Principia Politica

Nassim Nicholas Taleb
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Figure 1. Monofractal: layers of self similarity in natural systems built bottom-up from simple rules.

FAKE AND REAL DISTINCTIONS

Once we move away from the verbalistic, use complexity theory, uncertainty approaches, information theory, and probabilistic rigor to look at politics with the same eyes as when we examine highly dimensional interactive elements such as nature, biological systems, internet networks, and medical issues, we can see that most of the tension resides between

> Embedded, complexity-minded, multiscale/fractal localism (politics correctly seen as an ecology/complex adaptive system),

and

> Abstract one-dimensional universalists and mono-culturalism (politics mistakenly seen as a top-down engineering project).

We note that the "left" vs. "right" distinction is something verbalistic and often incoherent –and that at many levels. Scale, for many functions, matters more than the political regime.

The best way to summarize Fractal Localism (which we capitalize) is by its opposite: abstract universalism.

CONTENTS

ORGANIZATION

The book is organized as follows. We introduce the Incerto project to link it to the current treatise. We then present general principles in II, followed by specific articles of conduct and general rules in the articlex, that is section III. We have specific questions and answers in Quaestiones, section V.

A structured summary of complexity and issues that differ from the common approaches to political philosophy is in the

Figure 2. Self organization: a flock of birds exhibiting swarm behavior.

final section VII.

"The man of the system .... seems to imagine that he can arrange the different members of a great society with as much ease as the hand arranges the different pieces upon a chess-board. He does not consider that the pieces upon the chess-board have no other principle of motion besides that which the hand impresses upon them; but that, in the great chess-board of human society, every single piece has a principle of motion of its own, altogether different from that which the legislature might chuse to impress upon it." Adam Smith, *The Theory of Moral Sentiments*.

I. THE INCERTO PROJECT

> **Background: The Incerto**
>
> *The Incerto (of which this is a part) can be summarized as follows: while there is a high uncertainty (and causal and probabilistic opacity) in the world, what to do about it –which option to take– is always certain.*
>
> *Furthermore, paradoxically, the more uncertain the world's outcomes are, the more certain the optimal policy. It is the most prudent one with the most convex outcomes, that is, the one that, first, is precautionary and insures survival and, second, carries the most beneficial second order effects.*

The idea is to (re)build political and economic systems based on axiomatic and derived principles that accommodate uncertainty and fragility:

1) Dynamic, never static (i.e. no analysis designed for single period should ever be used dynamically)
2) Multiscale, never single scale (i.e. no interpretation

should extend beyond the scale for which it was designed)

3) Precautionary at higher scale, i.e. the business of the state is what risk management and control that cannot be done at lower levels.

Commentary

Absence of information is, simply, uncertainty. As an example, if you are *unsure* about the reliability of the airline, you drive or take the train; if you *do not know* whether the water is poisonous or not, you just avoid drinking it. Many modelers fail to realize that model uncertainty and disagreements about, say, a certain policy, is itself potent information that command the maximally prudent route.

As an application to climate change: the most contradictory the models, and the wider the gap between their results, the more uncertainty in the system which calls for precaution, even if one disagrees with the models.

II. PRINCIPIA

> **Principle 1: (Scaling)**
> **Never describe, compare, or assess the effectiveness of political systems without reference to scale.**
> *Fractal Localism: Between the concrete individual and the abstract collective there are a certain number of **tangible** fractal gradations.*

> **Corollary 1**
>
> *An immediate implication: politics is not scale-free. One can be*
> *"libertarian at the federal level,*
> *Republican at the state level,*
> *Democrat at the county level,*
> *socialist within the commune,*
> *and*
> *communist at the family and tribe level."*

Commentary

To understand localism: On August 6, 1806, the Holy Roman Empire was abolished. "Goethe noted that day that the people staying in the same inn as him were far more interested in the quarrel between their coachman and the innkeeper than in its demise."[1].

The conflict "nationalism" vs "globalism" is ill defined. Both ignore fractal strata under monolithic absorbing concepts.

More technically, groups are never one (you) or infinity (mankind plus living things), but renormalize into clusters of intermediate sizes.

Interactions are local at different hierarchies. No local interaction should be superceded by command and control guidance.

It is easier to gauge micro-performance than macro-performance, particularly to the visibility of some side effects and the more limited percolation of the local.

Background

The fragility interpretation: scalability is a simple property of an object that has a concave or convex response. For

One person to a future spouse:"I will deal with silly and insignificant mundane matters: where to live, what and when to eat, where to shop, what to buy, where to educate the children, where to go on vacation, etc. You will focus on centrally important and vital questions: geopolitical relations, tensions with Russia, the future of technology, space travel, and such indispensable matters."

Let the State do the *important* things...
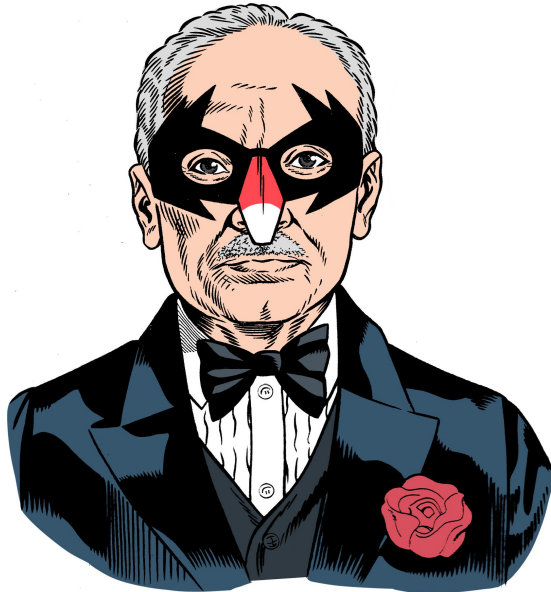
@BLACK_SWAN_MAN

Figure 3. For Hayek, tacit knowledge embedded in economic and social exchange is way too sophisticated to be expressed explicitly and made into policy by the social planner.

instance an elephant has more fragility than a mouse for an equivalent proportional random shock. See further down and in *Antifragile* [2].

The impossibility of comparing two items of different size without scale transformation is illustrated as follows. Take a human and increase his or her size. Contact with the floor would grow by squares, while the volume is cubic, therefore increasing the pressure on the bone architecture. The compensation would change the shape of the limbs. Few realize that, unlike in the movies, a "giant" human would end up having to look like an elephant –and a tiny human would look like an ant.

Contra and Limitations

One cannot compare scales across heterogeneous items. A scale for restaurants and land animals differs from the one for distribution houses and marine mammals.

Scale is gauged empirically.

Principle 2: (Greek vs Roman)
The main differences between political attitudes should be judged in terms of effectiveness, never intentions.
The real difference in politics isn't the "right" vs "left" verbalistic gradation but rather "Greek" vs "Roman".
"Greek": puts theory above practice.
"Roman": puts practice above theory.

Commentary

Clearly this is not an ethnographic statement (in fact Byzantines were deliberately "Roman" in that, as well as many other, senses of the word). It is inspired from the fact that the Romans got their political system by tinkering, not by "reason". Polybius in his Histories compares the Greek legislator Lycurgus who constructed his political system while "untaught by adversity", to the more experiential Romans who, a few centuries later, "have not reached it by any process of reasoning [emphasis mine], but by the discipline of many struggles and troubles, and always choosing the best by the light of the experience gained in disaster" (Plutarch).

Other inspirations: the episode when Cato the elder sent Greek philosophers packing; Plato's disastrous chance at governing in Sicily; the Republic, perhaps what Popper deemed the most destructive book ever owing to Plato's intellectual brilliance.

Note that Anglo-Saxon common law would be the best idea of a self-correcting model.

Background

The difference goes deeper; it has much to do with both teleology and acceptance of opacity. The "Greek" assumes that the fact that I) *there is a cause to things* immediately implies that II) *such cause is visible to them*, without making a link between I and II.

