THE WINHAM PAPERS

3. The Real Reason Our Society Is Polarized (2018)

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Types of Societies: Imagine two alternative societies. In the selfish society, there are no regulations, few laws, little if any communal infrastructure, and minimal government. At the other extreme is the cooperative society in which selfish behaviors are largely restrained, there is much communal investment in infrastructure, and significant government to enforce laws and oversee communal efforts. While many societies currently fall between these extremes, why does such variation exist? Why doesn't one or the other become the dominant economic paradigm?

It turns out that biologists find the same range of social systems in animals: some show nearly total selfish behavior while others are as cooperative as the extreme human systems. While economists have tried to explain various human systems by assuming rational agents, the finding that the same diversity of economic systems exists in largely irrational animals suggests that something else is going on. And since people turn out not to be that rational either, perhaps the rules governing society type are common to animals and humans. Both theorists and experimentalists have thus tried to identify the evolutionary forces that determine social systems in both humans and animals.

One explanation advanced for highly cooperative societies of close genetic relatives is called "kin selection": in such contexts, evolution favors helping kin produce offspring instead of trying to produce your own. This factor may explain some animal societies, but there are far more in which cooperation is seen without strong kin effects. This has led to an effort to provide evolutionary models in which cooperation is the expected outcome even without kin effects. To my knowledge, no one has identified such a model, at least using realistic prior assumptions. Instead, the best that one can come up with is a dual outcome system in which an evolving society can end up either cooperative or selfish depending on where it started. Rather than bog you down with a lot of math and evolutionary theory, let's look at some simple examples to see why this outcome occurs.

A tale of Bridges: Jim and his family own a farm. Each spring, they make weekly trips to a market where they sell their fresh vegetables for $100 per trip. Because they have to ford a river to get to the market, the delay going and returning means they can make about 10 round trips per spring season for a net income of $1000. There is a local company that will install a portable bridge over the river for them for a seasonal rental of $1500. The bridge would cut the roundtrip time in half, allowing them to make 20 trips per season for a seasonal income of $2000. However, since they would have to pay the $1500 bridge rental, their net profit would only be $500. Clearly, they would be better off not to rent the bridge.

However, the neighboring farm owned by Sam and his family faces identical economic conditions as Jim's family does. Were the two families to split the cost of renting the bridge, $750 for each, then both families could make 20 trips a season and each family would reap a net profit of $2000-$750 = $1250, which is better than the $1000 each would gain without the bridge. So. should they do it?

Probably not. Since they are poor farmers, suppose the rental company lets them wait until the end of the season to pay the fee. If they agree to rent the bridge, they each earn a seasonal benefit (before paying the rent fees) of $2,000. If one family then defaults on paying their share of the fee, the other family would be stuck paying the entire rent leading to a seasonal income of $500, again worse than if they had not agreed to rent the bridge. Unless both families have 100% confidence that the other partner will pay their share, it is better not to enter the agreement and avoid renting the bridge. And the higher the cost of the bridge rental, the greater the temptation for one of the families to agree to the rental and then default on payment. This is called "The Prisoners' Dilemma" game: even though cooperation by both parties has a higher payoff than if both do not cooperate, it always pays to default regardless of what your partner elects to do. Here is the payoff table to "you" (one of the parties) given rental fee payment at the end of the season. The person on the left is the focal decider of what to do. The table then shows the payoffs of their choice of action and what the other party chose to do. In each column, we put a dot in the cell that is the maximum for the player on the left:

	Opponent Plays	
You Play	**Cooperate**	**Default**
Cooperate	$1250	$500
Default	$2000 ●	$1000 ●

The upper left cell in the table gives the "Co-Cooperator's Payoff, the lower right cell shows the "All-Default Payoff", the lower left cell shows the "Temptation to Cheat Payoff", and the upper right cell gives the "Sucker's Payoff".

Waiting until the end of the season to pay the rent may tempt one or both of the parties to default. What if the bridge renters know this or there is a local law that bans either family from using the bridge further if they have not paid their share of the rent by the time they have completed 5 round trips? A family that has not paid their rent after 5 trips on the bridge will have to use the slower way to market for the rest of the season. The family that does not default still has to pay the full rent and thus have a season profit of $500. But now the defaulting family will only have a net profit of $1200 which is less than the $1250 they would have earned had they not defaulted. We now have a game with two optimal strategies: if your partner cooperates, you should also; if your partner is likely to default, then you should not enter into the deal. How confident should you be before you agree to sign the rental agreement? In fact, this can be calculated and for these payoffs, you need to be 91% sure your partner will pay their share before signing any agreements.

	Opponent Plays	
You Play	**Cooperate**	**Default**
Cooperate	$1250 ●	$500
Default	$1200	$1000 ●

If the law says a renter is banned if they fail to pay after 2 round trips, then the seasonal profit for a defaulter drops to $1,000, a less tempting sum, and an honest renter only needs to be 67% sure their partner will not default before signing the agreement. They payoff table becomes:

	Opponent Plays	
You Play	**Cooperate**	**Default**
Cooperate	$1250	$500
Default	$1000	$1000

The point is that even with this kind of rule, a potential partner will do as well or better by signing the agreement and then later being the only one to default. If the second party then also defaults, they are both likely to be sent to jail. The second party will not want this and is thus likely to pay the whole rent. By signing the agreement, the potential defaulter is thus tricking the second party into adopting the cooperate option where he later can be exploited. The issue then boils down to **trust**: how accurately can each party evaluate the honesty of the other.

