[1]History, Institutions and Economics

I have read and enjoyed several series of novels set in the British navy during the Napoleonic wars, most recently one that departs a little further from history than its predecessors by providing the British and their enemies with dragons and makes a good story out of it. Dragons aside, Novik's picture of how the navy was organized is reasonably accurate, judging by what I have read in other works with the same setting, including one written by an author who had been an officer in the navy during the Napoleonic wars (Frederic Marryat, who invented the genre) and two series by modern authors. The internal structure and the associated rules and customs of the navy seem very strange to a modern eye, yet it was a strikingly successful institution.

One of the features of those institutions particularly likely to catch an economist's eye was prize money. If a naval vessel captured a legitimate prize, an enemy warship or merchantman, and brought it back to port, the vessel and its contents were sold and the money distributed among those responsible. One large chunk went to the captain, another was distributed among his officers, a third among the crew, a fourth to the admiral under whose orders he was operating.

A second interesting feature was the role of patronage, political influence both within the navy and outside it in the career of an officer, especially a young officer. The critical step was promotion from lieutenant to captain. It depended in part on performance, in particular on the opinion of the captain under whom a lieutenant was serving. But it depended also on things that seem, to us, irrelevant.

A passage in one of Patrick O'Brien's novels that particularly struck me was a conversation between Maturin, one of his protagonists, and a friend, a young officer of aristocratic birth. The officer is asking the older man for advice. He has been having an affair with the separated wife of a high naval official and wants to know whether he should live openly with her. Maturin's response is that, moral issues aside, it might be imprudent for him to offend a powerful official and so risk his future career. His friend replies that he has considered that matter, but his family controls a significant number of seats in both houses of parliament and he thinks their influence is sufficient to balance that of the man he will be offending.

Neither party sees anything strange in either half of the argument, either the assumption that giving personal offense to someone within the bureaucracy will make it harder for a competent officer to be promoted or that having a politically influential family will make it easier. That is taken for granted as part of how the system works. It seems odd to us, and yet it was a system that produced extraordinarily successful results, a navy that, at least from the late 18th century to the early 20th, with the possible exception of the War of 1812, usually won any ship to ship or fleet to fleet battle it fought at anything close to even odds.

A third feature was the seniority system. Once a lieutenant was promoted to captain, his future rank depended only on how long he survived. His name was on the list of captains, the list was ordered by strict seniority, and the next captain to be promoted to admiral would be the one at the top of the list. When two or more captains were working together, it was the senior who commanded. That provided an unambiguous rule for allocating command, since every captain knew where he was on the list and knew, or could readily find out, where any other captain was.

[1] An import plot point in the Aubrey-Maturin novels, probably the best series in the genre.

But it was a rule that had nothing to do with the relative competence of two officers of the same nominal rank.

Promotion beyond captain was entirely a matter of seniority; what the officer got to do with his rank was not. An insufficiently competent captain who made it to admiral would end up as an admiral of the yellow, an admiral without a fleet, effectively retired on half pay. A sufficiently competent captain could be assigned particularly important duties, including the command of a group of ships with the temporary position of commodore — provided none of the other captains in the squadron was senior to him. A sufficiently incompetent captain could end up without a ship, on half pay with no chance of prize money. In peacetime, when there was no shortage of competent captains, a minor failing might do it.

It was an odd and interesting set of institutions and it worked. When I described it on my blog, I suggested that making sense of it was a project someone should look into. One of the commenters pointed me at a book by someone who had.

The Institutional Revolution by Douglas W. Allen looks at the institutions of the British navy as part of a bigger puzzle about the institutions of the premodern world. The central features, as he describes them, were patronage and purchase, the two methods by which civil offices and some military offices were allocated. He explained them as solutions to a problem due to features of the world that began to change only in the late 18th century.

The problem was the agency problem, how a principal can control his agent. If the king needs taxes collected, how does he make sure that all the money goes to him instead of much of it into the pocket of the tax collector? If he wants to win battles, whether on land or sea, how does he make sure that the resources devoted to that purpose go to it instead of being siphoned off by the chain of people between him and the battlefield? How does he make sure the victuals get delivered in time to the ship or that the captain commanding a ship uses it to help win the war, even at serious risk of getting killed in the process, the captain, exposed on the quarter deck, being the most visible and valuable target for sharpshooters on an enemy ship?

