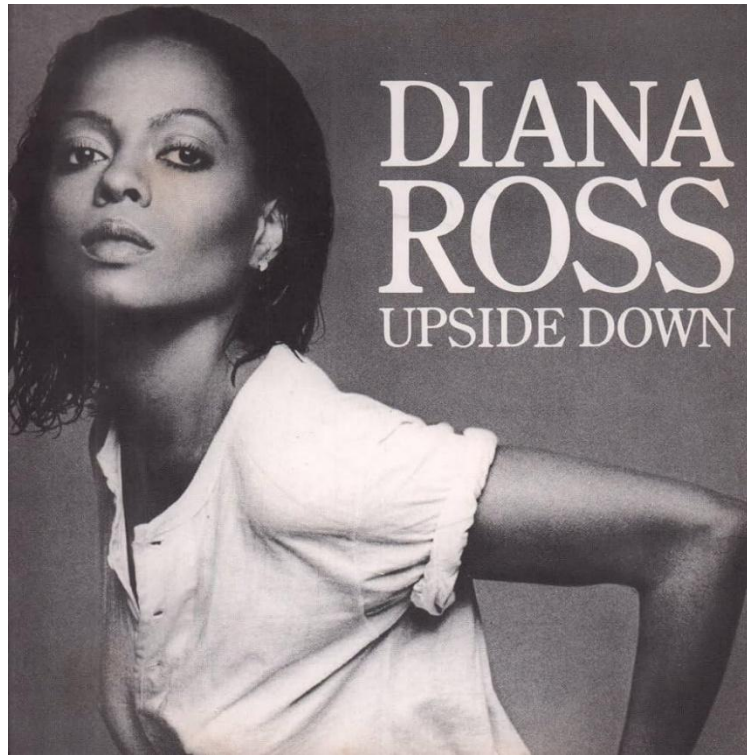
If objective reality gives us the map, Herzog’s ecstatic truth gives us the music. Both matter, but only one tells us *why* we’re travelling in the first place.

PS

If my partial ambivalence is putting you off investing in a copy of the book, the pre-cursor to it, The Minnesota Declaration, can be found here:

<https://designmanifestos.org/werner-herzog-the-minnesota-declaration/>

Wow In Music – Upside Down



Back in 1980, this song got me in a lot of trouble with friends. It had just about become possible to talk about liking punk and reggae amongst the prog-rock community, but disco was still an absolute no-no. The problem had actually started in secret the year before when I snuck a copy of Chic's album, *Risqué*, home from my Saturday job at the local library. What was that guitarist doing? More to the point, as a budding rhythm guitar player myself, how was he doing it.

The guitarist in question being Nile Rodgers. Still one of my favourite guitar players of all time. The real King of Pop. The man behind an unbelievable catalogue of hits, not just for Chic, but for pretty much for anyone who's anyone in the world of popular music. Carly Simon, Madonna, David Bowie, Beyoncé, Daft Punk, Lady Gaga. At one point he even had me liking Duran Duran. But it was the Diana Ross single, *Upside Down* that made me decide I had to test the prog-waters. It was and still is pure pop genius in my mind. My prog friends in 1980 didn't get it. All of them do now.

The sublime 'Upside Down' was written and produced by Nile Rodgers and the late Bernard Edwards. All the members of Chic also played on the song, essentially making it a Chic song with Diana Ross being featured on lead vocals.

Back when the single was on the radio and in the clubs all the time – 'Diana Ross is cool again' – it was the guitar and bass that made the song irresistible.

It took me a while to work out the bigger picture. Deep down I knew there was something else, but I couldn't put my finger on what it was. Turns out I just needed to zoom-out from the guitar dazzle and notice the song's structure.

‘Upside Down’ is essentially a palindrome.
A Principle 12, tension-managing masterclass.

An upside-down masterclass: the same structure upside-down as well as the right way up.

That is to say, taken forwards and backwards, the song is arranged the same way.
Whether right-side-up, or upside down, the appropriately titled classic is a true representation of its name.

To explain this, one has to consider the song’s five basic elements: a chant, a chorus, two distinct verses, and its instrumental breaks.

The song begins with a short instrumental intro, then goes into an abbreviated chant (Diana and members of Chic singing in Chic’s trademark staccato form): “Upside down you’re turning me, you’re giving love instinctively. Round and round you’re turning me!”