Clearly, one solution is to require payment up front before anybody uses the bridge. Now there is no way to default, so everything is OK. Right? Wrong. Humans and animals are terribly adept at finding some way to cheat. Suppose both Jim and Sam sign the agreement and pay the fee for the 40 round trips they need. Unbeknown to Jim, Sam has 2 trucks and his family has stockpiled vegetables. As the season progresses, Sam makes 30 trips in the time Jim makes 10. With their quota up, Jim either has to pay more fees or use the slow route for the remaining half of the season. Sam ends up with a seasonal profit of $2,250 and Jim gets only $750, worse than if he had not agreed to the deal. Without another law, we are back to the Prisoners Dilemma.

	Opponent Plays	
You Play	**Cooperate**	**Default**
Cooperate	$1250	$750
Default	$2250	$1000

The moral is that cooperation is invariably not favored at all (a Prisoners' Dilemma) or at best a dual optimum game where the best strategy is to do what your potential partner is most likely to do. And of course, that is at best a guess. This type of game only favors joint cooperation if there is a sufficient level of trust between the two parties.

Note that there is always a grey area between intended default and error. For example, if Sam made 21 bridge trips, limiting Jim to 19, should he be punished? Maybe he just loss count. This is why systems of laws and punishments designed to ensure fairness need a parallel court system to decide whether a default was an accident or intentional, trivial or egregious.

One way to improve the estimate of the other person's trustworthiness is to extend this to an iterated game. If a potential partner defaults early in a sequence of times the game is played, the estimate of their reliability should be decreased; if they cooperate several times in a row, then the estimate

can be increased. Economic models of reciprocity are based on such iterated games. Interestingly, none of them using reasonable assumptions can shift the dual optimum game to one in which cooperation is the sole optimum strategy.

Population Games: The above two-party games can be generalized to populations. The math is a bit more complicated, but the basic conclusions are the same. Cooperation in a society is often hindered by a Prisoners' Dilemma situation, where it is usually called a "Tragedy of the Commons". And like the 2-party examples, one can institute rules and regulations that convert it to a dual-optimum game. As with the two-party examples, a "tipping point" can be computed based on the payoffs in the table, above which the average person should cooperate and below which they should default. In a population game, the tipping point is the likely fraction of the population who would prefer to cooperate versus those who would not. Choosing a strategy is the same: if you think the fraction of cooperators in the population is above the tipping point threshold, then it is usually in your best interests to cooperate. If not, then you should not cooperate. A population that initially is mostly cooperative might suffer some economic shock, spread of an anti-government religion, discover some unknown graft, or whatever might undermine the mutual trust needed for cooperation. Once the fraction of those committed to cooperation drifts below the tipping point, there will be an accelerating pressure to drive the entire society to the default uncooperative state. Similarly, a society that is mostly selfish and uncooperative that through various events drifts above the tipping point will experience an accelerating pressure to become more cooperative. Which state is most likely by chance is the one that is least abundant at the tipping point.

Do such shifts really occur? Absolutely! History is full of examples of societies switching back and forth between cooperative states and selfish exploitative ones. It is interesting that very young children also show an alternation between being generous and cooperative and then selfish and manipulative. This is probably an adaptive trait since no child can know at that age whether they were born into a cooperative or selfish society. By being able to act in either mode, they can then abandon one or the other strategy as they figure out where they have landed. It may also pay for adults to periodically switch just to test the waters and see whether the society is changing. However, adults can more safely judge where a society sits relative to its tipping point by observing the behavior of others. If you see most other people running stop signs in their cars, you would fairly surmise that defaulting was on the rise.

The examples above all focus on discrete alternative strategies. In real societies and even in many 2-party games, the options fall along some continuum. The corresponding payoffs for adopting different combinations of strategies usually vary continuously as well. One still sees the use of laws and punishments to turn Tragedy of the Commons situations into dual-optimum games with tipping points. Where a society falls along the continuum for one kind of transaction (say, renting properties), need not be the same place where it falls along the continuum for another kind of transaction (say providing insurance services). Thus, the level of default that is tolerated without punishment or additional laws may differ among types of transactions. However, there is most often "spill-over" between transaction types leading to a common expectation of reliability and thus trust. Shifts in one class of transactions can easily put pressure on others to follow suit. What is considered "fair" behavior" can converge on a society-wide standard.

There are two important differences between 2-party and population games. These involve how the per-person payoffs of cooperating in a largely cooperative society, and of defaulting in a largely default society depend on the numbers of individuals playing the dominant strategy. Cooperative societies often exhibit "synergism" in which the result of a team effort is greater than the sum of the individual team members' efforts. Ten workers can often build a bridge that is more than ten times larger than what a single worker can build, or perhaps build a given bridge in less than 1/10 the time it would take a single worker to build it. Adding more cooperative workers to a project can thus increase the average per-person payoff (thus increasing the upper left cell in our game tables). Where synergism is prominent in a cooperative society, a dual-optimum game is more likely, and the threshold tipping point is lower, making it harder for a society to drift across it and become a default society.

