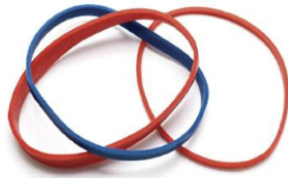


"Absorbing. . . [Mlodinow] skillfully weaves scientific findings with stories of people, events, and the natural world."
—The New York Times Book Review

ELASTIC



Unlocking Your Brain's
Ability to Embrace Change

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Elastic Thought & Emergent Order: Kicking the Politics Habit

April 29, 2023

In *Elastic: Unlocking Your Brain's Ability to Embrace Change*, Leonard Mlodinow explains that our brains engage multiple threads of thought in parallel and conclusions are reached from the bottom up, through the interactions of billions of networked neurons in a process too complex to be detailed step by step. (LM p. 10)

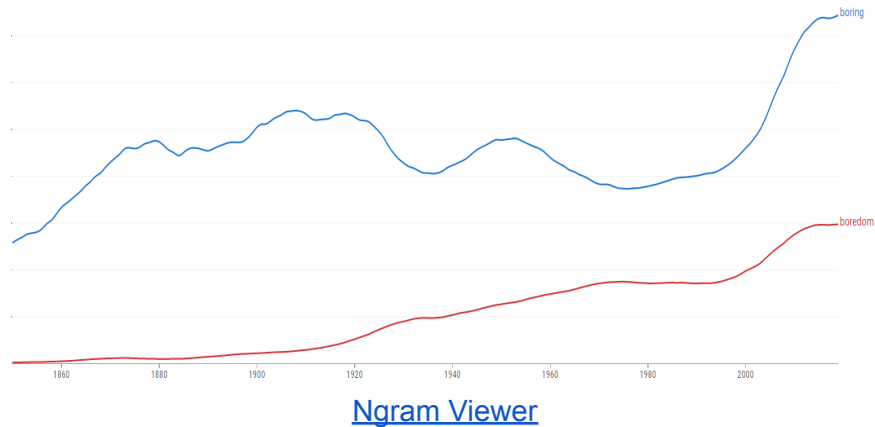
In *Getting Out of Control: Emergent Leadership in a Complex World*, Neil Chilson observes we worry the world is growing too complex for anyone to control ... as if anyone ever could. (NC p. 12) Even in the "simpler" times of the past century, the most ambitious and arrogant "world builders" – Stalin and Hitler – failed to redesign society according to their plans from the top down and more modest, collectivist schemers have delivered unintended consequences as well.

Even those who seem most able to dictate cannot control the most important things in life. (NC p. 15) In trying, they often crush the very things they value and such destruction begins with a lack of understanding of complexity. (NC p. 16)

Understanding emergent order can help policymakers more accurately assess what should be done while avoiding unnecessary and harmful interventions. Indeed, order can be achieved without control. (NC p. 19) That calls into question the very concept of leadership, much less the [legitimacy of power](#) and authority.

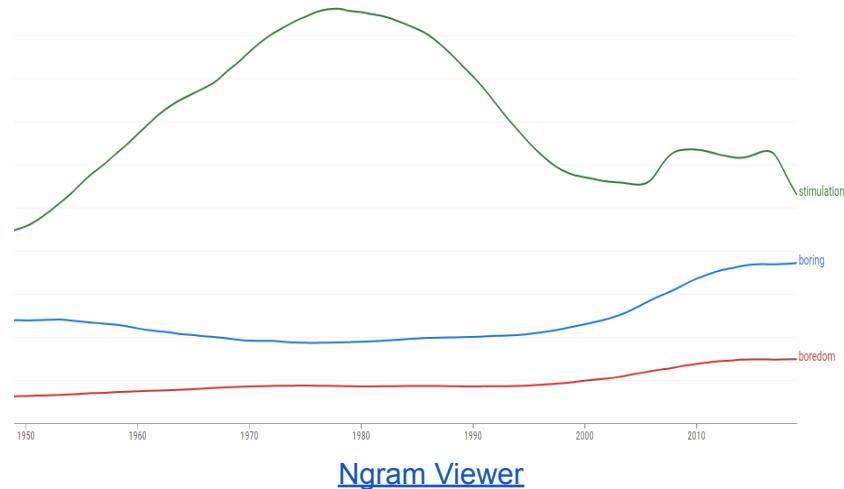
Subservience, acceptance of authority, and tedium used to be the norm and the concept of “boring” didn’t even appear until after the industrial revolution. According to [You.com](https://www.you.com), the word “boredom” was first used in 1852 with the publication of Charles Dickens’ novel, *Bleak House*.

