In Latin America as in the wider world, corruption is rooted in our relationships

Acknowledging that cooperation and corruption are two sides of the same coin can help us to understand why some states succeed and others fail, why some oscillate, and which triggers lead failed states to succeed and successful states to fail, writes **Michael Muthukrishna** (LSE Psychological and Behavioural Science).

There is nothing natural about democracy [1]. There is nothing natural about living in communities with complete strangers. There is nothing natural about large-scale anonymous cooperation. Yet, this morning, I bought a coffee from Starbucks with no fear of being poisoned or cheated. I caught a train on London's underground packed with people I've never met before and will probably never meet again. If we were commuting chimps in a space that small, it would have been a scene out of the latest Planet of the Apes by the time we reached Holborn station. We'll return to this mystery in a moment.

Family-oriented cultures like those in Latin America are also high on corruption, particularly nepotism (Tio Feli, CC BY-NC-ND 2.0)

There *is* something very natural about prioritising your family over other people. There is something very natural about helping your friends and others in your social circle. And there is something very natural about returning favors given to you. These are all smaller scales of cooperation that we share with other animals and that are well described by the math of evolutionary biology. The trouble is that these smaller scales of cooperation can undermine the larger-scale cooperation of modern states. Although corruption is often thought of as a falling from grace, a challenge to the normal functioning state — it's in the etymology of the word — it's perhaps better understood as the flip side of cooperation. One scale of cooperation, typically the one that's smaller and easier to sustain, undermines another.

When a leader gives his daughter a government contract, it's nepotism. But it's also cooperation at the level of the family, well explained by inclusive fitness [2], undermining cooperation at the level of the state. When a manager gives her friend a job, it's cronyism. But it's also cooperation at the level of friends, well explained by reciprocal altruism [3], undermining the meritocracy. Bribery is a cooperative act between two people, and so on. It's no surprise that family-oriented cultures like Mexico and Brazil are also high on corruption, particularly nepotism.

Even in the Western world, it's no surprise that Australia, a country of mates, might be susceptible to cronyism. Or that breaking down kin networks predicts lower corruption and more successful democracies. Part of the problem is that these smaller scales of cooperation are easier to sustain and explain than the kind of large-scale anonymous cooperation that we in the Western world have grown accustomed to.

The role of culture and institutions

So how is it that some states prevent these smaller scales of cooperation from undermining large-scale anonymous cooperation?

The typical answer is that more successful nations have better institutions. All that's required is the right set of rules to make society function. But even on the face of it, this answer seems incomplete. If it were true, Liberia, which borrowed more than its flag from the United States, ought to be much more successful than it is [4]. Instead, these institutions are supported by invisible cultural pillars without which the institutions would fail.

For example, without a belief in rule of law — that the law applies to all and cannot be changed on the whim of the leader — it doesn't matter what the constitution or legal code says, no one is listening. Without a long time horizon, decisions are judged on how well they serve our immediate needs making larger-scale projects, like reducing the effects of Climate Change, harder to justify [5].

Similarly, institutions often lack the punitive power to actually punish perpetrators. For example, most people in the US and UK pay their taxes, even though in reality the IRS and Her Majesty's Revenue and Customs lack the power to prosecute widespread non-compliance; your probability of getting caught is low. The tax compliant majority may never discover that they can cheat or how to get away with it and they may not actively seek this information as long as the probability of getting caught is non-zero, the system seems fair, and it seems like everyone else is complying. Or in other words, it's a combination of norms and institutions.

Not everyone plays by the same rules when it comes to taxes (Tom Hilton, CC BY 2.0)

But, it gets tricky — institutions are themselves hardened or codified norms [6] and the norms themselves evolve in response to the present environment and due to path-dependence of previous environments, past decisions, and the places migrants come from. Modern groups vary on individualism and even sexist attitudes based on their ancestors' farming practices [7]. The science of cultural evolution describes the evolution of these norms and introduces the possibility of out-of-equilibria behavior (people behaving in ways that do not benefit them individually) for long enough for institutions to try to stabilise the new equilibria.

Modelling cooperation and corruption

How do we begin to understand these processes?

The real world is messy and before we start running randomised control trials or preparing case studies, it's useful to model the basic dynamics of cooperation using a simpler form that gets at the core elements of the challenge. One commonly used model is called the "Public Goods Game". The gist of the game is that I give you, and say 9 others, $10. Whatever you put into a pool (the public good), I'll multiply by say 3, but then I'll divide the money equally regardless of contribution. This is similar to paying your taxes for public goods that we all benefit from, like roads, clean water, or environmental protections.