Diana then sings the chorus solo, “Upside down, boy you turn me... inside out and... round and round.” She repeats it once more before going into the first verse.

In it, Ross – again solo – sings the lines “Instinctively, you give to me, the love that I need. I cherish the moments with you.” She continues, “Respectfully, I say to thee, I’m aware that you’re cheating, but no one makes me feel like you do.”

Then it’s back to the chorus, which Diana sings in her (Principle 17) lower, more seductive register and which we soon figure out isn’t the song’s real hook after all (“Upside down, boy you turn me...”).

Next, Ms. Ross takes it (Principle 3) back up a notch with Verse 2: “I know you’ve got charm and appeal, you always play the field. I’m crazy to think you’re all mine.” Her concession to this philandering man continues, “As long as the sun, continues to shine, there’s a place in my heart for you, that’s the bottom line.”

Then it’s back to the chorus again, a reminder of why she finds herself in this inescapable predicament in the first place: “Upside down, boy you turn me... inside out and round and round....” And repeat.

It’s at this point that Diana returns to the first verse, almost as if she’s run out of ideas for paying tribute to the man whose clutches she finds herself under.

“Instinctively, you give to me the love that I need...”

Another chorus follows (this time repeated four times, but we’ll ignore the number for the sake of making this palindromic argument).

Afterwards, Chic’s vocal team returns to join The Boss on the song’s final chant – the same urgently delivered one that started the song, except extended as if to drive home the point.

”Upside down you’re turning me, you’re giving love instinctively. Round and round you’re turning me, I say to thee respectfully!”

It’s this chant, repeated four times here, that essentially serves as the song’s main hook, without which it might not have been nearly the big hit it turned out to be.

Then, finally, Chic's rhythm section (Rodgers, Edwards and the late drummer Tony Thompson) takes us out with an extended instrumental coda... a jam session featuring Rodgers' unmistakable rhythm guitar as the main element.

So, the structure of "Upside Down" is basically this:

Instrumental – Chant – Chorus – Verse 1 – Chorus – Verse 2 – Chorus – Verse 1 – Chorus – Chant – Instrumental

Forwards and backwards, it reads the same way.

Rarely, if ever, has a song with so many different elements been structured in a way that one could truly call it a palindrome. In this case, 'Upside Down' was helped by several factors, including the decision to open and close the song, vocally at least, with the same chant, to begin and end the song with instrumental breaks, and to repeat the first verse as a stand-in for Verse 3.

Of course, the main factor was a Chic trademark: to get straight to the point with the main chorus preceding any verses. Absent that, we wouldn't be talking about this.

It's also worth noting that, while all Chic tracks began (and usually ended) with the chorus, none of their other big hits qualified as a palindrome for various structural reasons.

Still, I wonder if Rodgers and Edwards had this palindrome in mind when they composed 'Upside Down', or if it just took a math/grammar/Chic/Diana nerd to figure it out many decades later?

Either way, the song – a million-selling No. 1 smash that has the distinction of making the highest top-40 entry (No. 10) of the entire '80s decade on the Billboard Hot 100 – still stands as Diana Ross' biggest solo hit (and second most successful song of all – with or without the Supremes – behind "Endless Love" with Lionel Richie).