Contra and Limitations

Accepting the interactive and local behavior of complex systems doesn't mean raising one's hand and stepping aside completely. It means that:

1) priority is first given to the self-organizing attributes, which is not exclusive
2) Under opacity the focus is on the unknown, not the known
3) Complex system have survived, which is potent statistical and phenomenological information (see further with ergodicity)

> **Principle 3: Liberty should be scale invariant.**
> *Liberty is fractal; it should be exercized to all collective units at all scales, that is, communities qua communities, all the way from $n = 1$ to $n = \infty$, with minimal scale transformation.*

An individual is free under constraints; so should his or her community under different constraints.

We have moral revulsion at states of serfdom; none for tribes in similar situations.

Some entities try even to eradicate collective "identities".

Commentary

This fractalization allows an intellectual bridge between localism and libertarianism; rather shows how libertarianism implies localism but not necessarily the reverse.

It is inconsistent to allow an individual a certain degree of freedom, but not fractalize it to groups of individuals constituting a political unit.

It is even more inconsistent to allow an economic entity, say a corporation, the same freedom and almost similar rights as individuals, but not do so to political units.

Tribes should be free under the condition that they accommodate the freedom of other tribes.

Contra and Limitations

The right to secede is a problem if it entails violations of commitments, and carry side effects, but such a right remains inviolable, just as individuals should have the right to change citizenship.

> **Principle 4: Never use terms such as progressive or conservative without reference to a rate of change**
> *Progressive and conservative are ill defined terms, verbalistic labels. It is required to specify a rate of change for every specific domain.*
> *Rationally progressive means embracing progress by accepting a certain rate of change deemed optimal.*
> *Too high a rate of change cancels the gains from previous mutations; while too slow a change leads to misfitness.*

Commentary

Again "conservative" or "progressive" are meaningless in that sense. Both may just want progress at different speed

and lose context under gargling verbalism and ill-defined terms.

This is one instance where the distinction "left" vs. "right" is verbalistic, obsolete, and downright silly.

Consider that too fast a rate of change leads, simply, to regression. The concept of "ratcheting up" (that is, locking up at a new state deemed preferable to the previous one) is developed in *Antifragile*.

The speed of change is a direct function of the fragility of the system. Aquinas: "a blind horse should be slow" (via R. Read).

Note the metaphor: driving at 600 mph is certainly never the *fastest* way to get somewhere.

Background

There was a time where "conservative" was, owing to verbalism, considered backward, represented as resisting *all* progress. Hayek had to go out of his way to separate himself from conservatives in his *Why I am not a Conservative* [4], prompting a chain of such denial of guilt, with Buchanan's *Why I too am not a Conservative* [5]. All these discussions are grounded in lack of sophistication in complexity, and misunderstanding of the relation between speed and fragility or, more generally, the notion of tail risk in interactive systems.

Contra and Limitations

It is hard to assess if a new state is "better" than the previous one without relying on specific metrics and systems of value; such metrics can be (as has been the problem with metrics) incomplete and easily gamed.

> **Principle 5: (Non-aggregative properties of morality and so-called pursuits of truth)**
> **Never make moral inferences about an aggregate or a group from attributes of individual members and vice versa**
> *Under adequate legal and institutional structure, the intentions and morality of individual agents does not aggregate to groups. And the reverse: attributes of groups do not map to those of agents.*

Background

The standard mechanism is well grasped: competition makes prices adequate by pushing them towards the mar-

Compare Popper's utopian engineer to the piecemeal engineer, in the *Open Society* [3], Vol I.
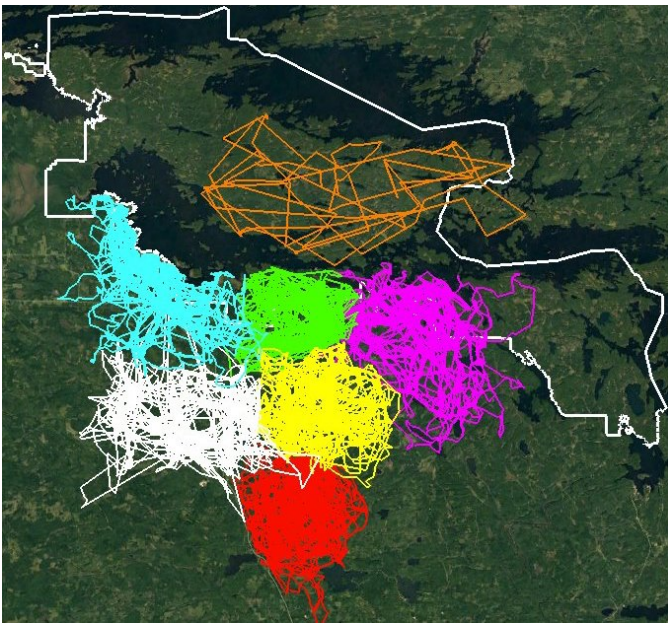
Figure 4. Movement of packs of wolves over the summer of 2018. *Voyageurs Wolf Project*, h/t Gore Burnelli. These wolves speak the same language and have the same religion. Yet, there are separable entities.

Figure 5. To understand Isocrates' rule for international affairs from multi-scale localism, keep scaling the notion up.

gin; price formation has nothing to do with the individual intentions of agents. But it is the second step, the wedge between intentions and outcomes, and, more generally, scale transformation, that is not generalized.

It is easy to get that the reintroduction of predators such as wolves in the U.S. and Europe would lead to the flourishing of other species, by the logic of interactions and scales. Translating that into socioeconomic life appears to be hard.

Commentary

Mandeville argued (correctly) that "vices" in the Christian sense, such as the desire for luxury, represent fuel for economic activity.

Consider that by buying expensive perfume to satisfy your vanity, you help pull people out of poverty.

It is accepted that capitalism has, as of the time of writing,

pulled a billion people out of poverty, nearly eliminated childhood mortality, increased the life expectancy of people in places where sanitary conditions made it dire, etc. But the next step, "by whom", is rarely evoked.

There is neutralization at the group level.

Note that people live under the illusion that if science works in getting us closer to truth, it is the result of the fact that on balance individual scientists are attempting to get us closer to truth. This is clearly false under scale transformation; it is similar to the aggregative properties of markets: scientists might be just trying to pursue self-interest and it is the rules that allow the truth to progress *in spite* of the attributes of the individuals.

Contra and Limitations

Make a distinction between vices that harm the agent and those that harm others.

One may hold high standards for private virtue. But it is inconsistent to use the argument of such morality on grounds of public good unless one can also accept absence of scale transformation.

> **Principle 6: (Isocrates)**
> **Powerful countries need to apply the silver rule in foreign affairs by treating weaker ones the way they would like to be treated if the roles were reversed.**

Commentary

Avoid golden rules (a la neocons). Golden rules ("treat others the way you'd like to be treated") invite busybodies to change other people's lives, while silver rules ("don't treat others the way you wouldn't like to be treated") is more robust.

Silver rules require skin in the game (cf pple), though necessary but not sufficient.

Modernizing Hammurabi's rule.

