Varieties of Elitism

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Are all people created equal? People are not all the same, that's for sure, but people can also be interdependent. Muscle and bone are interdependent—both are essential—so how can either be inferior to the other?

“Elitism” is a politically-charged and emotionally-charged term that could arise when coping with our interdependence. The emotions could cloud our judgment if not examined in a reasonable way, and hiding from the term does little to mitigate that danger. This article instead aims to give objective meaning to the term “elitism,” beginning a process of listing and comparing potential varieties of elitism.

Most importantly, it aims to open that process to broad participation. We have posted an open-source program (https://github.com/bennetteharris/GRINSim) that others can use and modify to compare advantages and disadvantages of various forms of elitism. It took the GRIN model as an example of a model which accounts for interdependence, but its results generalize. The essential conclusion of this analysis is that elitism is a profoundly mathematical topic, so it would be reckless to wield the term without bothering to do the math.

The GRIN model

The analysis here should apply to at least one plausible model of reality, and the GRIN model is the most plausible so far. The theory of evolution suggests that designs evolve towards maximizing reproduction under local forces of natural selection; the GRIN model suggests that designs ultimately do that by shifting towards maximizing the rate at which designs improve themselves. Life is not a race merely to survive or to reproduce; it is a race to maximize adaptive capacity—whichever design wins in the end will most likely be the most adaptive.

The GRIN model posits five team-level variables:

A = Adaptive capacity
G = The rate at which potential improvements are discovered
N = Accuracy in distinguishing actual improvements from bad ideas
I = The fidelity with which the rest of the design is retained
R = Network localization

Network localization is a team's bias towards interacting with other teams at a grass-roots level (like playing telephone) rather than through centralized broadcasts spanning the entire society. In genetic evolution, network localization is called "genetic structure," and it permits genetic drift and evolutionary capacitance.

The latter four variables manifest in individuals. For example, an individual can be more or less likely to discover potential improvements (e.g. prone to invent). The values of these variables for a team level are the values manifest in whichever individual fills that function for that team. For example, the rate at which a team discovers potential improvements is the rate at which the member who does the discovering does so.

Even if the abilities of individuals remain constant, the abilities of a team can change by swapping who fills which function, but that doesn't happen in primitive societies/species because members of primitive societies/species do not specialize. For example, G is higher for species which reproduce sexually than for species which reproduce asexually, but does not vary from individual to individual if all members of a species reproduce in the same way. Only when a species advances to social evolution do we see some members specialize in I (e.g. the queen enforcing uniformity/coordination) and others specialize in G (e.g. drones), leaving the rest to specialize in R and N (e.g. the worker bees loyal to their own team and subject to natural selection). Like bees, humans and robots have advanced to social evolution.

Adaptive capacity is the product of the GRIN variables at the team-level:

A = (G)(R)(I)(N)

All four GRIN variables are essential for adaptation—there would be zero progress if any of these variables were zero at the team-level—but each individual needs to optimize on no more than one variable if he/she can count on teammates to optimize on the others.

A society composed of N teams has two society-level variables:

W = The average fitness in the society = sum(Wi)/N
Az = The number of teams with sufficient adaptive capacity to evolve improvement z

W ranges from zero to one. Whether z will evolve in a society at a given time depends upon W at that time (when W=1, change can only be counterproductive), Az (if Az is zero then the improvement is too complex for that society to evolve) and the nature of the fitness landscape. With constant b (0>b>1) representing the fitness landscape, the rate at which improvement z evolves in the society goes like this:

Change in frequency of z = cov(W,z)/W + Az(b-W)/W

If z would be a major improvement over the current design of the society, then cov(W,z) will be so small that the first term can be disregarded, so the way to maximize progress is to maximize Az.