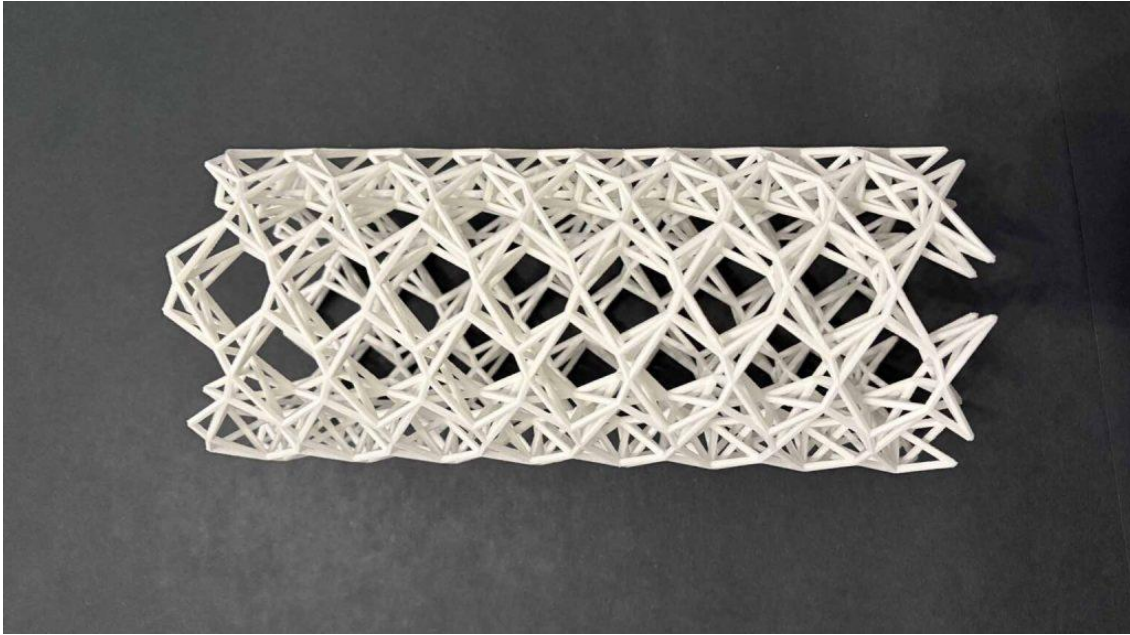
For that reason, and for giving me an excuse to write about palindromes in music*, I celebrate 'Upside Down' and hope you'll be tempted to give it another spin next time you're in need of a dance and a smile.

* Steely Dan's** classic album 'Aja' is my second favourite musical palindrome. Not quite as listenable, but the Grateful Dead's album, Aoxomoxoa, makes for a palindrome so good I almost named a band after it. If I had to choose a palindromic artist, ABBA is probably still the best bet. Prize for the ultimate lyrical palindrome, and probably one of the longest palindromes in the English language goes to the largely invisible prog album, Kew. Rhone. which contains the unforgettable lyric, 'Peel's foe, not a set animal, laminates a tone of sleep'... mention of which I'm hoping, one day, might allow me back into the prog brotherhood again?

** Steely Dan's producer, Gary Katz produced five of the eight tracks on Diana Ross's 1983 album, 'Ross'. One of them being a very classy (Steely Dan founder) Donald Fagen song, 'Love Will Make It Right'... which probably ought to be a candidate for a future wow of the month... perhaps that's how we should be choosing which songs to feature in future

– the next one has to connect in some way to the previous one... which, if I stretch the point just a little (too far) might just be another illustration of Principle 12?

Investments – Kagome Tube Damping Metamaterial



Researchers from the University of Michigan and the Air Force Research Laboratory have created a 3D-printed metamaterial – the “kagome tube” – that can passively suppress vibrations while still serving as a load-bearing structure. This achievement offers a new path to designing materials that *shape* how mechanical energy moves through them, rather than simply enduring it.

Practical Benefits of the New Structure

Unlike conventional damping systems that rely on added weight, adhesives, or active vibration control, the kagome tube isolates vibrations *geometrically*. Its lattice architecture allows engineers to control how sound and vibration waves travel through a structure, confining unwanted oscillations to harmless regions while keeping critical areas steady.

Key benefits include:

- Passive vibration isolation without external energy input or moving parts.
- Load-bearing capability, allowing the structure itself to serve as both frame and isolator.
- Compatibility with common materials such as nylon, aluminium, or titanium through 3D printing.
- Weight reduction by removing the need for additional damping materials or mechanical isolators.
- Scalability, as the same design principles can be applied from millimetre-scale components to meter-scale structures.

The Contradiction Solved

Historically, topological metamaterials have shown they can localise vibrations to a specific boundary – a phenomenon known as topological polarisation. However, these designs were typically too flexible to carry loads or too rigid to allow wave localisation.