> **Principle 7: Risk asymmetries (Multiscale)**
> **No risk asymmetries should be present in the system: every single person and every single entity needs to have skin in the game.**

Sometimes we get the reverse, sayings about good people collectively bad: *Senatores boni viri senatus mala bestia* (Senators are good people, but the Senate is a bad animal), falsely attributed to Cicero.
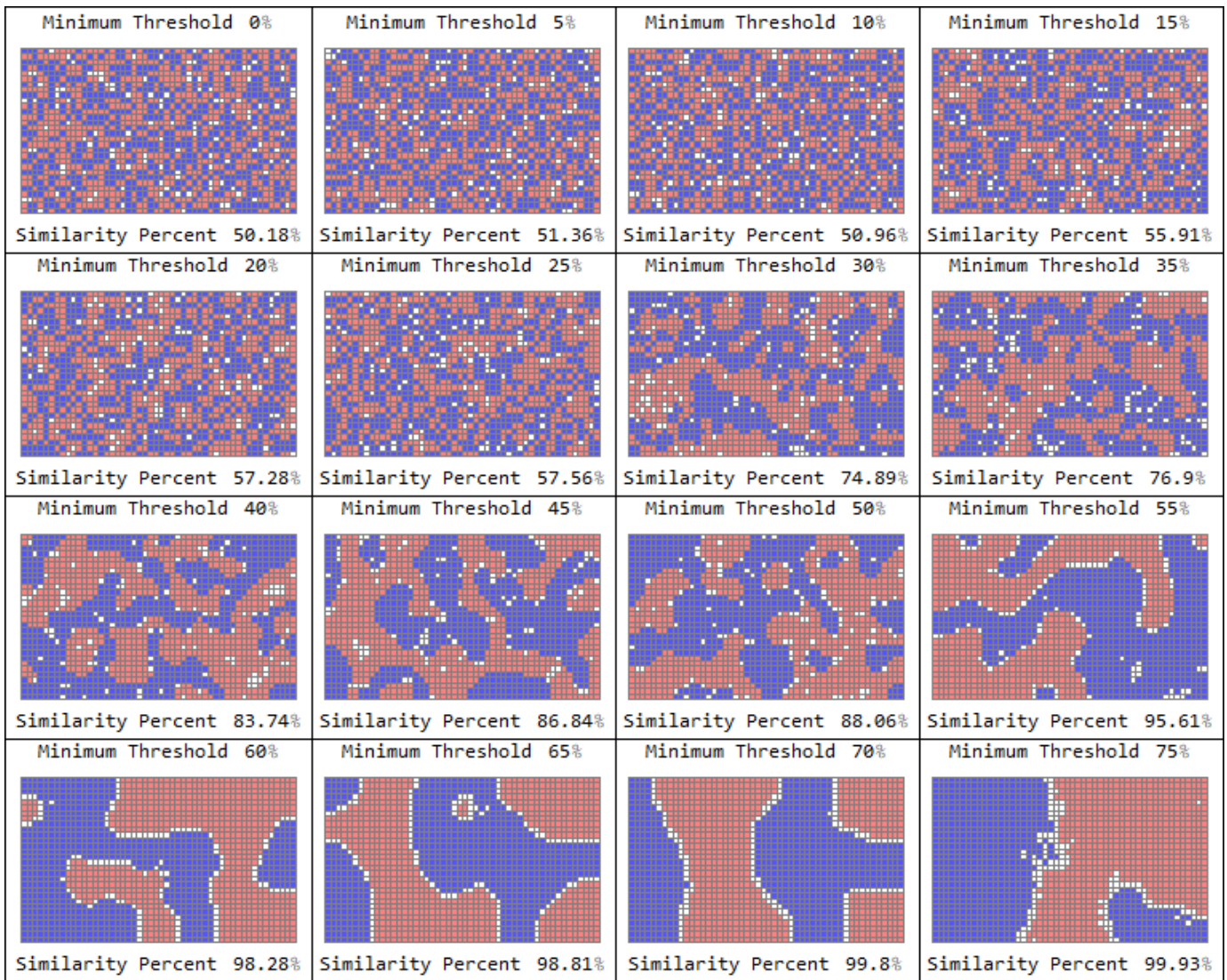
Figure 6. **The mechanism of aggregation of individual preferences.** There are two tribes, the red and the blue,; each square is occupied by individuals or empty (left in white). Each person has a preference of not being in the minority, expressed as the minimum threshold x% of people of the same tribe they would like to have as neighbors. We start by allocating people randomly on the map, and they move if their preferences are not met –cellular automata algorithms makes people move in locksteps until we converge to the standstill composition (or close to it), where (almost) nobody is motivated to move as all preferences are met. We can see how non-xenophobic individual people with a weak preference of not being in the minority create segregated neighborhoods. There is a compounding effect of preferences on the neighborhood. A minimum preference of 50% produces clearly segregated neighborhoods. Credit: Diego Zviovich

Background

The generalized Bob Rubin trade (GBRT) is named after Robert Rubin, a rent-seeker who was boss of the U.S. Treasury then subsequently worked for Citibank where he collected $120 million or so in compensation over a decade preceding the crash of 2008-2009. Owing to Rubin and other's policies or building hidden risk (low probability of blowup, high impact from blowup), Citibank was insolvent, bailed out by the taxpayer. But Rubin kept his $120 million. This compensation arbitrage is what Hammurabi's article was meant to solve by making people accountable so they cannot hide delayed risks.

> **Principle 8: Noninterventionism**
> **Peace must be reached principally by noninterventionist localism.**

> **Principle 9: Never conflate localism with monolithic, absorbing nationalism.**

Commentary

Intuitively, people do better (to the least, act differently) as floormates than roommates. Any idiot realizes that in his or her own life but misses the point when it comes to political systems.

This is best illustrated by either Phoenician-style (non-Punic) decentralized localism or the fractalism of Switzerland.

Background

There has been notions of "nationalism" retroactively flown back into earlier time, when polities were organized as a triad: 1) empires under a king promoted into the rank "emperor", 2) nations under a king not yet promoted to the rank of emperor and therefore often depending on one, and 3) city-states (usually maritime and mercantile: Mediterranean or Hanseatic) and statelings (usually agrarian), both necessarily vassalized.

Nationalism in the modern sense seems to correspond to tribal structures grouped under some royal authority — thus nationalism is exactly what is not fractal, that is, monolithic, and aims at eliminating fractal layering.

The danger of monolithic nationalism, that is, non-fractal tribalism, is that it creates collectives vastly more biased and xenophobic than the sum of individuals. See the comment in [6] on how Polish antisemitism was more of a collective than an individual phenomenon.

> **Principle 10: (Survival and Tribal Committments)**
> **Collective survival necessitates a minimum level of fractal tribalism, though tribes don't mean related people.**

Commentary

Tribes can be composed of nonrelatives as, say in the military, where people take the bullet for their friends and co-fighters, not a particular cause.

Nobody has managed to prove that abstract (particularly Kantian) universalism can ensure intergenerational survival.

The saying *if you are friends with everyone, you are nobody's friend*. And if you treat all mankind the same, in other words without some preferential treatment to your own children, you will turn out to be an unreliable parent –eventually threatening their own survival. Pure universalism at its *ad absurdum* limit implies you drop off a kid at school in the morning and randomly pick another in the afternoon.

The rules of societal symmetry cannot hold without some structure: *you form a group with your own family; I form one with my own.* This renormalizes to tribes that can be as self-defined as needed.

The mechanism is convexity. You do better protecting your child with intensity 1 than protecting 1000 children with intensity $\frac{1}{1000}$.

Recall that Byzantine theology was at least partly driven by competition between partisans of rival teams (blue and green) in chariot races.

Background

Yoram Hazony detected the necessity of tribal fractality (not his words): society can only work under such structures that have switching in-group vs. out-group behavior: "Me and my brother against my cousin; me, my brother and cousin against the outsider", etc. (Note that this should not lead to "Nationalism" that by definition wants to eradicate lower layers: Hitler's idea is a German monolithic entity that absorbs all what's perceived to be its regional subparts).

What we did here is embed it in a convexity argument, the refusal of the defective simplification via mean-field.

Further Comments

Unruly Mediterranean mountain tribes that managed to resist invaders (e.g. Sicily, Crete, Mount Lebanon, Corsica) often have a tradition of local vendettas that are suspended whenever an outside threat emerges. One can argue that such *fractal* vendettas are mere training programs and exercises in vigilance (An antifragily argument).

> **Principle 11: Racism**
> *Racism lies in association of abilities with ethnicities and classification.*

Commentary

Giving favorable treatment or inheritance to a relative or a family member cannot be considered racism although the link with that person is primarily genetic, particularly if the person is recently discovered half sibling. On the other hand claiming to be giving such favorable treatment "because of skills" is racist and eugenist.

Granting a French citizenship to a newborn issue of French parents in Mongolia while not doing so with other babies in the same hospital is not racist. Claiming to be doing so because of French ethnic superiority is.