The dilemma is this: the best move is for everyone to put all their money in the pool. Then they'll all go home with $30. But it's in my best interests to put nothing in the pool and let everyone else put their money in. If I put in nothing and they put in $10 each, I'll go home with almost $40 ($10*9*3 people / 10 = $37). What happens when we play this game?

Well, if we play it in a Western Educated Industrialised Rich Democratic (WEIRD) nation, where prosocial norms tend to be higher, people put about half their money in, but as they gradually realise they can make more by putting in less, contributions dwindle to zero. One way to sustain contributions is to introduce peer punishment — allow people to spend some portion of their money to punish other people. This is similar to the kind of punishment we might see in a small village. I know who you are or at least I know your parents or people you know. If you steal my crops, I'll punish you myself or ruin your reputation.In the game, if we introduce the possibility of peer punishment, contributions rise again.

The problem is that this doesn't scale well. As the number of people grows, we get second-order free-riding — people prefer to let someone else pay the cost of punishment. When someone cuts a queue, you grumble — someone ought to tell that person off! Someone other than me… And you can also get counter-punishment — revenge for being punished.

The best solution seems to be to create a punishment institution. Pick one person as a "Leader" and allow them to extract taxes that can be used to punish free-riders. This works really well and scales up nicely. It's similar to a functioning police force and judiciary in WEIRD nations. In fact, the models suggest that the more power you give to the leader, the more cooperation they can sustain. Aha, problem solved!

Not quite. Models like these are very useful for distilling the core of a phenomenon, they can miss things. Recall where we started — smaller-scales of cooperation can undermine the larger-scale.

The addition of a punishment institution, like a judiciary, can improve cooperation (Jeff Kubina, public domain)

Getting into — and out of — the Bribery Game

In our recently published paper, we wanted to show just how easy it was to break that well-functioning institution. We did it by introducing the possibility of another very simple form of cooperation — you scratch my back, I'll scratch yours — bribery. And then we wanted to show the power of invisible cultural pillars by measuring people's cultural background and by trying to fix corruption using common anti-corruption strategies. We wanted to show that these strategies, including transparency, don't work in all contexts and can even backfire.

Our "Bribery Game" was the usual institutional punishment public goods game with the punishing leader, but with one additional choice — players could not only keep money for themselves or contribute to the public pool, they could also contribute to the leader. And the leader could not only punish or not punish, they could instead accept that contribution. What happened? On average, we saw contributions fall by 25% compared to the game without bribery as an option. More than double what the pound has fallen against the USD since Brexit (~12%[8]).

Fine, bribery is costly. The World Bank estimates $1 trillion is paid in bribes alone; in Kenya, 8 out of 10 interactions with public officials involves a bribe, and as Manfred Milinski points out in his summary of our paper, most of humanity — 6 billion people — live in nations with high levels of corruption. Our model also reveals that unlike the typical institutional punishment public goods game, where stronger institutions mean that more cooperation can be sustained, when bribery is an option, stronger institutions mean more bribery. A small bribe multiplied by the number of players will make you a lot richer than your share of the public good!

So can we fix it? The usual answer is transparency. There are also some interesting approaches, like tying a leader's salary to the country's GDP — the Singaporean model [9]. So what happened when we introduced these strategies?

Well, when the public goods multiplier was high (economic potential — potential to make money using legitimate means — was high) or the institution had power to punish, then contributions went up. Not to levels without bribery as an option, but higher. But in poor contexts with weak punishing institutions, transparency had no effect or backfired. As did the Singaporean model [10]. Why?

When transparency confirms corruption

Consider what transparency does. It tells us what people are doing. But as psychological and cultural evolutionary research reveals, this solves a common knowledge problem and reveals the descriptive norm — what people are doing. For it to have any hope of changing behavior, we need a prescriptive or proscriptive norm against corruption. Without this, transparency just reinforces that everyone is accepting bribes and you'd be a fool not to.

People who have lived in corrupt countries will have felt this frustration first hand. There's a sense that it's not about bad apples — the society is broken in ways that are sometimes difficult to articulate. But societal norms are not arbitrary. They are adapted to the local environment and influenced by historical contexts. In our experiment, the parameters created the environment. If there really is no easy way to legitimately make money and the state doesn't have the power to punish free-riders, then bribery really is the right option.