Here's what this contradiction looks like when mapped onto the Contradiction Matrix:

load carrying capability

Physical

Performance

Wave localisation (energy dissipation)

Load carrying capability

14 25 15 17
28 37 7 3

The research team resolved this contradiction by folding a two-dimensional kagome lattice (a triangular network of struts that resembles traditional Japanese woven bamboo patterns – Principles 17, 7) into a three-dimensional tubular form (Principle 14). The resulting structure is both:

- Mechanically stable, with rigid edges and cross-bracing for strength (Principle 3), and
- Topologically polarised, guiding low-frequency vibrations toward one end of the tube and preventing them from spreading through the entire body.

This elegant step-change advance in the rigidity-compliance conflict allows the kagome tube to act as a *mechanically useful* vibration filter – something previous designs couldn't achieve.

How the Geometry Works

The kagome tube derives its performance from structural geometry, not material composition. Here's how:

1. Kagome lattice basics: a kagome pattern consists of interlinked triangles forming a network that is “isostatic” – it has just enough connections to be rigid but remains close to flexible. This delicate balance makes it highly responsive to wave propagation.
2. Topological polarisation: in such lattices, small geometric adjustments (like changing the angle or thickness of the struts) can bias vibrational energy to travel in one direction. This is the same principle that allows “topological insulators” in physics to conduct electrons on one side but not the other.
3. Tubular folding: by rolling the 2D lattice into a tube, the researchers created a continuous 3D shell where vibration waves travel around the circumference and along the axis. One end of the tube acts as a “trap,” localising vibrational modes, while the opposite end remains almost vibration-free.
4. Self-supporting design: the tube geometry provides natural stiffness along its length, meaning it can carry compressive or tensile loads while maintaining its isolating behaviour – a crucial property for integration into aircraft or vehicle frames.

In essence, the kagome tube channels mechanical energy the way an optical fibre channels light, confining it to specific paths while leaving other regions protected.

Likely Early Adopter Use-Cases

Because the kagome tube combines lightweight strength with built-in vibration control, its earliest applications are expected in sectors where precision and reliability are critical:

1. Aerospace and defence: (probably not surprising given one of the project partners) aircraft frames, satellite supports, and UAV mounts could use kagome tubes to protect delicate electronics and sensors from vibration while minimising added mass.
2. Precision manufacturing and optics: semiconductor tools, laser systems, and microscopy platforms depend on vibration-free environments. Kagome tube supports could replace bulky isolation stages, enabling more compact and efficient setups.
3. Automotive and transportation systems: EV battery housings, suspension linkages, and drive-train components could benefit from integrated damping, improving comfort and component longevity without added damping materials.
4. Civil and structural engineering: bridges, building supports, and vibration-sensitive foundations (like hospital imaging suites or laboratories) could incorporate kagome tubes to isolate mechanical noise and seismic micro-vibrations.
5. Energy and renewables: wind turbine towers, offshore platforms, and other energy infrastructure could exploit the design to suppress mechanical resonance while maintaining structural integrity.

Looking Ahead

The team's work points toward a future where structures are not merely passive recipients of mechanical energy, but active directors of it. By leveraging topology, geometry, and 3D printing, engineers can create materials that manage energy flow internally, paving the way for lighter, quieter, and more resilient machines and buildings.

Read more:

James P. McInerney, Othman Oudghiri-Idrissi, Carson L. Willey, Serife Tol, Xiaoming Mao, Abigail Juhl. Topological polarization of kagome tubes and applications toward vibration isolation. *Physical Review Applied*, 2025; 24 (4) DOI: 10.1103/xn86-676c

Generational Cycles – Sitcom Dads



Every age needs its fools.

In the medieval court, the jester alone could mock the king – a safety valve for power and pomposity. Comedy has never lost that instinct. We laugh at presidents, bosses, priests, and, most reliably of all, dads. From Ward Cleaver to Homer Simpson, the sitcom father has been the most consistent authority figure in American life – and the most consistently lampooned. But what if those laughs aren't just entertainment? What if they chart something deeper: how each generation feels about authority, community, and manhood itself?

From “Father Knows Best” to “Homer Probably Doesn’t”

In the high-trust America of the 1950s, television fathers embodied stability. Jim Anderson in *Father Knows Best* and Ward Cleaver in *Leave It to Beaver* wore the halo of post-war order. They offered moral clarity, emotional steadiness, and neatly pressed trousers. Their word was final – and, usually, right.