Background

The strategy to degrade groups' intergenerational genetic endowment, as represented by the activism of Charles Murray's (co-author of the statistically *The Bell Curve* and the fake research *Human Accomplishment* –as busted by this author) under tame designations (or elevations of some groups as Stephen Pinker with Ashkenazis) is clearly racist, particularly since the arguments repose on fake statistical associations. While low-dimensional traits are heritable (height, skin pigmentation, etc.), a higher dimensional composition of these has not been shown to be so. Simply, a function of x is statistically removed from x. The author has shown where IQ scores (which are claimed to be heritable) are only good at predicting testing abilities and are marred with severe nonlinearities that overestimate "correlation".

If (i) abilities are environment dependent (a Maserati optimized for a race course will not fare well in the Corsican mountains, compared to a goat) and (ii) the environment is not predictable, one needs a measure that predicts both output *and* environment. It is hard to figure out why some people are much better house painters than carpenters –things break down under nonlinearities.

Finally, scaling prevents transferring intelligence from individuals to groups, and vice versa. Development is a function of collective not individual intelligence.

Principle 12: Do not mistake homophily for xenophobia

A weak form of homophily (preference for similar people) is not to be confused with xenophobia (distaste of the foreigner), even if it undergoes a collective scale transformation and looks like outright segregation. But there exists a form of xenophobia.

Example

A collection (Southern) Italian Americans with a weak preference of living within reach of Italian grocery stores will end up creating what looks like a segregated neighborhood, without anyone having any preference to exclude others from it.

Commentary

A group of people with a very weak preference of not being in the very small minority produces clustering and what may seem segregation may be just negative preferences (the desire to *not be* alone).

Joe Norman: "Because they've understood something about evolution, that it involves inheritance, they believe they should be able to reduce every complex trait of a human being down to a neat-narrativized story of inheritance problems (...) when we realize our most complex traits arise out of interactions, and are not reducible to more directly-heritable sub-systems ons modules – even the interactions of traits between just two people (parents) leads to very-difficult-to-predict emergent outcomes."

See Thomas Schelling's argument [7] developed by cellular automata. There is a standard scale transformation from micro decisions to "macrobehavior", asymmetric to the transformations in the opposite direction.

One can generate numerous situations of scale transformations via minority rules.

Contra and Limitations

This does not mean that every nearly homogeneous neighborhood is the result of the nonlinearity of the aggregation of collective preferences: some fundamentalists in hyper-monotheistic religions actively exclude others on religious grounds (e.g. Salafis in Tripoli, Lebanon).

insert Cellular Automata illustration

Corollary: Groups and Individuals

An attitude towards groups is never the same as one towards individuals. All preferences are scale dependent.

Some people are crusading bigoteers against racism but have never invited a minority cab driver for tea. Indeed this is common as theoretical anti-racist stances constitutes a cheap exhibition of virtue.

And in reverse: some people deemed extremely "racist" against a certain group *qua* group may in person marry a person of the group without seeing any inconsistency.

Examples

Arab tribes typically exhibit excessive hospitality towards individual strangers that venture into their territory, but slaughter marauding groups. So would that be, nonracism for $n < 5$ or so, racism for $n > 5$? For which $k : n > k$ are you racist?

Practically nothing is scale-free.

Principle 13: Neither minority nor majority rules

Neither the minority nor the majority should be able to impose their preferences on others.

Commentary

It is clearly unreasonable that geographically distributed communities that represent .1% of the population impose

their preferences on others, particularly when there is a high cost to that, and no ethical requirement or symmetry. But it is necessary that these individuals be treated with the proper amount of fairness.

Just as Tocqueville praised the U.S. federalism and constitutionalism as a counter to the domination of the majority; one needs structures that can prevent excessive over-reach by the intransigeant minority.

Having local not global laws prevents renormalization.

The electoral college prevents (among other things) minority rules. The United States, one needs to be reminded, is not a republic but a federation.

Commentary

An expansion to the concept "leave me alone and, in return, I will leave you alone".

Background

System Blindness in Historical Accounts

> **Principle 14: No historical study or account should be considered without filling-in the gaps of non-events, or events that do not reflect the agency of some top-down ruler.**

Peace is boring. Historical accounts are, by their very structure, biased to overestimate agency in human affairs (such as the role of "leaders" and the "state"), as well as conflicts dealt with from the top, as well as the devaluation of the properties of the system.

By their very focus on wars, historians see history as wars punctuated with episodes of peace, not peace punctuated with episodes of war.

This misfocus increase representativeness, exaggerates the role of meetings, decisions, and recorded "events". By their very definition recorded events are not random samples but glorifications of salient happenings.

> **Corollary: "Leadership" is merely procedural**
>
> *Evolution (hence improvement) never happen from the top via positiva. But degradation takes place from the top via interventionism and side effects of policies. And improvement from the top is necessarily obtained via negativa.*

Commentary

It is well understood how natural systems blow up when altered from the top.

The journalistic notion of "leadership" applied in political discourse is an insult to systems.

Even elementary reform via change of minister prove ineffectual as ministers never really control the ministries.

> **Principle 15: (Religion vs. legal systems) Never conflate religion and legal system.**
> *"Christian" or "Judeo-Christian" values are not about religion, but the reverse: a secular tinkering tradition that arose principally from the separation of church and state in the West. Sharia is both a legal and a religious system.*

Commentary

Ecclesia vivit lege romana: Christianity needed Roman law, unlike Islam that was law and could thrive outside the Roman world.

Shedding Christian values and thought is shedding the past accretions of Western Civilization. See *Skin in the Game*.

Distinction should not be made religious/nonreligious but rather tolerant/intolerant of other's beliefs.

> **Principle 16: Government as precautionary entity**
> *The government's role is survival and ruin avoidance –tail risks. Hence, necessarily, ergodicity.*

Commentary

Via negativa is discussed in *Antifragile*. Its main property is the avoidance of iatrogenics.

> **Principle 17: War and Peace**
> *Top down conflicts are different from local ones.*

> **Corollary 2: Peace from the Top**
>
> *Peace from the top works if war is from the top.*

The Palestinian Israeli disputes

> **Principle 18: Ergodicity**

No static analysis for dynamic processes, particularly those that depend on absence of ruin.

Inequality should never be measured statically

Commentary

The payoff over time for one unit is different probabilistically from the multi-world scenario approach as it has been shown [8] that the law of large numbers operates differently, particularly under the situation of an absorbing barrier.

> **Principle 19: Tradeoff**
>
> *Centralization takes away from both governance and democracy.*

Background

Mechanism of interaction muted by dominant signals.

Commentary

Note that centralization will necessarily show success in its early stages of implementation.

> **Principle 20: (Nature and Statistical Significance) Never invoke evidence of absence for nonnatural introductions and technologies; never invoke evidence of absence for natural things.**
>
> *What Mother Nature does is rigorous until proven otherwise; what humans and science do is flawed until proven otherwise.*

> **Principle 21: Godel-Popper limit**

III. ARTICLES (POLITICAL DECISIONS)

Ethics of office

> **Article 1: Every dollar made by a former politician or civil servant thanks to the fame and connections imparted by the office belongs to the taxpayer.**

It is vastly more respectable to come to politics rich than come out of it rich. Consider Tony Blair, the Clintons, Al Gore, and... the Obamas.

Politics is not a résumé enhancement move.

Contra and Limitations

A successful former president may claim that the source of income isn't the fame from government, but a natural charisma and intelligence that got her or him elected in the first place.

Duration of institutions

> **Article 2: No public institution or agency should be created without an expiration date.**

Chateaubriand: "Les institutions passent par trois périodes: celle des services, celle des privilèges, celle des abus."

Once public institutions are initiated, it is impossible to remove them; they are therefore extracted from the bottom-up selection mechanism and evolutionary pressures.

If a public institution or agency is vital, then it will be renewed.

Contra and Limitations

It may be burdensome to the system to need to continuously reinvent institutions.

Some mechanism of "justification", an intermediate one my work under the condition that it does not lead to automatic renewal.

Partisanship

Article 3: A Partisan's opinion is analytically invalid on its own, without comparison with that of another partisan.

A partisan's or an ideologue is defined as someone who's assessment of a situation doesn't depend on a situation. A partisan's opinion has no analytical value; it is merely representative when it corresponds to a voting group.