Incidence of the Words “Boring” & “Boredom” 1850 - 2019



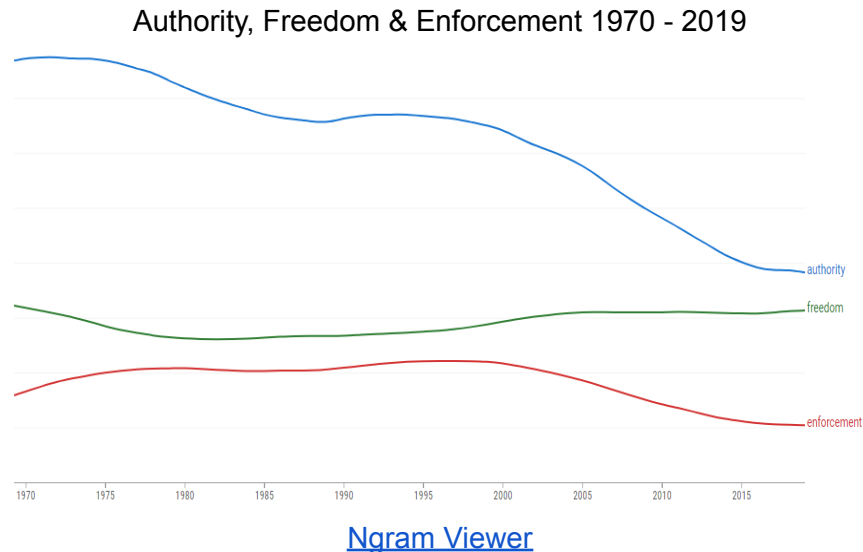
Since then, however, both the availability of stimulation and our thirst for it have grown. (LM p. 20) Now we face a deluge of information and choices that overwhelm our abilities to focus, reflect, and contribute. (NC p. 27) The emergence and rapid development of machine learning/artificial intelligence (ML/AI) agents risk ramping up the deluge even more.

Stimulation, Boring & Boredom 1950 - 2019



Scripted behavior is one of nature’s shortcuts for dealing with complexity, a coping mechanism that usually produces the desired results. While such behavior can be either innate or the result of habit, it often fails in the face of novelty or change. (LM p. 8)

Collectively, behavior is scripted through the institutions we form. Organizations have been granted power as a shortcut saving us from having to make an impossible number of personal decisions. Deference to institutional authority is a scripted behavior, albeit perhaps a declining habit.



Attesting to acceleration of the pace of change, in 1958 the average life span of companies in the S&P 500 was sixty-one years whereas it is now about twenty. (LM p. 5) Moreover, according to [You.com](#), the average life of a new small business is around 5 years, with roughly half of all new businesses failing within that span. By contrast, on average, U.S. federal agencies have existed for around 200 years. An unchanging environment offers those who have found a comfortable niche no urgent impetus to explore or innovate. (LM p. 16)

Complementing elastic thought, evolution has endowed us with a second capacity that is rational, logical, and analytical, thereby enabling us to evaluate circumstances in the context of our goals and to formulate plans to achieve them. (LM p. 9) Our ancestors were undoubtedly tougher than we are today but what saved Homo sapiens from extinction was elastic thinking. (LM p. 10)

Now the issue is how the institutions we form and reform might best facilitate our well-being in the decades ahead, as our world continues to virtually shrink, vastly more information is available far more rapidly, and each of us is exposed to increasing complexity. That question takes on special meaning for those staking claim to the state's exclusive right to the legitimate use of violence to achieve their ends. As Chilson advises, we should choose and shape our institutions wisely, from the bottom up. (NC pp. 260 - 261)

With respect to potential changes, unless threatened by adverse consequences, our natural instinct is to be attracted to novelty. That trait is called "neophilia". (LM p. 19) We've always been capable of making adjustments. As one of our defining traits, it is embedded in our genes. (LM p. 20)

Like anything taken to excess, an extreme proclivity for adventure may result in negative consequences, including reduced life expectancy of “pioneers” living on the edge. However, the population can benefit from their discoveries. (LM p. 25)

The rational, risk-avoiding parts of our brains don’t fully develop until about the age of twenty-five. (LM p. 27) Perhaps that may account for the youthfulness of many pioneers, as well as many miscreants. The bottom-up processing of elastic thinking arises from the complex and relatively “unsupervised” interaction of millions of neurons, and it can produce wildly original thoughts. (LM p. 46)

