When Measurements Become Targets

-Goodhart's Law-

In the 1970s, British economist Charles Goodhart, in response to the harmful over-reliance on statistically estimated relationships for making monetary policy decisions at the time, stated that "any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes", which later became known as Goodhart's Law [1]. Although initially proposed as a criticism of macroeconomic policy under the Thatcher administration, Goodhart's Law has also been generalized to be applicable to a broader range of topics. In a more modern, less narrowly economic context, Goodhart's Law says that previously reliable measures of progress stop being reliable once they effectively turn into targets that are consciously aimed towards; or in simpler terms, "when a measure becomes a target, it stops being a good measure" [2]. Therefore, logically, explaining this rule requires first an explanation of why incentives to turn measures into targets exist and second an explanation of why such a transition is harmful.

As demonstrated in the original example of Goodhart's Law, one major reason incentives to turn measures into targets exist is the illusion of effectiveness or progress provided by statistical benchmarks. In other words, it is the misinterpretation of correlation with reciprocal causation; since A and B have been shown to be related, a higher B must lead to a higher A. While such a logical fallacy may seem obvious to many, a few following examples show that it is fully capable of fooling even the most cautious. Another major reason is the misalignment between general benefit and the short-term desire for reward. Even if the transition of a measurement into a target has already proven problematic, the short-term benefits of pursuing that target may very well outweigh, or seem to outweigh, the benefits that treating a measurement, exactly as it is, would bring.

Secondly, the harms associated with the transition of a measure into a target are primarily caused by the wrongful prioritization of various factors of progress. While measurements measure progress, they are not progress itself, but rather various reflections of various aspects of progress. Therefore, an emphasis on just a few measurements, caused by treating them as targets, is an emphasis on just a few aspects of progress, resulting in a distortion of progress itself. While the extent of this distortion is dependent on a wide array of factors, most concerned with the specific nature of the measurements chosen, it goes without saying that they are not ideal.

This essay provides two insightful examples demonstrating Goodhart's Law. Not only do they attempt to validate the law itself, but they also serve as warnings against people's natural tendency to turn measurements into targets. Furthermore, the examples are relatively distinct from each other, thus demonstrating the wide applicability of Goodhart's Law and its potential to serve as a general, though not to the point of universal, guide for decision-making.

No Child Left Behind

At the turn of the century, the United States began fearing that its public education system was no longer capable of helping students in the country achieve academic success. Many believed that this would lead to a disadvantage for the country on the international stage. Furthermore, at the time, there existed a significant performance gap for students of different socioeconomic status; students from poorer families, many of whom were also racial minorities, faced barriers to accessing quality education, making it even harder for them to catch up with their better-off peers.

As a result, in 2002, with broad bipartisan support, Congress passed the No Child Left Behind Act (NCLB), which aimed to improve public education by holding schools accountable for the performance of their students. The NCLB required states and schools to administer standardized tests that measured whether students, especially those disadvantaged socioeconomically, were performing at an academically "proficient" level. If a school's students were not proficient enough or were decreasing in their degree of proficiency, the school was at risk of facing federal sanctions and direct government intervention [3].

Despite its noble intentions and seemingly reasonable plans of execution, the NCLB is poorly remembered today. Many cite it as a prime example of federal overreach undermining the authority of local governments, and the standards it forced on schools have proven to be often extremely unrealistic. Additionally, the restrictions and regulations that the NCLB allowed the federal government to impose on schools, as many argue, actually harm the quality of education.

Nevertheless, the biggest criticism that NCLB faces today is its emphasis on standardized testing, which has created a long-lasting impact on the American education system. Since the NCLB measured the quality of school education through students' test scores, teachers began "teaching to the test". Many believe this made schools, and education in general, less focused on creating well-rounded individuals and instead more focused on awarding students who just so happened to be good at taking tests on subjects that just so happened to be tested [4].

This example demonstrates Goodhart's Law nearly perfectly. The measure, scores on standardized tests, went from an indicator of teaching quality to a target of schools and education; this transition then made standardized tests no longer a reflection of academic proficiency, but rather a reason for priorities to be wrongly placed.

Equality, Equity, Justice

There is an extremely popular image comparing the differences between Equality and Equity. According to the image, while the concept of equality quite literally means "exactly the same for all", Equity takes into consideration the needs of all individuals and provides them with sufficient help so that in the end, everybody reaches the same level.

Conventional wisdom says that Equity is a more noble, and more mature, goal for societies to aim for. People are not universally identical, and thus should not universally be given the same treatment. However, what people often neglect is another even worthier goal — Justice — or the absence of any social barriers limiting equal access to opportunities. While equity is a response to inequality, Justice aims to eliminate inequality. Different heights require a different number of blocks to stand on, but if that wall disappears, then nobody would even need any blocks in the first place.