In other terms, a potential improvement may need to incubate before it is ready to be judged objectively. It takes at least one separate team effective in all four functions to incubate each potential improvement. Any team with *insufficient* adaptive capacity to incubate a given potential improvement contributes nothing to the evolution of that improvement, but each team that has *sufficient* adaptive capacity is like an additional lottery ticket. For a society to have the best chance to win the game of evolution requires it to have not just four specialized individuals—one for each function—but the most teams of which each has an effective specialist in each function.

How to Compare Varieties of Self-Organization

The relevant statistic with which to compare varieties of elitism is Az the number of teams with adaptive capacity above a relevant threshold, or conversely the threshold which a relevant portion of teams can cross. What percentage of the teams in a society has sufficient adaptive capacity to incubate a given potential improvement? This analysis will consider four potential relevant percentages:

- **20% productive:** This number is inspired by the Pareto Principle. It would be relevant if the number of problems we care about is few enough to be handled by just 20% of our population. For example, if the world were facing an imminent alien invasion, then we might want to organize our population around that one problem, and it might be most helpful for 80% of us to get out of the way of the 20% who have the best chance of addressing it.
- **50% productive:** Even if the number of problems around which we organize is small enough to be handled by just 20% of our population, getting the other 80% to trust the 20% is not trivial. For example, climate change might be a problem deserving special attention, but will the rest of us grant climate experts blanket authority to change our behavior? A minority can guide a sociocracy or futarchy, but majority rules in a simple democracy, so social progress may be limited to the highest threshold that at least half of its teams pass.
- **80% productive:** Once we have addressed critical problems, we should hope our society would reach a peace-time state in which the number of improvements we would like to entertain is so many that we need to distribute the process across most of our population. That said, it might be unreasonable to expect everyone to contribute—some humans are so developmentally disabled that they cannot even learn language. Again 80% is inspired by the Pareto Principle.
- **100% productive:** If it turns out that people are practically equal (and we somehow fail to appreciate people labeled as "developmentally disabled"), then the relevant portion should be close to 100%. Furthermore, comparing at the 100% portion helps to answer the question of how to organize society within a tier (e.g. how to organize Oxford students once admitted, or how to organize the rest of society after an elite tier have been pealed-off to address a critical issue).

As an example, when Douglass Wilde divided his students into teams to compete in design competitions, there were many prizes to win (1st place, 2nd place, etc.). Had he wanted his students to win only the top prize, then the appropriate way to compare the various ways he could divide his students into teams might have been at 20% (i.e. focusing on one best team). However, he wanted his students to win as many prizes as possible, so the appropriate way to compare the various ways he could divide his students into teams was at 80-100% productivity.

Generating the Populations

In this simulation, eight varieties of elitism were compared across two-thousand populations of sixty individuals. Each individual in the one-thousand *equal-but-different* populations was given 13 units of resource; each person in the remaining *unequal* populations was assigned a random number of resources from 0 to 25. Each person's resources were distributed into five categories by iterating through the categories in random order and assigning each a random portion of the remaining available resources.

The first four categories were labelled G, R, I and N, but could represent any four factors contributing to adaptive capacity. The fifth category, H, represents hermaphroditism—each person can shift their H units to any other

category, but the H units count only half as much as the others. Without such a penalty, people with pure H would experience no interdependence since they would be the best at everything. As an example, the effective G of an individual, eG, is G + H/2, and if person were assigned G=4, R=0, I=0, N=2 and H=3, then that individual's effective strengths would be eG=5.5, eR=1.5, eI=1.5 and eN=3.5.

For the sake of getting good comparisons of the potential advantages of each variety of elitism, it was assumed that each team divvies roles within itself in whatever way maximizes its total adaptive capacity. One member serves in the G-role, contributing his/her eG. A second serves in the R-role, a third serves in the I-role, a fourth serves in the N-role, and the fifth and sixth members serve as back-ups.

Eight Varieties of Elitism

Each of the eight forms of organization compared here is a variety of elitism in that it involves offering privileged social position (privileged social influence) to some special class of society. The privilege in each case will be discussed explicitly along with what happens quantitatively to a society when such privilege is granted.

