

On Human Games

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The well established results of game theory indicate that in cases involving two players, and interests otherwise opposed, being rational one should decide upon the strategy of outing your complicit adversary in the following game: you are a representative of your nation at a tribunal; your adversary is a representative of another nation; you stand before a mediator in the on-going dispute between your countries. You each have a secret: that you have been running tests of weapons of mass destruction, against international laws; and you each know that the other knows your secret (and knows that they know, that they know, etc.). The best scenario, for you, in your estimation and the estimation of your adversary, is that you “out” your adversary, but your adversary does not “out” you. The worst scenario is that your adversary “outs” you, but you do not “out” your adversary; meanwhile, if you both choose the same, then you are better off if you both keep quiet about the WMD's. The “payoffs” can be represented in the following diagram:

B\A	Quiet	Out
Quiet	2\2	0\3
Out	3\0	1\1

Looking at this, you may feel that you, as a representative of A, should collude with the representative of B, to keep your mouths shut. But notice that whatever you agree to do, you are better off choosing to “out” your opponent, since if your opponent remains quiet and you out your opponent, you gain 3, as opposed to 2, and if they out you, you gain 1 as opposed to 0, if you out them as well. In this model, it is a matter of mathematical fact that you are better off outing your adversary. But this model does not appreciate important subtleties in the situation. For this model to be accurate, you need to ignore the fact that in any sort of typical courtroom setting, there is an element of reaction. For instance, if you out B, then you can well expect the representative of B to react by outing A, since by doing so – in terms of the models payouts - they stand to recoup 1 point; moreover, if you are the first to do the “outing”, you face the problem of risking your reputation as one who can't keep a secret and doesn't keep a promise. Factoring in these elements, the payouts may look as follows:

B\A	Quiet	Out
Quiet	2\2	1\.5
Out	.5\1	1\1

But realizing this, you would do better in your “outing” to out you both, as a measure of being “forthright” in your outing; and the payouts may in turn fall to something as follows:

B\A	Quiet	Out
Quiet	2\2	1\1
Out	1\1	1\1

This is assuming that what is gained in being forthright is lost in breaking the pact. But whether your adversary claims to experiment or not, the truth is out, and they will be caught, leaving them with the

same payout of 1. In this better model of a more typical case, it is clearly in the representatives best interest not to out the other party. They stand to gain more if they don't and no games-men-ship is going to help them if they do.

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Now enter the island nation of Bali. While you and your adversary are world figures on the world stage, a third figure X shows up. X and his nation have been experimenting with WMD's as well, but frankly, they have no use for them; as such, when X shows up, he's got little to gain by keeping his mouth shut, and quite a bit to gain, relatively speaking (attention for their domestic issues, etc.), by outing the other two – provided they both hold their tongues.

X\ either A or B	Quiet	Out
Quiet	0\old game	0\old game
Out	3\old game	0\old game

Surely they have other battles to fight? So it can likely be expected that they would concede and give the third player something to lose, right? This strategy works in the short term for you and your adversary from B, but it only invites everyone and anyone to step into the fray and claim their prize – and in the case of WMDs, that only means proliferation. Can the world, it's games, and it's players be so dysfunctional that extortion is the rule rather than the exception? Of course, morals does not math make, but it stands to wonder if through the artifice of game theory we have not deluded an ordinary man into feeling rational in his deprivation. What is missing, first and foremost, is a deeper understanding of games and their payoffs.

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By and large, the simple grid model of games is a sufficient representation of one-off betting games, but it fails to appreciate the subtleties of real games. What I've wondered my whole life is this: *is there even such a thing as a good for you that is not also good for me?* It is a very simple question that has even found its way into sitcom television, but on the face of it, the answer is strictly, yes. In such-n-such game (business, politics, chess) I win and you lose, given such-n-such choices. But no matter how well defined the moves and payoffs appear, there is always the fear that this is the battle won, which loses you the war.