As Allen describes it, put in my words not his, there were and are three different solutions to that problem.

1. *Employment*: The agent is paid, either by time or output, as observed by the principal. If he does not do what the principal wants he is fired. This, for us, is the standard modern solution in both private and government employment.

2. *Property*: The agent is given a property right in his position, designed in such a way that the revenue he gets has some relation, ideally a close relation, to how well he achieves the principal's goals. The property right may or may not be transferable.

3. *Patronage*: The agent is someone the principal trusts to act in his interest. That trust may be lost if it becomes clear that the agent does not deserve it.

Each of the three has requirements that will be satisfied better in some contexts than in others, hence which gets used will vary both from one activity to another and over time.

The first, employment, depends on the principal's ability to monitor the agent fairly closely, to know how many hours he is working, whether he is working on what the principal wants or producing the desired outputs, whether success or failure is due to the agent or other causes. The second, property, requires the existence of some bundle of rights that gives the agent about the right incentive, makes it in his interest to do about what his principal wants him to do. The third, patronage, requires that there exists someone the patron trusts, either for reasons not directly linked to the principal/agent relationship such as kinship or because losing that trust will be very costly, hence the agent will not be tempted by the strategy of serving his own interest at the expense of the principal for as long as it takes the principal to realize he is doing so.

Allen argues that, prior to about the late 18th century, there were serious problems with using the first mechanism, especially in the context of the military and the civil service. Nature played a large role in most productive processes, making it hard to tell how much of the result was due to what the agent did, how much to natural conditions. There were few accurate ways of measuring time or coordinating activities. The lawyer who was supposed to spend two hours negotiating a contract for you might spend the time waiting for the other party's lawyer, delayed by a bad road, lame horse or broken down coach. Hence pre-modern institutions depended much more heavily on the second and third.

Institutions could, and can, make use of more than one of these mechanisms. Consider the case of the pre-modern British navy. Prize money was a property solution. The admiralty wanted captains to have an incentive to capture enemy merchant ships, defeat and capture enemy warships, even at risk to their lives. Most of the relevant decisions were made by the captain, so he got the largest part of the reward, but other people, including the admiral whose orders determined what opportunities the captain had to earn prize money, got some of it. A pattern that shows up in the novels, and presumably the real history, is an admiral who puts an unusually competent and aggressive captain in places where he is likely to encounter enemy warships not because he likes the captain — he doesn't — but because he hopes to profit from successful encounters.

Allen argues that prize money was an imperfect property solution because capturing a warship was much riskier, more likely to get the captain killed, than capturing a merchant ship, but prize money was awarded for both. One puzzle he does not consider is why the navy did not solve the problem of misaligned incentives by lowering the prize money awarded for merchant ships or raising it for warships, which should have been easy enough to do.

Allen offers the imperfect alignment of incentives, such as the temptation for a captain in a fleet action to hang back and let other ships and their captains take the risk, as a reason why the property solution had to be supplemented with elements of the other two systems. The admiralty had detailed information on what a captain did through a system of three different logs, one by the captain, one by his first lieutenant, one by the sailing master, the ship's senior warrant officer. A captain whose career showed him to be incompetent or too inclined to go after merchant ships and avoid warships might end up spending the rest of his career on shore on half-pay with no ship, hence no opportunity for prize money. A captain who declined a clear opportunity for combat with a ship of the same class, such as an English frigate commander who declined combat with a French frigate, or one who fought and surrendered, was subject to trial by court martial. One admiral ended up convicted and executed for failing to pursue the enemy fleet after an engagement.

The property system was carried further in the army, where officer positions were purchased and could be resold. The price was much higher than justified by the salary, presumably because of the opportunity for loot and, in the case of an important victory, rewards from a grateful crown. A successful officer such as Marlborough could, he did, end up very wealthy.

One argument for allowing someone to buy a position as an officer was that the better he did the job the more money he would make, hence the more successful a bidder expected to be, the higher the price he would offer. It was an imperfect system since it was based on expectation, not performance, and depended on the candidate having access to enough money. But since the system was to start with the lowest officer's rank and then move up step by step, all but the first transaction would be made after the bidder had some evidence of how well he could expect to do.