Countervailing against the benefits of that capability, in today’s choice-rich environment, we may become fatigued by repeated demands as we make decisions, each rooted in emotion. As with information overload, we may be overwhelmed by choices. Both types of overload stimulate the primitive parts of our brains that respond to fear in life-and-death situations, thus causing stress and undermining rationality as well as self-control. (LM p. 55)

Thus, even though we are naturally attracted to novelty, we feel threatened by change which may render us powerless to resist, particularly when it may adversely impact us or violate our deeply held personal beliefs. In the case of the exercise of the coercive power of the state – such as through voting – political polarization inevitably results. The only question is how far the exercise of such power may be taken and at what point and by whom violence may be deemed to be the only emotionally driven alternative.

In the case of U.S. national politics, Lee [Drutman characterizes](#) that problem as the “two-party doom loop.” To escape the partisan death spiral, he concludes, “The urgency for a more competitive and innovative politics has never been greater.” Not only to deal with complexity but also short-circuit the doom loop, power and authority must be divested away from the center.

Reinforcing that thought, Raghuram [Rajan says](#), “Markets and the state have not only separated themselves from the community over time, they have also encroached on activities that strengthened bonds within the traditional community.” Moreover, when the state imposes its sense of order, Chilson observes, it may disrupt communities and thus increase the perceived need for further intervention, thereby creating a self-fulfilling prophecy. (NC p. 161)

Failing to reverse the self-reinforcing trend of increasing centralization of power in [The Politics Industry](#) bodes poorly for the future of communities and as well as the body politic as a whole.

Meanwhile, for everyday decision-making, the remedy for choice overload is simply to apply a strategy of accepting the first satisfactory option, rather than continuing to look for one that is optimal. (LM p. 55) Paradoxically, exhaustive analysis doesn't lead to greater satisfaction. Instead, it tends to cause regret and second-guessing. (LM p. 56)

On the other hand, such shortcuts take on increasing risk as the coercive power of the state is called into play. Yet politics is virtually designed to generate such risk, since affiliation with a party is a convenient short-cut for determining how to vote and losing elections means loss of control, thereby generating fear and loathing.

There is no such thing as a win/win proposition in politics. Moreover, as more and more power is centralized, the stakes increase and it becomes harder and harder for “frenemies” to coexist in the hallowed halls of government, much less in the hysteria that often reigns in social media as well as the animalistic behaviors prevalent in the streets of protest.

Fortunately, if we choose to use it, we human animals are empowered by our non-reptilian prefrontal cortex to rise above the automatic response to environmental triggers of scripted behavior. (LM p. 83) While we cannot control what others do, we can choose how to react. Indeed, our own actions are the only thing over which we have substantial control. (NC p. 258)

Our executive brain enables us to rise above habitual and automatic behavior by suppressing some thoughts and activating others. However, suppressing seemingly ill-advised or irrelevant ideas can impede original thinking. The breadth of thought is determined by a balance of bottom-up and top-down operations. (LM p. 84) That tension is playing out quite evidently in the efforts of partisans and woke mobs to censor and cancel, if not physically attack, those who dare to disagree with them.

Our internal reward system evolved not just to provide pleasure when we achieve our goals but also to predict the consequences of what we are doing and reward us at each step along the way. (LM p. 58) Exercising elastic thinking skills – such as idea generation, pattern recognition, divergent thinking, and imagination – is inherently rewarding. Indeed, material recompense can impede the pleasure engendered by such activities. (LM p. 62)

Offering extrinsic rewards for *intrinsically* enjoyable behaviors can be counterproductive and monetizing creative output may actually disrupt the process of innovation. (LM p. 63) Thus, those who seem to believe that greed is a primary motivator of innovative entrepreneurs may be doing a disservice not only to business enterprises and markets but also to the public.

With reference to the saying that it is the journey that counts, the value of the end point to society is often unknown until long after its creation. (LM p. 69) Moreover, one of the enduring lessons of the Total Quality Management (TQM) movement is that the product cannot be right unless the process is ... except by chance. Serendipitous success may be fine for purposes of recreation and entertainment but getting the process right is critical for issues that truly matter, while pursuing continuous improvement.

Of all intellectual endeavors, academic science has been perhaps driven most from the bottom-up. (LM p. 84) However, that dynamic may be changing in an era of increasing political polarization and mistrust, particularly with respect to the academic elite who rely upon government grants for recompense. The inherent bias and conflict of interests are obvious.