Inconsistency within monocultures: a narrative is fallacious 1) if it is logically incompatible with other narratives also held true by the same agents, 2) if it leads to the statistical clustering of causes that should be random, or, to the least, uncorrelated. This heuristic can help us identify monocultures, usually artificially propped up by some lobby.

It is always suspicious when a person's ideas line up exactly to a specified party –as when someone embraces all ideas wholesale, without any idiosyncratic modification.

The rest of the public needs to know they are arguing with a shill: you can observe futile exercises of people engaging in argument with a Monsanto shill or an operative for Saudi Barbaria thinking they will convince him or her of their point.

Example: there is a cluster for the advocacy of both GMOs and Glyphosate, when there is no particular logical link between the two positions. Well, there is a link: Monsanto sells both; and GMOs are actually an excuse to sell high doses of glyphosate.

Likewise, some nonrandom clustering of people who decry civilian casualties in Aleppo but forget about it in Mosul.
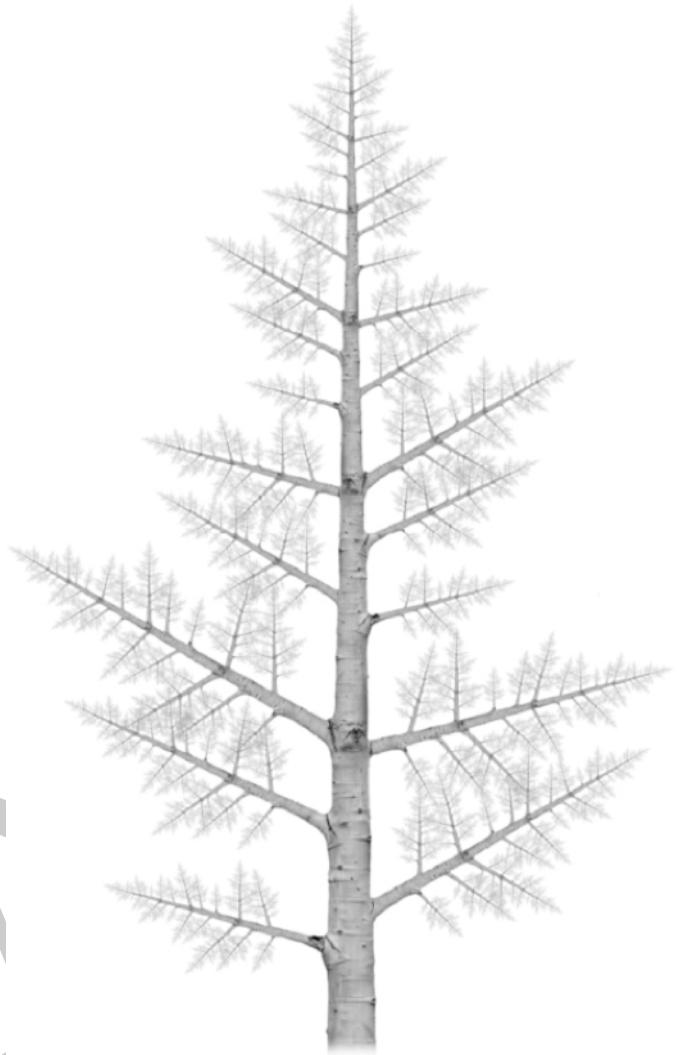

Figure 7. Monofractal: layers of self similarity between branches and trees. Branches look like small trees. There is no centralized control, simply collections of local rules.

Article 4: Results

Never judge a policy by its intentions or the reasoning behind it, except for the application of the precautionary principle.

People have a hard time shedding socialism because it makes a lot of sense and appeals to our deep sense of justice. What makes a lot of sense, historically, doesn't really make a lot of sense; the fact is obvious but hard to remember when swayed by abstract justice arguments.

Consider modern Northern European monarchies, particularly the Scandinavian ones –they offer the highest degree of governance.

Article 5: Skin in the Game

No decision should ever be taken by someone who does not exit the pool in case he or she is wrong.

This is a case of filtering, not just incentives and disincentives. See *Skin in the Game*.

Article 6: Bailout

Every company operating thanks to the backstop of the taxpayer should be treated like a utility, with its executives compensated like other civil servants.

Bankers tend to hijack the state. argument of "no cost to the taxpayer"

Article 7: Iatrogenics

First, do no harm.

The iatrogenics of some policies are unknown; but what policies can be carried out are clear.

Article 8: Non Governmental Organizations

Nobody should be ever involved in an NGO without residing permanently in the place where it is active.

NGOs can be agents of virtue merchandizing. This is to avoid the Bill Gates syndrome of promoting such "improvements" as GMOs in remote places where he does not reside, and therefore will not pay for long term side effects.

Article 9: Abstract scale-free universalism

[a] *No situation should ever be dealt with in more abstract form than required. Life is about a collection or particulars that do not necessarily generalize without scale transformation.*

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[a]Not to confuse with the universality laws in physics and complex systems.

Article 10: Chromoracism

Never designate races by color, rather by geography of origin: Caucasian, Subsaharan, East Asian, etc.

Commentary

It is very common to conflate differences between groups and difference between individuals.

You should not say "a 53 year old African-American" or, worse, "person of color" but rather, simply "Joe". The less background information, the more you are dealing with him as a human. And the more universals you bring into a situation, the more violations of scalability.

Background

The problem with identity politics and the diversitymongers is that they create exactly the same categories as stereotyping.

Both identitarians and prejudicedtarians fail to get that the difference between groups, assuming they exist, do not
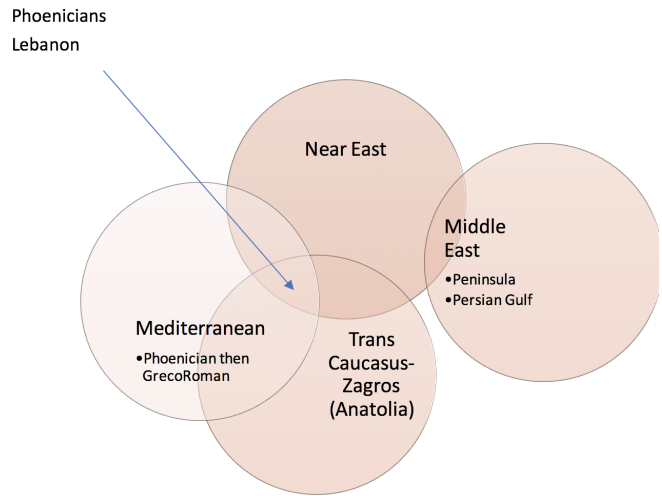

Figure 8. Identity politics gone wild. The exposition "Art and Identity in the Ancient Middle East" at the Metropolitan Museum in New York was a showcase of tagged exclusive identities brought from top-down; Edward Said-style identity mongers proceed to destroy the notion of cosmopolitan localism/Mediterraneanism of the Phoenicians by classifying them into the "Middle East". This shows the incoherence of non-localist Nationalism. Since c. 1100 BC Phoenicians (subsequently "Lebanese") have been the most Mediterraneans of peoples: look at food/behavior/looks. But since 1860 some low-Intellect Westerners (Arabists and founders of AUB, etc.) have decided de-Mediterraneanize (initially de-Ottomanize) to satisfy "identity" concepts.

show in small samples. Assume a certain race (people from planet X) have the usual small but "significant" differences in what is called I.Q., assuming we know how to measure it for nonnerds (we don't). If you hire 1000 such people, the difference between samples will be evident, thanks to the workings of the law of large numbers. But at the level of a single person, there is only a tiny probability the effect will be present —particularly when there is a high variance across the population concerned and there is variance for the very same person.

"Life is in the preasymptotics" [9]. This chromogenderidentitystereotyping is the same statistical error as the one journalists made in discussing *Fooled by Randomness*, ironically a book about statistical errors: they mistook the statement "life contains more randomness than it appears" for "it's all random, there are no skills involved".