By the 1970s and 80s, however, the pendulum had begun to swing. Society was questioning institutions, hierarchies, and gender roles. Authority no longer inspired obedience; it invited parody. Archie Bunker grumbled his way through *All in the Family*; Cliff Huxtable cracked jokes instead of commandments; Al Bundy and Homer Simpson turned domestic leadership into comic disaster. The sitcom father had become loveable, exasperating. And almost proudly inept.

Cultural analysts have documented the shift. Studies from UCLA's *Centre for Scholars & Storytellers* show that while fathers were depicted as wise and dependable in early sitcoms, later decades brought the “doofus dad” stereotype: well-meaning but hopelessly bumbling. A *TV Guide* review notes that the tide may now be turning again, with shows like *This Is Us* and *Modern Family* portraying dads as more emotionally literate and less clownish. But the half-century run of the incompetent father remains one of television's most durable memes.

The Comic Logic of Undermining Authority

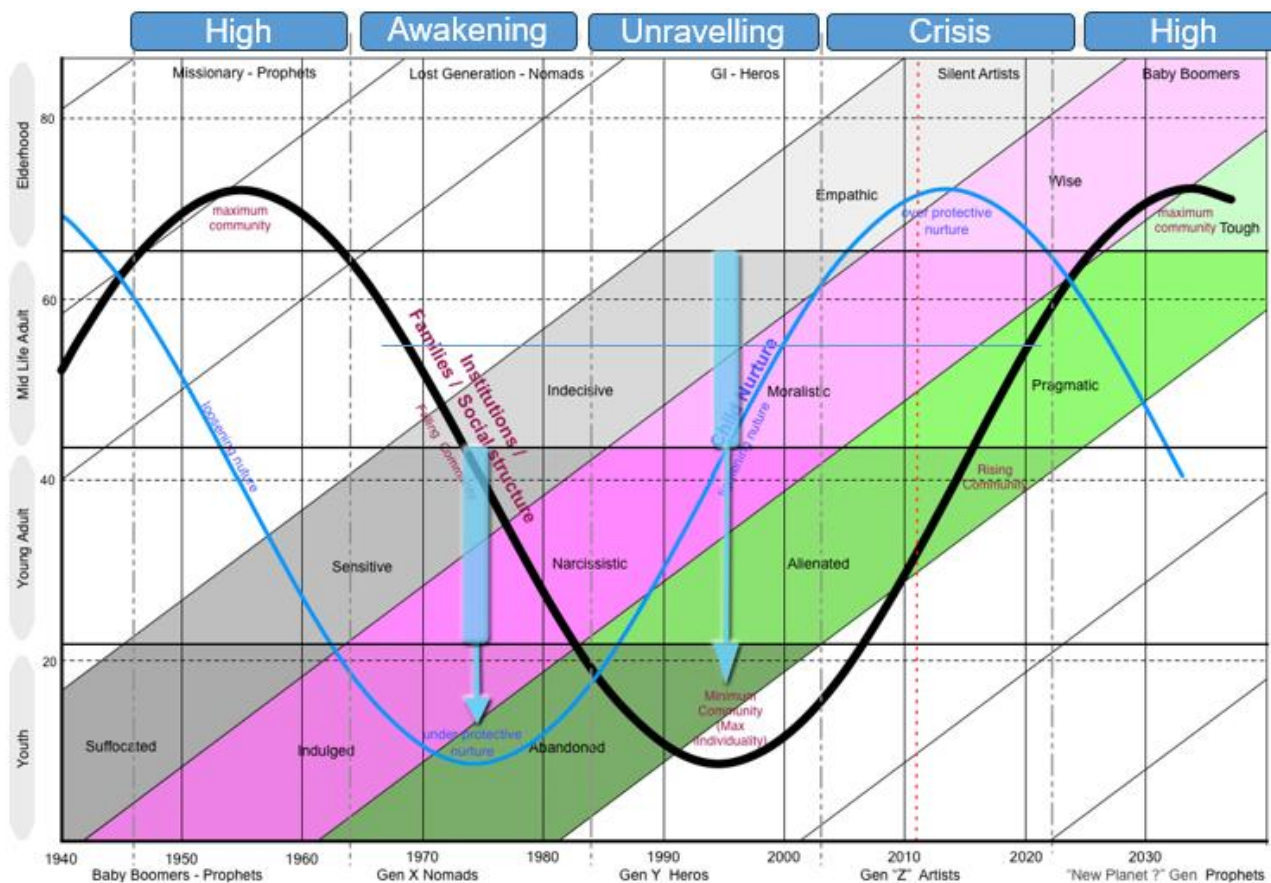
Why do we keep laughing at the same guy? Because comedy's oldest job is to puncture authority. When power feels too absolute, humour restores balance. When the patriarch sits too comfortably on the throne, the fool tugs his beard.