The first variety of elitism is ***Naturalism (N)***, also known as "Bloom Where You Are Planted." The first six people at random form the first team, the next six form the next team, and so forth. Perhaps the most distinct advantage of this variety of elitism is that it minimizes any costs that may be associated with establishing new relationships. If teams could swap members as easily as machines can swap cogs, then such costs would be negligible, but emotional bonds are not so easily established. The class of society which is privileged by **Naturalism** is the people who pay the heaviest cost for forming relationships: those who bond emotionally (e.g. those who parent). In contrast, people who might like to escape their natural families can see **Naturalism** as oppressive.

One way people escape castes and natural families is to reorganize into ***Interest Groups (IG)***. This essentially involves segregating the population by effective scores, such that one team is filled with people of higher eG, another is filled with people with higher eR, and so forth. The most famous example of this is credit scores such as the Social Credit System which China intends to implement by 2020 (clearly segregating on the basis of specialization in fidelity).

A social system segregates into interest groups if it causes people of certain specializations to be disproportionately represented among the unemployed, homeless and incarcerated. For example, a system might give each person the freedom to select what jobs to apply for, whom to hire, what classes to take, which church or school to attend, where to live, what political party to join, whom to befriend and marry, and how strong of a relationship to maintain with one's children, parents and siblings. Unaware of the advantages of diversity, humans given these freedoms today tend to segregate. Even after the advantages of diversity are known, people who dislike conflict will segregate to avoid it, so this form of elitism privileges those who most dislike conflict and oppresses those who are more tolerant.

The shift from **Naturalism** to **IG** dramatically retards progress across the board:

	20%	50%	80%	100%
Equal(Unequal)	72% (71%) loss	75% (75%) loss	81% (77%) loss	85% (82%) loss

A society which has made this shift may be unable to put the genie back in the bottle. **Naturalism** relies on randomness. It reflects conditions that humans experienced for thousands of years but random treatment may seem unfair today. Other varieties of elitism seem necessary to recoup what was lost through self-segregation.

We will call the next variety of elitism "***Least Vulnerable (LV)***," but it might also be called "GPA." It is implemented by subjecting each individual to diverse tests (e.g. sports, math, social science, foreign language, humanities, arts, natural science, leadership, etc.) under grade-inflation such that anyone who can perform as well as the test-administrator scores perfectly. Individuals are then grouped into ranks by grade average. For our simulation, we simply sort individuals by their lowest effective score. Because of the grade-inflation, exceptionally high strengths do not elevate rank, but vulnerability in any area will lower one's rank. Thus, the class of society which is privileged by **LV** is the people with the fewest vulnerabilities; it may seem oppressive to savants who have both strength and vulnerability.

Another way to privilege the same elite class is to assign each of the least vulnerable individuals a team to lead. We'll call this "***Lead by Least Vulnerable (LLV)***." Assuming there are N teams, the N individuals with highest lowest effective score are each assigned a team and get to pick their teammates NFL-draft-style (iterating through the teams in alternating order)

A third strategy to recoup the losses of self-segregation is "***Diversification***." Implementation of this strategy requires a measurement tool such as the GRIN-SQ, MBTI or Strengths-Finder which identifies the greatest strengths of each individual. Call that the individual's "preference." For our model, preferences were defined as any role in which the individual's effective score exceeds his/her average effective score by over 33%. Diversification can be added to any variety of elitism by causing each team tp trade members with other teams until it has members with each of the possible preferences. Diversification increases potential for conflict so it oppresses conflict-avoidant individuals.