Sometimes even Canadians go bad… ([Frank Winkler](), [CC0]())

So even among Canadians, admittedly some of the nicest people in the world, in these in-game parameters, corruption was difficult to eradicate. When the country is poor and the state has no power, transparency doesn't tell you not to pay a bribe, it solves a different problem — it tells you the price of the bribe. Not "should I pay", but "how much"?

There were some other nuances to the experiment that deserve follow up. If we had played the game in the Colombia instead of Canada, we suspect baseline bribery would have been higher. Indeed, people with direct exposure to corruption norms encouraged more corruption in the game controlling for ethnic background. And those with an ethnic background that included more corruption countries, but without direct exposure were actually better cooperators than the 3rd generation+ Canadians. These results may reveal some of the effects of migration and historical path dependence.

Of course, great caution is required in applying these results to the messiness of the real world. We hope to further investigate these cultural patterns in future work. The experiment also reveals that corruption may be quite high in developed countries, but its costs aren't as easily felt. Leaders in richer nations like the United States may accept "bribes" in the form of lobbying or campaign funding and these may indeed be costly for the efficiency of the economy, but it may be the difference between a city building 25 or 20 schools. In a poor country similar corruption may be the difference between a city building three schools or one. Five is more than three, but three is three times more than one. In a rich nation, the cost of corruption may be larger in *absolute value*, but in a poorer nation, it may be larger in relative value and felt more acutely.

New approaches, new insights

The take-home is that cooperation and corruption are two sides of the same coin; different scales of cooperation competing. This approach gives us a powerful theoretical and empirical toolkit for developing a framework for understanding corruption, why some states succeed and others fail, why some oscillate, and the triggers that may lead to failed states succeeding and successful states failing.

Our cultural evolutionary biases lead us to look for whom to learn from and perhaps whom to avoid. They lead us to blame individuals for corruption. But just as atrocities are the acts of many humans cooperating toward an evil end, corruption is a feature of a society not individuals. Indeed, corruption is arguably easier to understand than my fearless acceptance of my anonymous barista's coffee.

Our tendency to favour those who share copies of our genes — a tendency all animals share — leads to both love of family and nepotism. Putting our buddies before others is as ancient as our species, but it creates inefficiencies in a meritocracy.

Innovations are often the result of [applying well-established approaches in one area to the problems of another](#). We hope the science of cooperation and cultural evolution will give us new tools in combating corruption.

Footnotes:
[1] Putting aside what it means for something to be natural for our species, suffice to say these are recent inventions in our evolutionary history, by no means culturally universal, and not shared by our closest cousins.
[2] Genes that identify and favor copies of themselves will spread.
[3] Helping those who help you.
[4] The United Nations Human Development Index ranks the United States 10th in the world. Liberia is 177th.
[5] *Temporal discounting* is the degree to which we value the future less than the present. Our tendency to value the present over the future is one reason we don't yet have Moon or Mars colonies, but the degree to which we do this varies from society to society.
[6] Written laws can serve a signaling and coordination function; rather than having to interpret norms from the environment. When previously contentious norms are sufficiently well established, you may do well to codify them in law (legislating before they are established might mean more punishment—consider the history of prohibition in the United States).
[7] Not that agriculture is the main reason for these cultural differences!
[8] This doesn't upset me at all.
[9] Singapore's leaders are the highest paid in the world, but the nation also has one of the lowest corruption rates in the world—lower than the Netherlands, Canada, Germany, UK, Australia, and United States [source: https://www.transparency.org/news/feature/corruption_perceptions_index_2016].
[10] Note, there are some conceptual issues that make interpretation of the Singaporean treatment ambiguous. We discuss this in the [supplementary](#). We'll have to further explore this in a future study. Such is science.

General notes:
• The views expressed here are of the authors and do not reflect the position of the Centre or of the LSE
• This article draws on [Corrupting cooperation and how anti-corruption strategies may backfire](#) (Nature, 2017)
• This is a slightly modified version of an article originally published at [Evonomics](#)
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Michael Muthukrishna – *LSE Psychology and Behavioural Science*
Dr Michael Muthukrishna is Assistant Professor of Economic Psychology at the London School of Economics and Political Science. His other affiliations include Research Associate of the Department of Human Evolutionary Biology at Harvard University, Affiliate of the Yale Applied Cooperation Team, Affiliate of the Developmental Economics Group at STICERD, and Technical Director of The Database of Religious History.