Politics pollutes science. The higher the level of political dictation, the greater the pollution. Referencing politically motivated polarization, [Jerry A. Coyne and Anna I. Krylov opine](#), “Science that doesn’t prioritize merit doesn’t work, and substituting ideological dogma for quality is a shortcut to disaster.”

Borne on centralization of power, mistrust in merit-based science is particularly unfortunate because, left unchecked, change can occur very rapidly from the bottom up. Why would people not welcome the advice of experts on how best to achieve their goals were it not for the threat that such “advice” will be imposed upon them from on high, regardless of whether they choose to accept it or not? What might be a better prescription for fomenting opposition and risking failure than “advice” without [informed consent](#)?

Dietrich [Dorner has noted](#) that we “court failure in predictable ways.” Among them is “being blinded to emerging needs and situational changes.” Chilson says institutions are a form of emergent order. They engage feedback loops aligning incentives and those loops are about choices and failure to meet the needs of their stakeholders. (NC p. 242)

However, corporations deemed too-big-to-fail and bureaucracies ostensibly charged with serving the public are substantially insulated from both change and stakeholder feedback because politics and inertia are what ultimately matter most to them. Meanwhile, attempting to impose our emotionally driven will upon each other through politics may be another pretty effective means of courting failure.

Paradigm shifts often leave previously successful and thus powerful people and organizations in the lurch. As incumbents, sometimes they are able to block or delay advances that would serve the long-term interests of society at large. (LM p. 92) Repeatedly throughout history, governmental leaders have played a role in attempting to stifle innovation. As the pace of change accelerates, the number of people who fear negative consequences for themselves, their families, and their communities is likely to grow. Accompanying the rise of such fear is the risk of politicization of issues and imposition of regressive forces by government.

Personally, those who are open to paradigm shifts have had advantages because they are more adaptable to evolving circumstances. (LM p. 93) However, that advantage is put at risk when power becomes sufficiently centralized to overwhelm the free exercise of divergent expression, particularly and perversely in the name of equity and inclusion.

With respect to those two values, although the pace and breadth of the diffusion of advanced technology has vastly accelerated, it cannot be made available immediately to everyone on earth, all at once. Consequently, ever since the industrial revolution, inequality has been an inevitable result of innovation. The relevant issues are how wide the gap may grow and, conversely, how rapidly the masses gain the benefits of progress, thereby realizing standards of living unavailable even to the wealthy of the not-so-distant past.

In pursuit of progress, the process of creating new representations has been difficult to automate but it is often key to problem-solving. (LM p. 98) Indeed, clearly expressed problems virtually define their own solutions. Note, however, the dual meaning of the term “representation” in this context with respect not only to the expression of theoretical concepts but also the concentration of power in the political elite.

Not only must problems be accurately and clearly understood but what, if anything, to do about them should be determined by affected stakeholders, on a widely distributed basis. Toward that end, it will be interesting to see how the rapid advancement of ML/AI agents may affect the balance of top-down dictates relative to bottom-up emergence of sustainable solutions to social problems.

Depending upon how the technology is deployed, the balance could tip either way. If its power is aggregated among a small elite, the future of the masses may be in dire jeopardy. On the other hand, if it is widely shared, market failures can be greatly reduced while the efficiency and productivity of value freely exchanged can be vastly increased.

“Restructuring” is the term psychologists apply to the process of altering the frameworks through which we analyze issues. Often it accounts for the difference between finding answers or coming to an impasse. (LM p. 99) Unfortunately, however, as applied in the realm of politics, restructuring commonly means centralizing evermore power. Moreover, as centralization mounts, the political powers-that-be become increasingly entrenched and capable of resisting adaptation to changing circumstances.

Avoidance of such a self-defeating impasse requires reframing the issue of self-governance to mean what it actually says – governing *ourselves*, each of us independently within and through the communities and networks of which we are members and not through an elite cadre of partisan politicians claiming the right to “represent” us. While politics is burdened with an archaic sense of that concept, Chilson notes that social media platforms face no such artificial constraints. Thus, they are capable of creating tools empowering users and groups to govern themselves and their communities. (NC p. 205)

Within our personal networks, an important influence in our ability to conceive new representations comes from outside ourselves – from our professional, social, and cultural norms. (LM p. 103) Can anyone doubt that the problems we are now facing require not only new norms but also innovative representations and thinking? If for no other reason than simpler problems have largely been solved? Is it not likely that many individuals, in many places, may have conceptualized innovative solutions to many important problems and that many others might coalesce around them, if only they were aware of those ideas?