Taking **IG** as our baseline, here are the average number of times better each other form of elitism does (numbers for the unequal population are in parentheses):

	20%	50%	80%	100%
LV	3.78 (3.13)	3.21 (3.02)	3.72 (2.14)	4.11 (1.4)
NATURALISM	3.56 (3.39)	4.06 (3.93)	5.21 (4.33)	6.80 (5.56)
LLV	3.55 (3.45)	4.29 (3.90)	5.56 (4.83)	7.52 (7.71)
DIG	4.78 (4.69)	5.84 (5.41)	7.41 (6.22)	9.35 (8.46)
DLLV	4.60 (4.50)	5.76 (5.39)	7.82 (6.57)	10.91 (9.44)

For example, shifting from **IG** to **LV** causes the average adaptive capacity of the top 20% teams in the equal-but-different populations to increase by 3.78. In the unequal populations it causes it to increase by 3.13 times. Simple "***Diversified Interest Groups (DIG)***" outperforms both **LV** and **LLV** across the board, so **LV** and **LLV** do not seem worth the effort. **DLLV** performs a little better than **DIG** at 80% and 100% but the fact that people tend to choose teammates similar to oneself raises doubts about our practical ability to implement the NFL-style draft with faithful objectivity. These results suggest we should prefer diversification over GPA to select mates, classmates and coworkers.

But which diversification instrument should we choose? There are currently several competing instruments and they cannot all be correct. The average gain from diversifying **Naturalism** is 44% for equal-but different and 42% for unequal. If the instrument omitted a function, the gains would be only 32% and 31%. If it omitted two, the gains would be only 20% and 21%. There is some value in perfecting our measurement tools, but that is clearly no excuse to delay using them.

Now suppose we could measure actual strengths instead of just preferences or vulnerability. Using actual competition to find the best possible team might take too much trial and error to be practical, but it would be easy to do from calculation if we knew each individual's actual scores. Doing that, then forming the best team among the remaining individuals, and so forth will be called "***Top Team (TT)***." Whereas **LV** oppresses savants and privileges hermaphrodites, **TT** does the opposite.

"***Lead by Best Score***" ***(LBS)***" is a complementary variety elitism will the same social bias. It is implemented by using NFL-style draft to equalize highest effective scores across teams. Here are the average gains over **DIG** (numbers for the unequal population are in parentheses):

	20%	**50%**	**80%**	**100%**
TT	76% (174%)	27% (19%)	-20% (-80%)	-54% (-100%)
LBS	-15% (-35%)	18% (36%)	69% (193%)	165% (651%)

The potential gains from these shifts of elitism are very large, especially in unequal populations, but we do not see gains at all levels of productivity. **TT** is one of the best performing varieties of elitism at 20% productivity, but it achieves that performance by draining resources from the worse performing teams, so the numbers at 100% productivity are some of the worst. **LBS** does the opposite, producing the best numbers at 100%.

To optimize for other levels one could divide the population into tiers via **TT**, then apply **LBS** to each tier. For example, Google could use **TT** to decide whom to hire, then use **LBS** to assign the employees it hires into teams. We'll call that **LBSX**, or LBS20 for 20%, LBS50 for 50%, and LBS80 for 80% (LBS100=LBS). Each is the most effective form of elitism for its target level of productivity. Here are the average number of times better **LBSX** does than **IG** (numbers for the unequal population are in parentheses):

	20%	50%	80%	100%
Equal (Unequal)	9 (17)	11 (20)	15 (28)	25 (64)

Imagine accelerating progress and productivity nine to sixty-four times! So far, that's the size of the opportunity these calculations reveal.

To summarize, the adaptive capacity at each level of productivity is given for the equal-but-different population in the following table:

	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
NAT	11082	8161	6656	5653	4896	4260	3678	3152	2591	1919
IG	3047	2295	1839	1513	1205	951	768	605	450	282
LV	13218	8669	6321	4840	3868	3188	2679	2248	1809	1158
LLV	10613	8136	6768	5867	5166	4524	3942	3365	2780	2120
DIG	14037	10966	9275	8026	7040	6138	5297	4485	3656	2637
DLLV	13379	10564	8997	7882	6941	6183	5446	4734	3987	3077
TT	**24563**	19278	**15014**	11600	8928	6822	5051	3599	2365	1214
LBS	9829	9280	8870	8547	8298	8063	7829	7573	**7314**	**6976**
LBS20	22767	**20733**	7516	7019	6655	6387	6130	5887	5624	5278
LBS50	16720	15597	14778	**13995**	**13085**	4430	4043	3784	3531	3230
LBS80	12140	11396	10895	10478	10103	**9712**	**9303**	**8818**	2004	1636