Yet satire doesn't operate in a vacuum; it mirrors the social mood. When civic trust is high and hierarchies stable, audiences *need* jesters to deflate arrogance. When trust collapses, mockery begins to feel corrosive rather than corrective. The sitcom father's dignity – or lack thereof – tracks these moods with eerie precision.

Generations and the Oscillation of Community

Enter the Strauss & Howe's generational-cycle theory. According to their model, history moves through recurring 80-to-100-year "saecula," each divided into four turnings – *High*, *Awakening*, *Unravelling*, and *Crisis* – that together form a full societal cycle.

Crucially, these eras also correspond to swings in what Strauss and Howe call the nation's "sense of community" (black sine-curve in the figure below). In a *High* (such as post-WWII America), communal trust and conformity peak. In an *Unravelling* (the 1980s–90s), individualism dominates and institutions lose credibility. Mid-1950s America sat at maximum community; mid-1990s America hit the trough.



Overlay that curve on our television history and the pattern almost sings.

- 1950s–60s (High): Confident patriarchs – Dad as moral compass.
- 1970s–90s (Unravelling): Satirised incompetence – Dad as punchline.

- 2010s–2020s (Crisis): More cooperative, emotionally engaged dads – Dad as partner and participant.

In other words, the sitcom father's IQ rises and falls with society's faith in itself. When the community is cohesive, we can afford to laugh at authority. When the community fragments, authority itself becomes the joke.

The Generational Masculinity Arc

Each generation also produces its own model of manhood. The fathers of the 1950s represented the GI and Silent archetypes – dutiful, restrained, civic-minded. Their sons, the Boomers, grew up to rebel against that conformity, producing both the ironic anti-hero and the self-help seeker. By the Gen X and early Millennial years, the father figure had become the comic casualty of social change – the man who wanted to help but had lost the instruction manual.

The current turn of the wheel, led by late Millennials and Gen Z, may be rediscovering balance. Their on-screen fathers are flawed but emotionally fluent, equally capable of confession and affection. Phil Dunphy (*Modern Family*) or Randall Pearson (*This Is Us*) don't "know best," but they try hardest – which might be the only credible form of authority in an age allergic to arrogance.

The Mental-Health Question

Here the laughter turns a tad uneasy. Psychologists and sociologists have begun to ask whether the decades-long portrayal of fathers as buffoons has unintended consequences. Studies of expectant fathers show that heavy exposure to incompetent-dad portrayals correlates with reduced confidence in their own parenting importance. In parallel, male mental-health statistics show rising anxiety and loneliness – trends that cannot be blamed on sitcoms alone, but which rhyme disturbingly with the cultural story men have been told about themselves: you are loveable, but not reliable; amusing, but not essential.

It's the shadow side of the court jester: when the king is mocked long enough, no one remembers he ever wore a crown.

Towards a New Archetype

If Strauss and Howe are right, we are now climbing the upward slope of renewed community – a period when societies rediscover collective purpose after decades of cynicism. That shift may demand new father figures: less omniscient than the 1950s patriarch, more grounded than the 1990s buffoon. Dads who lead not through authority or irony, but through empathy and presence.

Comedy, too, will adapt. We may still laugh at fathers, but perhaps with them rather than at them – humour as connection rather than derision. The jester doesn't disappear; he changes jobs. In an age seeking community, laughter's task is to knit us together again.

The Last Laugh

So perhaps the unnamed tech mogul who recently claimed that the 'unrelentingly negative' portrayal of American fathers in sitcoms was becoming toxic had a point. A culture saturated with incompetent-dad jokes can chip away at men's confidence just as surely as endless superhero movies periodically inflate it. The cure, however, isn't to stop laughing. It's to recognise what the laughter says about us.