The fear of unintended consequences is a very legitimate one. The nuclear arms race is a case in point. The U. S. during WWII was in a race to get the nuclear bomb first; all of the brightest minds available were collected in Los Alamos to put it together. They won the race – though it was later determined there was no race at all – and went on to beat Japan into submission with their new artillery, helping to put an end to the war. Meanwhile, a pair of relatively insignificant physicists (*qua* physicist) passed the blueprint on to the Russians, and in the end we had fifty years of nuclear fear. If there is a principle here, it is this: some things shouldn't even be figured out.

Too often we are zealous to prove our intelligence to the world. This makes bright young minds eager to play in grand games. In these games, their missions are handed to them, and their task is before them: solve this problem, advance in reputation, and repeat until you retire with acclaim. They operated most importantly as pieces in the larger games; but day to day Oppie and Johnny solved their puzzles for their rewards, failing to acknowledge the larger games they were in. It was only when their contributions were over and fame assured, that any seeds of doubt grew into trees. (At least for Oppie;

Von Neumann was without remorse, and given his grand pet project of controlling the weather, probably assumed we could engineer our way out of any mess later – perhaps he underestimated the rarity of his own talents).

Some will see this as a call for greater secrecy, but we must be aware of the illusions of the protections of privacy. On top of outright theft, of course, is the remarkable fact of symmetry in problems solved. It happens time and again that the same point of history yields similar solutions and theories overcoming the same “obstacles”. This is frightening if only because, even should one figure something out, burn the paper, and drink a whole bottle of scotch – people everywhere may be figuring the same thing. There is no fearing a ‘leak’ in that case; the fear is that others will pursue it and use it against you, together with the feeling that you have no control over that, but to pursue it yourself. It has always been assumed that not pursuing the feared idea was a leap of faith. What I want to show here is the kind of game you may be in, such that it is rational not to pursue the feared idea.

[illegible]

Suppose for a second that you are Oppie. Oppie has an adversary, who in their personal battle would like to see him lose; in fact, Oppie's adversary has stuck his reputation on the idea that Oppie will fail if and only if he slanders him. Oppie's issue is always keeping his focus. While Oppie's adversary can only really feel pride in Oppie's defeat if he can believe that his slander caused Oppie's lack of focus:

Adversary\Oppie	Focus	don't
slander	-1\1	1\ -1
don't	0\1	0\0

Oppie knows, then, that he will 'succeed' as long as he is focused. Of course, Oppie is part of a larger game, which he is aware. That larger game is the race to get the nuclear bomb for the US. As Oppie sees it, the science is nearly all in place, and it is a matter of engineering now, so if the team performs efficiently, it will get the bomb first. Oppie's adversary in the game is Heisenberg. Heisenberg is smart, but behind. Heisenberg needs to perform remarkably well to get the bomb first. So the payoffs seem as follows:

Team Heisenberg\Team Oppie	Efficient+	Efficient-
Extraordinary+	-10\10	10\10
Extraordinary-	-10\10	0\0

Where the points represent utility for the development team.

Now, to the adversaries doing battle directly; the payouts are as follows for the actual demonstration that they have the bomb (assuming that if they both get there eventually, the U.S. will get there first and reap the reward for demonstration.)

Team Empire\Team Allies	drop	don't
drop	-100\100	100\ -100
don't	-100\100	0\0

To Oppie, it is all very clear. Game A is embedded in Game B and Game B embedded in Game C. Everyone Oppie identifies with stands to gain if he only remains focused. The payouts are fictitious, but they are close enough for our purposes. The better question in this is why does Oppie identify with this team and this game?