Naturally, society has created measurements that are supposed to measure levels of Equality, Equity, and Justice, with the most notable of them being diversity, usually quantified by the statistical gender or racial composition of a group. Naturally, If structural barriers are eradicated, people previously marginalized in certain fields and industries based on factors such as race and gender will then be allowed entry, enriching the demographic makeup of a group. Thus, diversity is a great indicator of the eradication of social barriers to equal access to opportunities, a sentiment commonly shared among contemporary academic and political circles to a decent extent. The controversy comes, again, when diversity becomes a target that is actively pursued, primarily through policies such as Affirmative Action and DEI (Diversity Equity, Inclusion) recruitments. Given their naturally contentious nature, these policies themselves will not be discussed. Instead, what will be discussed is, again, the role that Goodhart's Law plays in all of this.

Given what Goodhart says, when an indicator of social progress, or in this case, diversity, becomes a target rather than a passive indicator, it no longer is a good indicator. If this is truly the case, then policies such as Affirmative Action, the giving of extra help to historically discriminated groups, must be inherently wrong. This is certainly what members of the organization, Student for Fair Admissions (SFFA), for instance, believe. A common argument they make is that Affirmative Action disadvantages white and Asian applicants to universities, as demonstrated by their famous slogan, "Discrimination in the name of Diversity is wrong". Another argument is that recruitment quotas, the requirement of a certain percentage of successful applicants to be of a certain gender or race, actually leads to discrimination against those "quota applicants", as people will tend to believe that they did not succeed based on any real talent or merit, but rather simply because an employment policy happened to be in their favor. In summary, an over-emphasis on diversity, in and of itself, absent the context of overall societal justice, is indeed, capable of leading to negative outcomes.

However, unlike the case of the NCLB Act, what makes the relationship between diversity and social justice complicated, is the fact that diversity, the measure, can be considered as a worthy goal itself as well. Many people strongly believe that diversity within a decision-making group leads to better outcomes, as more perspectives are provided, considered, and debated. Studies have also supported this, with some, for example, finding that gender-diverse teams make better business decisions 73% of the time [5].

Such a more well-rounded view of the issue leads to the realization that while Goodhart's Law is still clearly demonstrated, the complexity of the problems discussed requires more factors to be considered, and the pursuit of diversity to achieve social justice is not definitively correct, nor is it definitively wrong. Despite all the controversy and gray areas in between, the bottom line is that diversity should never be used as the single measurement for social justice, and artificially increasing the degree of diversity within any group should never be confused with true social progress. There is no doubt that more equal access to academic and employment opportunities empowers groups previously discriminated against, but there is still a long way to go when it comes to eradicating opportunity inequality and achieving social justice.

-Coda-

Despite making sense in principle, Goodhart's Law requires two additional qualifications. The first is that the treatment of a measurement as a target, in some cases, is not as harmful as in other cases. Thus, the cost of fighting against the natural tendency to treat a measurement as a target, may very well outweigh the negatives that this natural tendency actually brings. Very few

proponents of the NCLB Act would argue that standardized testing as a metric of academic capability is perfect, and even fewer would say that "teaching to the test" is a beneficial method of education; yet, the NCLB Act still embraces standardized testing, in large part because any alternative methods, less susceptible to the problems described by Goodhart, are far more tedious and costly than standardized testing.

The second qualification is that not everything can be neatly categorized as either a "measurement", a "goal", or a "target", as in the case of diversity and social justice. It would be naive to suggest that a single piece of data or a random statistic is a clear indication of Goodhart's Law and is unequivocally bad. A more mature approach would be to embrace the natural complexity of many issues (economic, political, social, etc.) and admit that the boundaries between a successful metric and a false indicator of progress are blurry at best, especially when multiple issues are simultaneously considered.

Nevertheless, Goodhart's Law proves to be widely applicable in most cases. A good understanding of it helps sort out priorities and make better decisions, for individuals, organizations, and governments alike.

Endnotes:

[1] Chrystal, K. Alec, and Paul Mizen. "Goodhart's Law: Its Origins, Meaning and Implications for Monetary Policy." *Edward Elgar Publishing eBooks,* 2003, https://doi.org/10.4337/9781781950777.00022.

[2] Koehrsen, Will. "How to Mind Goodhart's Law and Avoid Unintended Consequences." BuiltIn, 30 May 2023, builtin.com/data-science/goodharts-law.

[3] Klein, Alyson. "No Child Left Behind: An Overview." *Education Week*, 13 Mar. 2024, www.edweek.org/policy-politics/no-child-left-behind-an-overview/2015/04.

[4] Yeban, Jade, JD. "Criticism of No Child Left Behind." *Findlaw*, 8 Nov. 2023, www.findlaw.com/education/curriculum-standards-school-funding/criticism-of-no-child-left-behind.html.

[5] Trappett, Laura. "How Diversity Affects Decision-Making in Communities." Social Pinpoint, 16 May 2023, www.socialpinpoint.com/how-diversity-affects-decision-making-in-communities/#:~:text=Gender%2Ddiverse%20teams%20made%20better,decisions%2087%25%20of%20the%20time.