Synergism is unlikely in an all-default society. If anything, the increased opportunities for gouging customers, bribery and corruption, and outright theft as population size increases can cause a decrease in per-person average payoffs. What typically does increase with population size is the variance in per-person payoffs. Where laws, regulations, and taxes in cooperative societies constrain the upper and lower payoffs that are likely, their lack in a default society allows for a very great range of payoffs. A clever or lucky individual in a default society thus might obtain a much higher payoff than they would as either a cooperator or defaulter in a cooperative society. This of course would be achieved at the expense of other defaulters who would then obtain less than the average payoff.

Current Contexts: Modern democratic governments were designed, at least initially, as mechanisms to create and preserve cooperative societies. They thus had two main functions: promote and oversee synergistic projects, and guarantee "fairness" in social and economic transactions. To keep the fraction of cooperators above the inevitable tipping point, they need to use whatever tactics they can to maximize trust among member citizens. This is usually achieved by having some sort of parliament, in which liberal and conservative representatives engage in a push poll negotiation to define what fairness is in that society. These definitions of fairness are then made into the laws that regulate behavior.

Historically, the two biggest threats to cooperative societies are tribalism and greed. Tribalism, whether based on religion, race, political party affiliation, kinship, education level, or actual ethnic origins, tends to generate distrust between members of the same society but different tribes. An effective government either plays down the tribal differences or plays up the advantages of diversity in achieving solutions to shared problems and enriching cultural life. Tribal conflict and mistrust often increase during periods of significant immigration. They can also arise during periods of economic or environmental stress when citizens most hurt by the crisis blame their problems on another tribe.

Greed is more ubiquitous and insidious. Greed is usually defined as "excessive desire for wealth". In all the games we have discussed above, we assumed each player would and should try to select the strategy that maximizes their own payoffs. We consider this desire as natural and not excessive. However, if a cooperative society establishes laws that turn a Prisoners' Dilemma or Tragedy of the Commons game into a dual-optimum one, a player that seeks to get around these laws and default is being greedy.

There are several ways a greedy player might try to default. The first is to accept that they live in a largely cooperative society and try to lobby, bribe, or manipulate the government to repeal some law or regulation they oppose. This is the approach taken by most conservatives who claim that these laws or regulations are "bad for business". This is surely true if the "business" entails gouging customers for goods or services, polluting or exploiting protected public lands, randomly denying health insurance claims, selling poisonous or infected products, letting banks make risky gambles with your savings, etc. Repealing the relevant laws permits such cheating and moves the tipping point required to maintain cooperation to a higher value. A more egregious approach is simply to ignore the law or regulation and hope you get away with it. Despite all our laws, crime never goes away. As long as there is a temptation to cheat, somebody will try to do so. One is most likely to get away with a crime when crime is rare, since people will not be looking for it. Once crime gets going though, it spreads and usually brings on a backlash of new laws or better policing.

The alternative to accepting life in a cooperative society is to somehow manipulate the society so it drifts past the tipping point. It will then move increasingly rapidly towards an all-default society. Why would anyone try to do this and how would they do it? Wealth disparity is usually limited in cooperative societies by progressive taxes and the laws and regulations that limit how one might get richer. Someone who managed to reach the upper brackets in a cooperative society might covet the greater variation possible in an all-default society since, being already somewhat rich, they could leverage that wealth in the all-default society to even higher levels. And if wealthy enough, they could buy media access and use this to shift public attitudes.

This may seem far-fetched, but funded by a coterie of very wealthy plutocrats, legalized by the Supreme Court decision called "Citizens United", and spread by media such as Fox News, the Republican Party in the United States began more than a decade ago denouncing its government and undermining trust in government institutions. They also incited tribal conflicts between the races, between well and poorly educated citizens, between religions, and between residents and recent immigrants. They have now ensured that many of their supporters own firearms. The election of 2016 suggests that the United States has finally passed the tipping point and ushered in an administration and Congress that immediately began repealing laws and regulations that had kept a cooperative society from degenerating into a Tragedy of the Commons. It is not clear where the current tipping point is and thus how much effort would be required to restore the former cooperative society. The payoffs have changed and that can change the tipping point. However, the fact that almost half of the US population voted for Republicans in the 2020 election suggests that the dynamics have already moved past the tipping point.

The Answer to the Question: This has been a long-winded story. But the basic answer to the question is that social cooperation is at best a dual-optimum game, and that means there will always be a temptation to cheat, and pressures from various quarters to relax all the rules and regulations that keep the society from shifting to an all-default Tragedy of the Commons. Young children will always be born with both cooperative and selfish proclivities. There will always be crime. And there will always be progressives and conservatives. We are stuck with the polarity and likely shifts between cooperative and selfish governments as time goes on. But maybe understanding the likely dynamics will encourage the design of a cooperative government that is not so easily undermined.