Every age needs its fools, but we also need to remember *why* they make us laugh. When the fool becomes the only image of fatherhood, the court has lost more than its king – it has lost its balance.

And that, perhaps, is the quiet moral under the canned laughter: as our generational pendulum swings back toward belonging, maybe it's time to give Dad his dignity back. Preferably without taking away his punchlines.

Biology – Northern Lapwing (*Vanellus vanellus*)



The Dance of the Worm-Charmer

Across wet meadows and pastures of northern Europe, the lapwing performs one of nature's strangest dances. Between bouts of gliding flight, the bird pauses on open ground, then begins to "jiggle" – stamping its feet rapidly on the soil as if impatient with the weather. To an untrained eye it's comic, but to a hungry lapwing it's pure strategy.

This behaviour, known as 'worm-charming', is shared by several species including gulls, woodcocks, and plovers. By drumming their feet in fast, rhythmic bursts, the birds somehow persuade earthworms to rise to the surface, where they can be neatly plucked up and eaten.

The Biological Puzzle

Biologists have debated why the worms respond. Two main theories dominate:

The Rain Hypothesis: the vibrations mimic the patter of rainfall. Worms, which breathe through their skin, instinctively move upwards to avoid drowning in waterlogged soil.

The Mole Hypothesis: the same vibrations imitate the digging motions of moles, which hunt worms underground. In this case, surfacing is a defensive escape.

Whether the worms think it's raining or that a mole is tunnelling towards them, the effect is the same: a speedy dash to the surface, and straight into the lapwing's beak.

To increase productivity (i.e. to catch more worms, more easily), the bird must access prey buried beyond the physical reach of its beak. But it cannot lengthen or strengthen that beak without compromising flight efficiency or weight balance. The worms are too deep; the bird is too shallow.

depth of works below surface

	Improving Feature	Deteriorating Feature	Physical													
			Weight	Volume	Surface Area	Perimeter	Length	Width	Height	Depth	Radius	Diameter	Area	Volume	Mass	
Physical	1	Height of Mining Chamber														
	2	Length of Mining Chamber														
	3	Width of Mining Chamber														
	4	Area of Mining Chamber														
	5	Volume of Mining Chamber														
Performance	6	Volume of Mining Chamber														
	7	Volume of Mining Chamber														
	8	Volume of Mining Chamber														
	9	Volume of Mining Chamber														
	10	Volume of Mining Chamber														
Efficiency	11	Volume of Mining Chamber														
	12	Volume of Mining Chamber														
	13	Volume of Mining Chamber														
	14	Volume of Mining Chamber														
	15	Volume of Mining Chamber														
Utility	16	Volume of Mining Chamber														
	17	Volume of Mining Chamber														
	18	Volume of Mining Chamber														
	19	Volume of Mining Chamber														
	20	Volume of Mining Chamber														
Standard Cost	21	Volume of Mining Chamber														
	22	Volume of Mining Chamber														
	23	Volume of Mining Chamber														
	24	Volume of Mining Chamber														
	25	Volume of Mining Chamber														

productivity

14 7 17 19

This rhythmic action achieves several things at once: it covers a wider area than a single static probe, and it stimulates a dynamic response from the worms, exploiting their instinct to move rather than hide. It saves energy, because short, repeated pulses are less tiring than continuous digging or chasing.

Viewed through TRIZ, worm-charming is more than quirky animal behaviour, it's a model of inventive problem-solving. The lapwing uses its environment (the soil) as an

intermediary to transmit information and manipulate hidden prey. It doesn't dig, it doesn't wait, and it doesn't guess. It uses vibration as communication.

The bird thus demonstrates that when direct access is impossible, indirect periodic influence can achieve the same outcome. Engineers might recognise the analogy in ultrasonic cleaning, vibration welding, or even sonar scanning – all modern embodiments of the same inventive logic.

Lessons from the Lapwing

For engineers and designers, the lapwing's dance is a reminder that solutions often emerge not from changing the tool, but from changing the rhythm. Periodic motion can extend influence, amplify effects, and overcome static limits – whether in a workshop, a control system, or a muddy field.

Next time you see a bird “dancing” in the rain, remember it isn't fooling around. It's solving a contradiction, one rhythmic step at a time.