Much has been said about the size of the human brain and especially our prefrontal cortex, but its degree of connectivity may be even more important to our intelligence. (LM p. 119) Association neurons allow us to think and have ideas rather than merely react. Breakthrough ideas commonly stem from the associations and recombinations of what is already present in

the recesses of our minds. (LM p. 121) While politics focuses connections within one's own party, it dictates not only disconnection with but also diminishment of the influence of others.

It has become a truism that the next campaign begins the day after the previous one ends and most of the focus is on raising money so as to be able to outspend opponents on campaign advertising in the next election cycle. Meanwhile, in the news media the problem has become even worse. Breaking news must be spewed throughout each day in the rush to beat the competition in attracting eyeballs and inflaming passions while generating ad revenue.

Aside from the polarization created by those self-serving dynamics, the rush is also counterproductive in the sense that research shows a positive correlation between procrastination and creativity. Delaying conscious attempts to solve problems and make decisions affords us time to accommodate episodes of unconscious consideration. (LM p. 126) While adopting the first option that seems acceptable may be fine for everyday decision-making by individuals, for matters of public and national importance the impact of imposing untried and untested "solutions" upon everyone at once may be exceedingly bad, if not disastrous.

With respect to delaying tactics in the realm of U.S. politics, those who care about the sustainability of the institution support the right to filibuster in the Senate while others seem to care only about winning, by running over those who disagree with them. In that sense, partisan representation may be a bigger part of the problem than the solution when societal consensus might be achieved more rapidly and sustainably from the bottom up.

Speaking more broadly of the benefits of procrastination, Mlodinow says:

... a lack of downtime is bad for our well-being, because idle time allows our default network to make sense of what we've recently experienced or learned. It allows our integrative thinking processes to reconcile diverse ideas without censorship from the executive brain.

It allows us to mull over our desires and shuffle through our unattained goals... That gives our bottom-up elastic thinking networks the opportunity to search for creative, unexpected solutions to tough problems...

It's ironic, but the technological advancement that makes elastic thinking ever more essential also makes it less likely ... we have to fight the constant intrusions and find islands of time during which we can unplug... (LM p. 125)

As time and circumstances permit – when we're not engaged in self-preserving [flight or fighting](#) – within our unconscious minds the two hemispheres battle to have their ideas accepted by our executive brains and passed to conscious awareness. However, the anterior cingulate cortex (ACC) apparently acts as a judge influencing the proceedings. It may engage and act to control the relative strength with which the two hemispheres are heard. (LM p. 144)

If we keep struggling, our ACC may kick in and our most original ideas may begin to surface. (LM p. 145) As for how the ACC does that, [You.com says](#):

There is currently no clear consensus on exactly how the anterior cingulate cortex (ACC) controls which thoughts are elevated to consciousness. However, the ACC is known to play a role in attention allocation and decision-making, which may contribute to its ability to control what thoughts are brought to the forefront of consciousness.

Additionally, studies have suggested that the ACC may be involved in error detection and conflict monitoring, which could also play a role in controlling conscious thought. Some research suggests that the ACC may work in conjunction with other brain regions, such as the prefrontal cortex and the amygdala, to control conscious thought processes and prioritize which information is processed more readily.

Further research is needed to fully understand the complex mechanisms involved in conscious thought and the role of the ACC in these processes.

Surely, as far as collective action is concerned, that's cause for exploration and experimentation from the bottom up and not for imposition of politically biased powers-that-be from above. Moreover, in the case of public objectives, the merit of ideas should be based upon reliable performance metrics demonstrating not only positive results but also sustainability and minimization of adverse consequences in the long run.

[Section 10](#) of the GPRA Modernization Act (GPRAMA) directs U.S. federal agencies to publish their performance reports in machine-readable format, and when they begin to do so, it will be easy for value-added intermediaries to make such information readily comprehensible to stakeholders. That is good practice not only for agencies at all levels of government, worldwide, but also all organizations whose plans and reports should be matters of public record. Among them are corporate social responsibility (CSR) plans and reports, particularly those of the developers of ML/AI applications.

As U.S. Supreme Court Justice Louis Brandeis famously asserted, the States are the laboratories of democracy, but for that matter, why not push the experimentation down to local governments, nonprofits, and community organizations as well?

Since many of the States and local jurisdictions are becoming clearly defined politically as “red” (Republican) or “blue” (Democrat), the stage is well set for [A/B testing](#) to learn which policies are more effective, based upon the respective values held most dear by their partisans. That assumes, of course, the political powers-that-be don't forcefully assert themselves to impose order prematurely from the top down to protect their incumbency.

