

On the Origin of Rights

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There is a popular perception that all people are endowed with certain unalienable rights, such as life, freedom and property. The US Constitution is written on John Locke's philosophy that a government defends what he claims to be basic and naturally given rights for its citizens. But the idea that certain rights are naturally given, unalienable, and independent from economic reality is wrong. I believe rights evolve from the conflicts among people through the history and materialize only for economic benefits. Rights are not unalienable or divine; instead, they can be denied if economic conditions changed.

Let me explain with a game theory model. Imagine two barbarians each found an animal carcass worth v as food. They can rob each other at a physical conflict cost of c . The choices and payoffs they face are demonstrated in this game:

		Barbarian B	
		Rob	Not rob
Barbarian A	Rob	$(v - c, v - c)$	$(2v - c, -c)$
	Not rob	$(-c, 2v - c)$	(v, v)

If $v > c$, i.e. successful robbery is profitable, the Nash Equilibrium is (rob, rob). This game shows that, in natural status without external interference, a rational person would try to invade others' properties if robbery is profitable. In other words, invasion was the default behavior back then and primitives would not admit the existence of property rights.

Now, imagine that mankind has evolved and can hunt animals for food every day. The two barbarians repeat the game indefinitely. The repeated game is a mathematical generalization of today's society, in which we produce every day and face the temptation to take from others. Consider two strategies:

Barbarian: Always rob.

Tit-for-Tat: Do not rob until being robbed.

Let us use β to denote the discounting factor ($\beta < 1$), and t to denote the first turn being robbed ($t > 1$). The payoffs of each strategy are:

$$P_{\text{barbarian}} = \sum_{i=0}^{\infty} \beta^i (v - c)$$

$$P_{\text{tit-for-tat}} = \sum_{i=0}^{t-1} \beta^i v - \beta^t c + \sum_{i=t+1}^{\infty} \beta^i (v - c)$$

We can prove that $P_{\text{tit-for-tat}} > P_{\text{barbarian}}$, if:

$$\frac{c}{v} > \frac{\beta^2(1 - \beta)}{1 - \beta}$$

Therefore, if the cost is sufficiently highⁱⁱ and the game is played repeatedly, the Nash Equilibrium could change to (not rob, not rob). Through trial and error, both players would eventually find that Tit-for-Tat strategy had a higher payoff. They would then stop robbing, thereby giving birth to the concept of property rights. This model shows that property rights would materialize if, and only if, mankind repeats production activities indefinitely and the cost of property right invasion is sufficiently high. Otherwise, property rights will not become a right because it would be economically inefficient. That is to say, should the economic reality changes, e.g. c increases, mankind would evolve and deny the concept of property rights. The various rights that we are accustomed to today were formed through long-term games to increase economic welfare. Therefore, rights are not unalienable; instead, they evolve to maximize economic benefits and are subject to change to reflect the economic reality.

(Word count: 499)

ⁱ This essay uses a mathematical method to support the argument. The model I proposed in the essay is original and mathematical derivation can be reproduced. But, due to word limits, mathematical proof is not included.

ⁱⁱ Note that it is still profitable to rob in a given turn, as $\frac{\beta^2(1-\beta)}{1-\beta} < 1$. What the model shows is that players can maximize payoffs in the long run by respecting property rights if the profit of robbery is not extremely high.