Nature\Humans	Nucs	No Nucs
cataclysm	-1000\ -1000	-1000\ -1000
none	-1000\ 1000	0\ 0

Universe\Life	Human Nucs	No Human Nucs
cataclysm	0\100000	0\100000
none	0\0	0\0

[illegible]

If the issue is what Oppie really should have done, things are rather complicated. In game theory, if your opponent is not rational, then all bets are off, since they may decide to abide by the payoffs or not, at their fancy. Given Hitler's undoubted instabilities, one can only say that the opponents rationality must have been suspect, and not assumed. On the other hand, we assume outright that Bali knows what they are doing, as a nation of intelligent people, who see this opportunity as a chance to make things right. And we assume that the intelligent paranoids with their dream-fears are, despite their paranoia, rational for all that. So whether the terrible idea should come from hope or fear, the question remains, why should it not be pursued?

The Ethicist maintains that, *all things considered, one should always choose never.*

This may seem clearly incorrect, given the above description, but under a few plausible assumptions, it can seem appealing. The argument rests primarily on the following three assumption:

- 1) *Seeing people exploit a glitch leads to further exploitation of this and other glitches in this and other games;*
- 2) *Laws and law enforcement, whether official or unofficial, has its costs – and those costs are external to the reason that the players play these games in the first place; and*
- 3) *Indiscriminate exploitation of a glitch eventually leads to official laws against it.*

The gist of the argument is as follows: we have seen from the above analysis that the lead candidate strategy is *only as needed* with the use of self-policing. But the problem with this strategy is that it continues the use of exploits; and when the use of these exploits are discovered, it prompts others to use this and other exploits, in this and other games, by (1); in the end, the effect is a cancellation of the benefit derived from your own exploits, by the use of exploits against you, including other games; however, since the use of exploits effectively involves the policing of its use, the overhead costs of policing, by (2), leads to a net negative for *only as needed*. It may seem that we should therefore exploit the glitch indiscriminately; but doing so eventually leads to official laws, by (3), and therefore a net negative due to costs, just like the outright declaration of law, by (2). So in the end we are left with *never*, as we want to avoid the costs of *law*.

The Anarchist can, however, see a flaw in this argument. If everyone else does choose never, then obviously, it is to your advantage to use the exploit (a *Free Rider* problem). Admitting that this promotes the spread of glitches generally and that one can cancel out this effect only with policing at a cost, the Anarchist goes the other direction, maintaining that we should just allow for all of the exploits and keep the policing out of it altogether. As a sort of law against laws, the anarchist confronts and denies the Ethicists third assumption (though one need not outlaw common laws against violence and theft in the process – and therefore is not a 'true' Anarchist); and embraces exploits as just part of any game. This position is reinforced by the idea that we just cannot tell the difference between a glitch and 'ordinary game-play'. In the above scenario, the 'glitch' is clearly a glitch, because it is an unintended consequence of the game development. But the ordinary games we play, are not of our explicit design; so to say they have 'glitches' is a misnomer. As such, we cannot rule out exploits of 'glitches' generally; we must just embrace them. Should you not like the glitches in one game, you can try your hand at another. In the end, we may have greater variance in payouts to individuals, but we save aggregate utility because we do not face the cost of policing.

Although the Anarchist's counter to the Ethicist has its point, their positive position does not withstand scrutiny. The issue is that in games of asymmetric information, players drop out; and as players drop out, play of the game shuts down. This fundamental result stems from (Akerlof, 1970), a Game-Theoretic economic analysis of so-called 'Lemon Markets'. Specifically, Akerlof addressed the market for used cars, but that the point generally applies to human behavior in games of asymmetric information is clear. The general point is that if in dealing with someone, they know more about the utility of the end states than you do, then should people catch on to this fact, these games, i. e. markets, will eventually disappear. And more generally, we can argue that should such lack of confidence in those you deal with spread to the society at large – i. e. everyone become the cynic – commerce can take a severe hit. In the context of our analysis, this means that the number of games we play may greatly diminish, and with it, the value they supply (the n in n -sum). They can be replaced in some cases, but it's a small world and when the same folks pop up on the other side of a game, no confidence in one area leads to distrust in another. Just as important as the structure of the games we play is their *frequency*. And a degraded standard of living is a stiff price to pay for 'liberty'.