Further Watching:

<https://www.shutterstock.com/video/clip-1096363307-lapwing-bird-hunting-worms-by-tapping-foot>

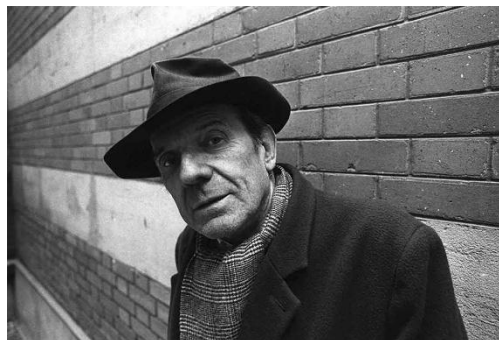
Further Reading:

Perrow, D. (1999). “Avian Worm-Charming: A Review of the Evidence.” British Birds.

Short Thort

The Couple Overfloweth

We sometimes go on as though people can't express themselves. In fact they're always expressing themselves. The sorriest couples are those where the woman can't be preoccupied or tired without the man saying "What's wrong? Say something..." or the man, without the woman saying ... and so on. Radio and television have spread this spirit everywhere, and we're riddled with pointless talk, insane quantities of words and images. Stupidity's never blind or mute. So it's not a problem of getting people to express themselves but of providing little gaps of solitude and silence in which they might eventually find something to say. Repressive forces don't stop people expressing themselves but rather force them to express themselves; What a relief to have nothing to say, the right to say nothing, because only then is there a chance of framing the rare, and ever rarer, thing that might be worth saying. What we're plagued by these days isn't any blocking of communication, but pointless statements. But what we call the meaning of a statement is its point. That's the only definition of meaning, and it comes to the same thing as a statement's novelty. You can listen to people for hours, but what's the point? . . . That's why arguments are such a strain, why there's never any point arguing. You can't just tell someone what they're saying is pointless. So you tell them it's wrong. But what someone says is never wrong, the problem isn't that some things are wrong, but that they're stupid or irrelevant. That they've already been said a thousand times. The notions of relevance, necessity, the point of something, are a thousand times more significant than the notion of truth. Not as substitutes for truth, but as the measure of the truth of what I'm saying. It's the same in mathematics: Poincaré used to say that many mathematical theories are completely irrelevant, pointless; He didn't say they were wrong – that wouldn't have been so bad.



Gilles Deleuze (Negotiations)

News

1%er Book

Well, it took a little longer than expected, but the new 1%er ebook is now finally available for purchase from the SI online shop. No doubt it will also be available from Amazon in the coming weeks, but in the meantime, get your copy here: <https://si-shop.org.uk/the-1percenters-how-new-things-get-done/>

1%er Workshop

And, we're also happy to announce the next date in what's already turning into a series of 1%ers online workshops. 13 and 20 January are the dates for the two four-hour sessions. Book your place here:

<https://si-shop.org.uk/january-2026-the-1-ers-how-new-things-get-done/>

Solving Ethical Contradictions.

We're also happy to announce that, miracle or miracles, Darrell handed over the completed manuscript to the publisher on schedule at the end of October, so the book will be available to purchase from the middle of December. Because we're going through an external publisher this time around, we have no control over the pricing of the book. That said, we are able to offer SIEZ readers a 33% discount by using this link:

<https://ethicspress.com/products/solving-ethical-contradictions>

TRIZ/SI Level 1 Certification

As hinted last month, we are also also happy to announce the launch of our 60-session/30-hour online training programme. Available in content-only and certification versions. The latter involving an 'exam' at the end of the 60 sessions. Sign up here:

<https://si-shop.org.uk/workshops-and-training/>

DangerMouth

Season 3 of Mikey, Shana & Darrell's 'innovation station' podcast officially began with a couple of new episodes in the can and another two to be recorded before the end of the month. Great return-guests in both the first two episodes... which will be live by the time you read this. www.dangermouth.org is the place to go.

New Projects

This month's new projects from around the Network:

- Sport – SI Workshops
- Sport – Invent-To-Order Project
- Education – PanSensic Lens Development Project
- Electronics – Innovation Leadership Workshops
- FMCG – TrenDNA Project
- NGO – Risk Management Plan
- IT – Innovation Capability Maturity Assessment

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