Further Comments

Often racial identities are bogus, anachronistically made up, in a framework constructed to empower Northern European supremacists (by linking them to classical civilizations from which they were (very) remote at the time and separating Western Eurasian groups, particularly Mediterraneans, into "European" and "non-European"); all done in the ignorance of genetics, culture, mapping, statistical representation, and

---

Many people otherwise careful in "political correctness" (at least cosmetically) commit the violation of ageism. Saying "Mathematics is a young man's game" is always interpreted as such, not as statistical statement: "Mathematics is **most often** a young man's game".

genetic distances. Labeling Aristotle as a "dead *white* male" but not Omar Khayam or Algazel is quite suspicious since 1) people who originate from the Zagros-Caucasus had patently lighter skin than Greeks and other Mediterraneans, 2) people from the Med, Aristotle himself, put themselves in a category that is equally separated from Northern European as it was from tribes from much further South.

Article 11: Negative democracy

Removal of long-ruling "leader".

Article 12: Visibility of Minority Rules

Minority rules need to be made visible and explicit.

IV. ARTICLES (POLITICAL BEHAVIOR)

Article 13: Bigotteering, I

No attribution of a label (racism, sexism, ageism, etc.) should be made unless 1) there is no other explanation, and 2) an explanation is needed. The burden of the proof lies with the accuser.

Originates with Tim Ferriss, describes tagging someone (or someone's opinions) as "racist", "chauvinist" or *somethinglikeit-ist* in situations where these are not warranted.

This is a shoddy manipulation to exploit the stigmas accompanying such labels and force the opponent to spent time and energy explaining "why he/she is not a bigot".

Note that it is the true victims of racism that are insulted by virtue-peddling bigoteers.

Example: Both the Kurds who are asking for independence and the Arabs who refuse to grant it accuse one another of "racism".

Article 14: Bigotteering, II, Use of Labels

Never use labels unless they satisfy the rigidity criteria.

Christian Lebanese and Phœnicianists –Phœnicianism is a brand of localism – have been called "right wing" or "isolationists" by the Arabist and Arab imperialist propaganda, as well as the Palestinian machinery.

Many separatists have been selectively smeared using the right wing label. Note the inconsistency from the previous point: the Palestinians (and the group of thinkers loosely called "Arabists") supported Irish separatism and the localist agenda of the Irish Republican Army (IRA), while attacking the nearly identical Lebanese localism.

Article 15: Second Order Bigotteering

Siding with the accusatory party for such a label (say racist or sexist) because one belongs to the tribe or political group of the accuser, without without even investigating the source of the problem.

Commonly practiced by the children book author J.K. Rowling –such as siding automatically with Mary Beard in an intellectual conflict with a man simply because Mary Beard was a woman, without understanding the nature of the dispute, then spinning arguments to explain her support.

Article 16: Retrospective Bigotteering

Accusing ancient individuals or groups of violating today's ethical norms.

Saying "Aristotle was sexist" or "Nietzsche was racist" should only be used in what probabilistis call "filtration at time t" (their period) not the current period.

There is nothing particularly wrong in reporting that ancients deprived a given subgroup of equality. It is not fair to use a or to flow back *isms* in time with the negative connotation they convey. Moral values might have been different at the time; they progress just like knowledge progresses. Using *isms* is no different from blaming the ancients for not understanding the existence of germs and calling them "obscurantists".

The very accusation is equivalent to saying that moral values don't evolve!

Article 17: Nudging

Nudging violates both ethics and governance.

Article 18: Ministries

Employees of ministries should never be permanent.

Governments come and go, bureaucrats stay. Ministries aren't run by ministers or transitory figureheads, but by a "deep local microstate" of civil servants who have been there for decades and "own" the inside.

AIRSTRIKES 'FOR HONOR

AT SEEING THE PICTURES OF THESE CHILDREN AND WOMEN

Figure 9. Pedophrasty is an effective strategy as it provides arguments to strike before the evidence is formed. People are nudged into "doing something".

Article 19: Pedophrasty

Never manipulate using children as arguments to suspend skeptical inquiry.

Argument involving children to prop up an argument and make the opponent look like an asshole, as people are defenseless and suspend all skepticism in front of suffering children: nobody has the heart to question the authenticity or source of the reporting. Often done with the aid of pictures.

Can also describe the exploitation of babies by beggars who rent them from their parents.

It has its most effects on actors, journalists and similar people deprived of critical judgment.

Example: Pedophrasty has been commonly used in the Syrian war by such agents as Julian Röpke supplying the German public with pictures of dead children.

You can see the naꞌiveness of

Article 20: Cherry Picking

One cannot be both scholar –or judge – and advocate.

It is highly non-philosophical and unscholarly to present a one-sided argument, even if correct –unless one declares plain unmitigated advocacy, in which case one is not a scholar.

Example of cherry picking: U.N. reports (perhaps to justify their funds) present environmental situations as dire without counterpoint or global statistical representation.

They will show "deforestation over [span years] without longer periods (say past 25 years), this fitting a window or noise variations to their story rather than the true trend.

Clearly you will always find a period during which, or a region where there was degradation.

In combination with bigoteering: such a false accusation of bigotry, particularly if the accuser knows it is not the case, should cause a penalty to the bigoteer as if he/she were bigots.

Note that "false accuser" was the original meaning of the Greek word sycophant *before drifting in the English language.*

Exploiting the unsavory attributes of one party in a conflict without revealing those of the other party . Example: "He is a dictator".

The problem can take absurd proportions: in the Syrian War, was used by interventionists describing the "dictator" without mentioning that his opponents are Al-Qaeda head-cutters.

You can detect partializing and dishonest thinking when the same people arguing for the removal of some dictator praise Saudi Barbaria forgetting to use the argument in such cases.

Article 21: Support for a person holding office

Support policies or specific actions, never individuals in office.

The counterpoint is never systematically attack or stand against a person, rather focus on specific policies.

Article 22: False Accusation

Any person making a false accusation needs to be penalized as if they committed the violation themselves.

In many legal systems, since Hammurabi's article, calumnies and false accusations are punished as if the accuser committed the infractions himself.

Nabothizing: Production of false accusation, just as Jezebel did to dispossess Naboth.

Article 23: Lobbying and Professional Advocacy

Any form of paid advocacy aiming at causing imbalances in governance should be illegal.

Paid advocacy should be limited to courts of law, not to dealings entailing governmental decision-makers.

Unpaid advocacy can be acceptable so long as it puts the lobbyists back at the level of the collective.

All discussions between paid citizens and public officials should be made public *and* easily accessible.

The temporal ban on lobbying by former government employees is not sufficient.

Article 24: Risk Transfer

Article 25: Bailouts

V. QUAESTIONES

> **Quaestio 1**
>
> *Is the argument for or against regulation?*

Regulation is to be used only in cases where skin in the game fails, that is, where there is no immediate visibility of the exposure, such as in the generalized Bob Rubin trade (GBRT). But unlike with the Bob Rubin trade, that can be solved by forcing someone to claw back past profits, and compensate others, thus representing a clear and effective deterrent, there are situations where this cannot be easily done. If Monsanto can, thanks to GMOs, transfer risks into the future, without anyone penalized by it, then we need tail protection.

Recall that the main government job should be systemic tail protection, not letting busybodies such as Sunstein and Thaler experiment with our lives.

Regulatory recapture is a real thing.

> **Quaestio 2**
>
> *Can someone be a genuine, uncorrupted, academic?*

Most certainly, but the problem is that people socialized into a system get eventually corrupted without realizing it, from simple things such as fear having to eat alone at the school cafeteria.

This means that, argument for argument, more weight should be given to the works of an independent scholar. It does not mean that independents scholars are necessarily credible (anybody can claim to be an independent scholar and the domain is rife with bu***ters), only that conditional on having the same rigor, their arguments are more genuine and less prone to corruption.

At the end, an opinion is validated the most by the risk someone takes to voice it.

> **Quaestio 3**
>
> *We know that current risk management methods such as VaR and others derived from Modern Portfolio Theory based on Gaussian and near-Gaussian distributions are useless and harmful to their users. But they help students get a job. Don't you think the obligation of the university is to give the students skills in the marketplace?*

The collective comes first. Never harm the collective. And never help individuals get an edge over the collective.