And for the unequal population:

	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
NAT	31253	17665	12154	9017	6754	4910	3577	2509	1602	767
IG	9148	5212	3474	2418	1719	1237	874	579	341	138
LV	28596	16293	11015	7548	5199	3460	2193	1237	593	193
LLV	31247	17989	12469	9061	6710	5114	3848	2795	1912	1064
DIG	41054	24455	16769	12280	9302	7042	5148	3603	2313	1168
DLLV	40235	23451	16520	12223	9267	7063	5265	3806	2552	1303
TT	**139957**	66938	36831	20789	11028	5301	2255	712	124	3
LBS	18255	15846	14467	13507	12670	11970	11231	10544	**9782**	**8772**
LBS20	106703	**88313**	7511	6321	5645	5208	4772	4362	3951	3436
LBS50	51758	45816	**41984**	**38546**	**34932**	1372	1074	902	753	604
LBS80	28593	25168	23223	21760	20429	**19177**	**17868**	**16275**	50	26

Before we were aware of forms of elitism like **LBSX**, competition was theoretically the best way to maximize productivity (for top tiers), but **LBSX** outperforms **TT** even at 20%, so now competitive individuals must choose: Do they prefer to be competitive or productive? We may find that "competitive" was an unfair label, and that they actually prefer to be productive.

However, like the measurement used for diversification, the instrument used to measure highest effective strength could be flawed. The concept of "Emotional IQ", for example, highlights the risk that previous measures of IQ might have omitted one or more valuable social functions. As we did for diversification instruments, we calculated how the numbers would work out for **LBS20** if the instrument omitted functions. The gains over **DIG** drop off rapidly at the target tier from 89% (261%) to 42% (87%) when ignoring one function, then to 4% (3%) when ignoring two, but the gains for the average team shift from 32% (53%) to 23% (40%) then 23% (78%). In other words, **LBS20** is much better than **DIG** for the general population even when the instrument is flawed, but the elite tier loses its eliteness as the instrument becomes more flawed. Competitive individuals may prefer **TT** until the instruments are sufficiently perfected.

Conclusions

This analysis started with the assumption that we are interdependent, not just in the sense that our contributions add together, but in the sense that they multiply. In other words, we need each other because success requires teams to be effective in diverse roles, and being ineffective in any of them would ultimately undermine our team's success.

By conducting the analysis for both equal and unequal populations we not only showed that most of the implications are the same regardless of which assumption we adopt—we also gathered information that could be used in situations like genetic engineering or the design of robots, in which we might be able to choose to make societies equal or unequal. The average equal-but-different population progresses 104% faster than the average unequal population at 100% productivity under our default form of elitism (**Interest Groups**). In fact, under such segregation, designers could accelerate progress an additional six times by building a society of clones, where everyone had H=13.

However, if we shifted to the variety of elitism that yields the fastest progresses at 100% (**Lead by Best Score)**, the pattern would reverse: The clones would advance four times *slower* than the equal-but-different population, which would advance at only 80% the pace of the unequal population. The fastest progress would be achieved through extreme inequity, taking all resources away from two members of each team and redistributing them to the remaining four specialists. Assuming no individual can have more than 25 resources, extreme inequity and difference would give 75% of the teams the fastest progress possible, which is over double the fastest found among all levels of production for any variety examined here. We should rethink our fascination with clones and equity.