At a minimum, as [suggested by Ilya Somin](#), people should be free to vote with their feet by leaving jurisdictions imposing policies inconsistent with their values. To some degree, [that is occurring](#) not only within the United States but particularly internationally.

Faced with tough problems, impatience can lead to suboptimal solutions while precluding prospects for discovering better opportunities. (LM p. 146) Meanwhile, functional fixedness may constrain the breadth of new ideas in the context of tool use. (LM p. 156) Hannah Arendt defined “frozen thoughts” as deeply held ideas and principles developed long ago and no longer questioned. (LM p. 158)

Fixed thinking stems from an unquestioned orientation that determines the way problems are framed or approached. Rising above frozen thought requires what Arendt called “critical thinking.” (LM p. 159)

In a similar vein, Chilson notes that we can form habits without consciously intending to do so and the emergent nature of habits is what makes them powerful and dangerous. They constitute relinquishing conscious control over decisions and actions, and since they result from an emergent process, they may be highly resistant to changing circumstances. (NC pp. 214 & 215)

For example, unquestioning faith in fuzzy notions of democracy – based upon majority or even plurality votes – may blind us to better means for achieving our common and complementary objectives. Since when did dictating to minorities become socially acceptable? Doesn't that notion deserve some critical re-thinking?

It is ironic that frozen thinking is a particular risk among experts. (LM p. 159) Political “experts” are unlikely to be capable of, much less motivated to come up with creative ideas obviating the need for the exercise of politics itself. “Dogmatic cognition” is “the tendency to process information in a manner that reinforces the individual’s prior opinion or expectation.” (LM pp. 168 & 169) Politicians are nothing if not dogmatic and the most successful tend to be demagogues, the power of whose rhetoric vastly exceeds the wisdom of their words.

Dogmatic thinking can be reduced and one of the most effective ways is to introduce discord into intellectual interactions. (LM p. 169) That was the intent of the framers of the Constitution and there is certainly plenty of dissension in politics today.

Theoretically, dissent can not only sway us on the issues at hand but it can also help thaw frozen thinking in unrelated contexts. Unfortunately, those most prone to dogmatic cognition may be reluctant to tolerate opposing views. What'smore, if they occupy positions of authority or possess less formal power, such as through mob rule, they commonly punish dissenters. (LM p. 170) That is surely the case in politics and government, through the assumed legitimacy of the power of the state to engage in violence to uphold its authority.

The presence of people with differing points of view helps to liberate groups from ingrained assumptions and expectations, knee-jerk actions, and groupthink. It fosters consideration of more options, leads to better decisions, and enables people to respond better to change. (LM p. 171) That's why viewpoint diversity is important. However, creating such an atmosphere

requires reducing the stakes, by divesting power away from the center. Otherwise the risks are simply too great to the parties on the “losing” side.

While elastic thinking is important in science as well as enlightened governance, analytical thinking is at least as important – to tame the unrestrained generation of new ideas and to challenge and develop them. (LM p. 195) According to [You.com](#), requirements for trustworthy analyses include:

Validity ~ The analysis must measure what it claims to measure and be relevant to the research question or objective.

Reliability ~ The analysis must produce consistent and accurate results, meaning that the same data input should produce the same output each time.

Objectivity ~ The analysis must be free from bias or personal opinion, and the methods used for analysis should be transparent and replicable.

Representativeness ~ The analysis should use a sample that is representative of the population being studied to avoid bias and inaccurate conclusions.

Robustness ~ The analysis should be able to handle unusual or unexpected data and still produce meaningful results.

Transparency ~ The analysis process should be documented and steps taken to ensure the quality of the data throughout the analysis process.

Ethical considerations ~ The analysis should be carried out ethically and abide by any relevant ethical guidelines or regulations.

In no realm is such analytical thinking more necessary than the exercise of the legitimate use of coercion by the state through [The Politics Industry](#). And in no domain is it more important to divest power away from the center.

Truly Connected [communities of result](#) (CoRs) represent a far more hopeful path to a brighter future than more of the same-old-same-old frozen thought embodied in good, old-fashioned politics as usual ([#gofpau](#)).

By building CoRs together from the bottom up, we hold within our grasp the potential to kick the habit of politicizing way too much of life, thereby unleashing the transformative power of elastic thought and emergent order in the digital age. Let's not permit the Luddites who view politics as an irresistible and irreversible force make their self-serving perception a self-fulfilling prophecy.