The *primum no nocere* applies to the higher layer first, lower layers later.

> **Quaestio 4**
>
> *You run into a lobbyist (or an employee of a foreign funded think tank) in a social setting, say a cocktail party. Can you chat with him or her?*

No.

> **Quaestio 5**
>
> *Can politicians who privately educate their children ethically take a policy position on state education when in office?*

Yes, 1) under the conditions that the children are no longer in private school at the time of this policy stance if the politician is in favor of increases in funding funding public education, 2) unconditionally if the politician is against funding for public education.

More generally, one should apply retroactive rules only to situations where there is the possibility of tacit collision (say a regulator moves to the private sector, say Monsanto, hence his past actions are tainted by a behavior in favor of the industry that allowed him to get the job, or former Treasury Secretary Tim Geithner who got a big payoff from the industry he helped get yuuge bonuses in 2010).

> **Quaestio 6**
>
> *University and tuition costs have far exceeded the pace of inflation for over 20-years. This is principally driven by no economic incentives for universities to share in the risk/cost of student debt. Should the federal government charge back universities for defaulted loans?*

Yes, absolutely, to remove the agency problems. Students are financing 1) academic tenured game-players, 2) real-estate developers, 3) bureaucrats. The trick to make it work is immediate:

1) make universities liable for defaulted student loans
2) encourage the suing of universities in the event of misfitness of the degree and mismatch to promises made
3) encourage apprenticeship models

> **Quaestio 7**
>
> *If you believe that awards, honors, and such items are an abomination that turn people into (zero-sum) spectator sports, and marks a departure of the recipient from virtue, should one advertise the turning down of a prize?*

Never. It is your obligation to get in contact with those who grant the prize and let them know that you do not wish to be under consideration, and give them a chance to withdraw it quietly. Or post on your site that you refuse awards, which simplifies the problem. Inverse virtue is not virtue: if you are against awards because virtue should not publicized, its rejection too should not be publicized.

More significantly, if you do not like money, or have anti-materialistic aims, you should not publicize it as it too violates the principle of the privacy of virtue.

> **Quaestio 8**
>
> *Behavior towards an enemy in office doing good things, defined as otherwise acceptable had they been proposed by others.*

> **Quaestio 9**
>
> *You tell someone something in private, as a person, then he goes and publish it in a newspaper. This is standard methodology by journalists who cozy up to you as a strategy to extract information. It is unethical?*

Fat Tony would of course say that someone stoopid enough to trust a journalist deserves such. But the question goes beyond: can the private be publicized?

No.

The journalist violated a principle of ethics as he was approaching you socially, not informationally.

The question goes beyond. Say you had a falling out with a friend. Can you use information you got from him or her while friends, against him or her later? Never (I've almost done it once, then retracted and felt better after my retraction).

> **Quaestio 10**
>
> *Is showing off a departure from virtue?*

Not at all. Showing off is what makes us human. It is just that showing off *without risk* is a violation of the principle of the privacy of virtue.

So long as you take risk.

> **Quaestio 11**
>
> *Fat Tony took out his fair share of enemies. Is there a SITG rule for when you must do the dirty work yourself vs when you let others do it?*

The very idea of taking justice in your own hands violates symmetry if you don't want others to take justice with their own hands and violate due process. The entire Western civ-

ilization's idea of justice (which starts in Babylon) is based on such idea of socialization of judgment and punishment – though Roman law, socialized judgment but not punishment or restitution which you would have to carry out yourself.

However there are plenty of degrees of freedom *within* the law. Self defense is one, if you sort of see what I mean. Fat Tony would say that only morons violate laws or, even more Fat Tonyish: only morons get caught violating laws.

There is the argument of failure of the law, sort of the equivalent of market failure. Even then the answer is, *dura lex, sed lex*.

VI. Verbalism as a Central Fallacy of Public Discourse

We will present two aspects of failure in reasoning that should encompass the usual fallacies.

Definition 1 (Verbalism)**.** *The use of terms both central to one's discourse and devoid of rigidity of meaning; their meaning can change with context or circumstances.*
***Note**: words that escape definitions can be rigorous and nonverbalistic if they always and in all practical situations point to the same thing (a well known application is the case where obscenity could not be easily defined at the time, but, as Justice Potter Stewart in Jacobellis v. Ohio stated "I know it when I see it", to describe his threshold test for it).*
***Note**: misnomers are not necessarily verbalistic and unrigorous if they have a rigid meaning –say "martingale" in mathematics (but for uses limited to mathematics, not gambling strategies), or what is called abuse of language in hard science. .*

Verbalism includes the use of:

1) *Ill-defined terms, say "progressive", "liberal", "modern", "populist", "sectarian", that require a scale and a degree (rate of change meant by "progressive"), etc.*
2) *Well-defined and rigid terms but used in a way that does not correspond to their meaning, say "correlation", "volatility","regression", so their mathematical definition does not map to the connection [10] [11].*
3) *Terms stretched outside their original meaning "nazi", "fascist", "racist", Peer Gynt Suite No. 2, Op. 55, etc.*
4) *Such expressions as "evidence" without statistical significance.*
5) *Circular terms; ones that are explained by other terms that loop to the same source, s.a. "rationality" without mapping to proper axiomatic framework of rationality (hence called "pseudo-rationality").*
6) *Words that do not have a robust mapping as they can have an arbitrary, gerrymandered definition that, not being robust, changes according to periods, such as "Western Civilization", "East-West divide", etc.*
7) *Substitution of one term for another, say using "democracy" with implication of "governance", or "legal" for "ethical".*
8) *Euphemisms and exaggeration in rigorous thought.*
9) *Distinctions without a difference but presented as a matter of substance.*
10) *Ambiguous labels that can fool people. Example: the "Holy Roman Empire" was not a continuation of the Roman Empire (Byzantium was) but the name was potent enough to confuse people into believing the original (mostly) Franco-German European union was the continuation of ancient Rome. Likewise, the designation*

These definitions reflect formal definitions for this author, not necessarily the general acceptance of the term among the general population or some scholarly circles.

Note that with such notions as "correlation" the proper meaning is reduction of uncertainty concerning one of the variables conditional on knowing the other, which is nonlinear: .6 correlation is far more than twice .3.

"Arab" could have meant Westerner (i.e. Mediterranean) or "foreigner" for Arabians and Peninsular people, while understood as "nomad" by some, confusing enough people into political theories and formulations such as the centralized lunacy known as "Arab nationalism".

Note: Distinctions can be with and without differences, depending on context and uses. The Eastern Church mapping the difference between ὁμοούσιος (homoousios), "consubstantial", vs. ὁμοιούσιος (homoiousios) "partakes of a similar substance", is not a distinction without a difference –in Greek, but both terms could be translated into the same term in Latin in early disputations with the terms *coessentialis* and *consubstantialis* to represent both.

Note: The problem isn't using labels as shortcuts The problem with the verbalistic is that he or she thinks in label.

The user should be free to use his or her vocabulary, but, as with a mathematical statement, a legal document, or a computer article, every word needs to map to something precise, whether defined or not.

Clearly, the scholar does not need to produce a complete codification of the expressions used; but should be able to back-up every single term used.

Commentary

Verbalism tends to be absent from financial term sheets, mathematical documents, legal contracts, and courts of law –the latter benefits from, say the articles of New York State Penal article which has an exhaustive list of terms used in court that can be explicitly defined.

Vagueness has traditionally been the enemy of law: in the United States, laws that violate the vagueness doctrine are unconstitutional.

For Frankfurt's *On Bu***t* [12], both the liar and someone saying the truth aim at the veridicality in their statement. We are adding an additional constraint to make it of rigid meaning. And intentionality needs not be present: one can be verbalistic without being bullshitter in the Frankfurt sense. Many students of political science are verbalistic without being bullshitters which requires awareness –it is their discipline that is bullshit, not them.