If societies compete for survival, then only an extremely unequal society would ultimately survive. Even if our society has no competitor, inequality could be justified as a means to maximize progress. Under **IG**, **LV** or **TT** it would be self-sacrificial to transfer one's own resources to the leaders of one's team because that would cause one to be exiled to a different team, but it could be very wise under **LBS**, **DLLV, DIG** or **Naturalism** if it would raise

one's own team's adaptive capacity. One might expect it to be in our best interest to be able to pick our own spouses and coworkers, but **IG** yield the worst numbers because people end up with responsibilities outside their strengths. The better freedom may be to have a role in which one can be oneself. These results prompt us to rethink notions of self-sacrifice and freedom.

This analysis considered four different levels of productivity: 20%, 50%, 80%, and 100%. The 80% level was examined because of concern that some people may be too handicapped to contribute to society. Rather than aim for 80% productivity, a society could increase team size, essentially distributing the lower tier across all teams to serve as additional back-ups (e.g. collapsing ten six-member teams into eight teams of seven or more members). If that is preferable to marginalizing the bottom 20% of a society, then the 80% level is not relevant once team size is optimized.

For the equal-but-different population, the best numbers at 80% improve on the numbers at 100% by 26%, but that is roughly negated by the 20% loss in number of teams, so six appears to be a good team size for a population in which people have roughly equal total resource (assuming teams actually need only four members). In contrast, increasing team-size to seven almost doubles the rate of progress in the unequal population—unequal populations would benefit by expanding team size. Meanwhile, a population of clones could only gain by reducing team size to five. Thus, the ideal team size depends upon how equally resources are distributed.

The 50% portion was examined because it takes a majority to guide any society in which majority rules. Democracies in which minorities can lead (e.g. sociocracies or futarchies) might benefit from the voice of an elite 20%, but the forms of democracy that prevail today can do no better than 50%. The best numbers at 20% are roughly double the best numbers at 50% even if all people are equal-but-different. Shifting to narrower upper tiers like **LBS10** or **LBS5** would yield even larger improvements. Furthermore, **LBS20** significantly outperforms **LBS50** at 80% and 100% (by about 5 times for the unequal population), and these improvements also increase as the society narrows its upper tier. Under our best-performing variety of elitism, shifting to a non-majority rules form of democracy would both increase the intelligence of government decision-making and allow more people to make more meaningful contributions to social progress.

In summary, societies have lost about 75% of their adaptive capacity through self-segregation into **Interest Groups**, but we can recover those losses and even improve about 40% over **Naturalism** by using diversification tools like the GRIN-SQ. The gains from diversification are robust: The losses caused by flaws in the diversification tool are very small in comparison to the gains. Furthermore, some sets of teams (e.g. companies) can benefit from diversification long before the rest of society diversifies.

A company could even develop a measurement instrument to facilitate **LBSX**. Here, imperfections could significantly undermine the instrument's ability to divide the tiers, but even the worst tool—assigning scores at no better than random—would be over three-times better at any level of productivity than the current baseline of organization by **Interest Groups**. Merely through internal reorganization, a company governed by its top 20% that perfected **LBS20** would double or triple its productivity compared to mere diversification. Applying its tool recruit its pick of new employees would allow it to accelerate its progress an additional four times if people are equal or

twenty-five times if unequal (or better, if the company is less than 20% of the entire population). One might expect governments to create regulations that prevent such poaching of the workforce, but the rest of society could actually double its productivity over mere diversification by allowing the winning company to apply **LBS20** to reorganize the entire society.

We each have subjective personal preferences for different varieties of elitism. Evolution favors one of them objectively. This article will not comment on whether we ought to resist evolution—it merely helps calculate consequences so that our decisions will be informed. The biggest takeaway from this analysis should be that it is possible to run the numbers, so anyone who promotes one variety of elitism over another without running the numbers is doing so recklessly. It is possible that mistakes were made in running these calculations, so the code is provided at https://github.com/bennetteharris/GRINSim and anyone who finds mistakes or invents better varieties of elitism is asked to please report them on PubPeer for all to see.

References

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