Definition 2 (Hand-waving). *Hand-waving reasoning is one that skips critical steps, but not necessarily in exposition. It gives the impression of analytical thoughts and derivations but is in fact a facade of unrigorously produced arguments.*

Hand-waving is most often complained about in mathematics, but is is vastly more rampant in fields that attempt scientific approach, such as psychology and political science.

Commentary

Fields like psychometrics produce all manner of equations and mathematical language, but repose on flaws in elementary interpretation of concepts such as correlation, leading to spurious derivations, particularly when it comes to the "g", general intelligence.

VII. Uncertainty and Complexity: Definitions

Definition 3 (Complex Systems). *For our purposes, a complex system is one where, dynamically 1) interactions between parts can produce a different collective and individual outcome than when examined in isolation, 2) interactions are at least intermittently present.*

It is typically associated with the following properties.

1) Interactions: Specific deterministic and random interactions between components –owing to dependence –produce different behaviors from those of the properties seen in isolation, particularly when asymmetric.

2) Scale transformation and emergence properties: These cross-dependencies produce different outputs depending on the scale (as per Anderson's "more is different" [13]]).

Commentary:

Consider the behavior of a bee colony compared to that of the individual bees.

One can no longer assume "everything else being equal" and perform naïve comparative statics in the presence of crossdependencies, or by making a separation between endogenous and exogenous variables, hence automata below.

We note one of the failure of behavioral economics in attempting to infer properties of aggregates from those of components –as we note, a collection of biases in individuals does not lead to the biases in markets.

A central failure in centralized top down systems is the eliminations of the interactions outside exclusively hierarchical ones.

3) Nonlinearity: There is at least one scale at which functions of averages, at some scale, diverge from averages of sums.

Commentary:

This is a standard local convexity effect (from Jensen's inequality) drilled in [2] and [14].

Mean-field approaches are based on studying the behavior of large and complex stochastic models (those with a large number of small individual components interacting with one other) by reducing them to a simpler "average" one. Typically they reduce a many-body problem to a one-body problem. They fail in physical systems.
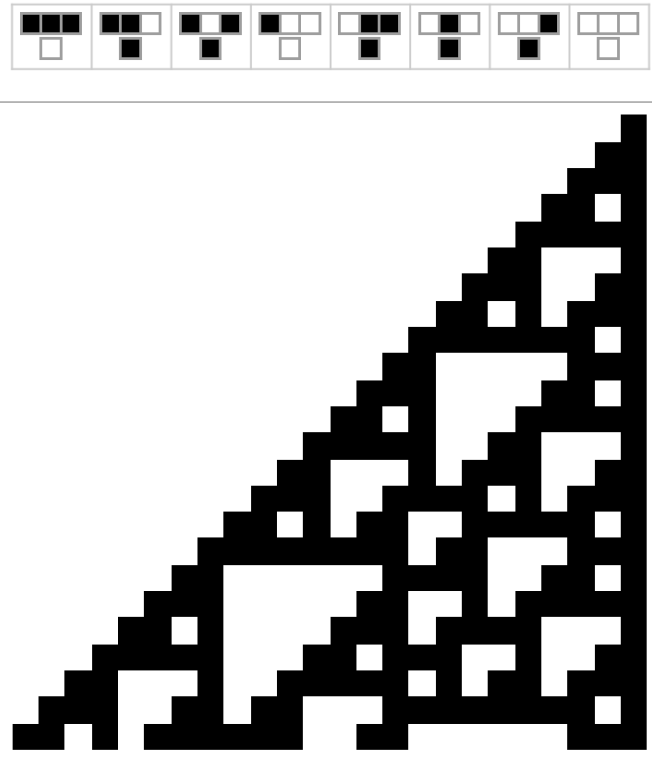

Figure 10. Cellular automata. Rule 110 is computationally irreducible. Above we see the rule: if black on both sides, next is white, if black on right and white on left, black, etc. We start with a black unit, and flow down on the page for 110 steps. The next graph shows what happens after 410.

Likewise, the field of evolutionary biology (The gene centered view of evolution, "selfish gene") improperly generalizes the behavior of aggregate populations from the assumption that one can assign fitness to each allele (symmetry breaking and spacial distribution, see Sayama and Bar Yam, [15] [16]: "the predictions of the gene centered view are invalid when symmetry breaking and pattern formation occur within a population, and in particular for spatially distributed populations with local mating neighborhoods in the presence of disruptive selection.")

Likewise "fitness" is never determined unless future interactions are known, which violated numerous forecastability rules. Under unpredictability fitness is harder to pin down.

The idea of a *representative agent* has been dominant in economics and social science; there is no *representative agent* under nonlinearities –the market price is determined by the marginal squeezed buyer, not the average.
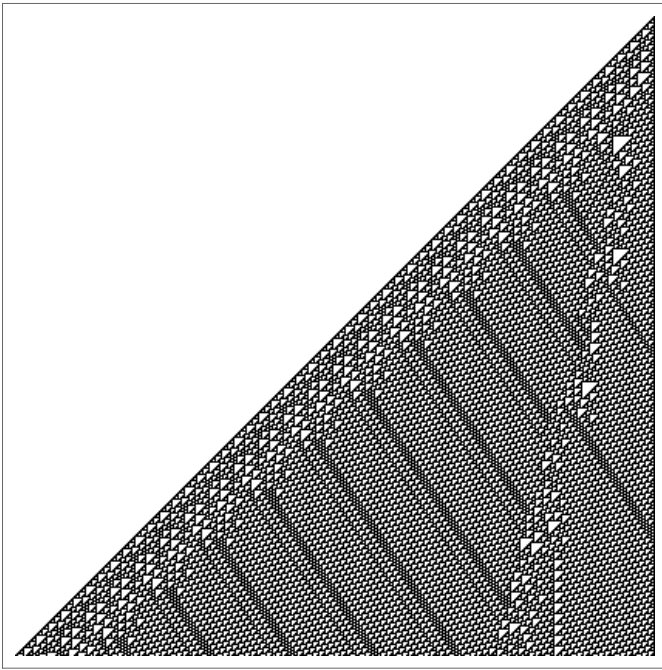
Figure 11. Rule 110 after 500 steps starts showing shapes that are totally random –but predictable one step ahead.

4) Nonprobabilistic modeling: The random or deterministic process for a vector, even when predictable, cannot be expressed by a higher dimensional stochastic process, with its snapshots expressed as a multivariate probability distribution. Hence: **automata, agent based models**.

Commentary:

Consider running a company's income as a stochastic process (i.e., over time). The fate of the company depends on its own income, but also on that of its competitors, suppliers, the economy, etc. The "terrain" is also random. Consider an n-dimensional vector with components $X_{i,t}$ indexed in space and time t, $\{X_{1,t}, X_{2,t}, \ldots, X_{n,t}\}$. $X_{1,2}$ depends on $X_{2,1}$ which itself depends on $X_{1,1}$, etc. In standard time series there is a problem of covariance stationarity, that is, the covariance matrix is not independent from time t.

5) Computational opacity: Computational irreducibility (Wolfram [17]) cannot be ruled out in navigating successive states, meaning that to evaluate the state of the system between discrete periods t and $t + m$ requires knowing the future state at every step, hence a minimum of m computations.

Commentary:

When you try to model the trajectory of a ball, a bullet, a planet, or a falling piano from the 53rd floor, you do not need to examine every step. You summarize with a function. Under interactions such a summary is just not possible. You have to redo every step.

Figures 10 and 11 show the problem of irreducibility.

6) Fat tailedness in distribution space: The presence of feedback loops between components and the abrupt switching of states means that random variables in the system can produce multiplicative effects, hence fail to converge to the Gaussian basin.

Commentary

CLT requires independence.

Even if at some scale there is a different output, the thing works.

7) Self-organization, absence of centralized control: The interactions flow –thanks to simple rules – upward from the bottom layer, never from the top of the hierarchy.

Commentary

Fractal hierarchy means that relationships between entities...

Definition 4 (Fractal Localism). *No unit is examined vertically except*

Definition 5 (Filtering). *Filtering and skin in the game*

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