There are two arguments for permitting resale. One is that it gave an officer who discovered that he was not doing as well as he expected or had better options elsewhere an incentive to give up the position. The other is that, since what was sold was a position in a specific unit, it gave an incumbent officer an incentive to maintain the quality of his unit in order to make the position more valuable. The incentive was needed to counteract the temptation to profit through corruption at the expense of the unit.

Many offices in the bureaucracy were also private property to be bought and sold, offices whose income, often through what we would today view as corrupt bribery, depended on the job the office holder did. A version of this approach common in classical antiquity was tax farming. The Emperor sells the right to collect taxes from a province to the highest bidder; it is then up to him to get the money. One obvious problem with this is that if the tax farmer has only bought the right for one year he has no incentive to do his tax collecting in ways that maintain the ability of the province to pay taxes in future years, just as someone who rents a house for one year has no incentive to make sure it is in good condition at the year's end. In both cases there may be ways of reducing the problem — a deposit for the renter that forfeits if the house needs repair, an imperial officer with the job of collecting complaints of extortion by the tax farmer. And in both cases it may, despite problems, be the least bad way of achieving the objective. Tax farming was used in England, but it was abandoned earlier than other elements of the purchase system.

The other solution to the principle/agent problem in the pre-modern system as Allen describes it was patronage. The king appoints a high officer he trusts, with the implicit threat that if things go badly enough the officer's position, perhaps his life, are at risk. The king cannot judge the officer by how well things go day to day or even month by month, but if the navy consistently loses battles instead of winning them, especially if it looks as though the reason is that the ships are in poor condition and undercrewed because the money that was supposed to pay for those things went somewhere else, the top official in charge may lose his position, possibly his head. The person appointed to the job is chosen not mainly for his competence but because he is someone the king trusts. The high official cannot do everything himself so he again appoints subordinates, chosen to be people he trusts. As do they.

Allen argues that the system of patronage explains the existence, the nature and the eventual end of the aristocracy. The job of the medieval aristocracy had been largely military; it was, as someone described it, an army quartered on the people. That changed in the 16^{th} century. From then until the early 19^{th} century, the aristocracy, much of it new members, had as its primary and very lucrative function running the government, largely through a system of patronage. It had become a government bureaucracy quartered on the people.

Someone who wanted patronage offices had to make a variety of costly investments to put him in the pool of potential candidates, investments that would lose much of their value if he lost the trust of those above them. That included investments in social capital, an education and a network of relationships that made him part of the upper class and would be worthless if that class rejected him. It included physical capital, a country estate scaled to host large social events for fellow aristocrats, provided with extensive lands designed for show not agricultural output. It included the willingness to prove commitment to aristocratic values of honor by being willing to risk life in a duel in response to being accused of a failure of honor. It included the would-be aristocrat abandoning the commercial activities that had made him the money needed to become an aristocrat, hence having no fallback position if he failed to maintain the trust of his superiors.

All of this Allen views as a bonding system, the requirement to be considered for a patronage office, a way of making failure to live up to obligations to one's patron costly enough so it would be unlikely to happen. I find this part of his argument less convincing than the general point about patronage. Requiring a bond makes sense, but why should the bond take the form of, in effect, burning money, studying Latin and Greek instead of modern languages and skills useful in future life, constructing lavish estates inconveniently located far from population centers, devoting large areas of potentially productive land to show? The system could instead have required the would-be aristocrat to buy and provision a warship and donate it to the navy or purchase government bonds that paid below market interest rates, expecting to be repaid over time in the revenue from patronage offices that he would lose if he performed poorly.

One possible explanation is that some of the apparently wasteful investment was relationship specific capital. A large country estate was not merely a bonding device, it was a place for doing some of the things that it was the job of the aristocrat to do as the leading figure in his local community, things that required gathering, sometimes feeding and hosting, substantial numbers of people. The second is that the revenues from government offices made aristocrats rich, as Allen extensively documents, and rich people often show off their wealth, buy status among their peers, by extravagant spending. Jeff Bezos' superyacht or his flight to the edge of space were at least as extravagant as the expenditures of 18th century British aristocrats. They were not bonding capital for patronage offices.

One of the nice things about Allen's theory, on the other hand, is that it neatly explains the end of the aristocracy. As technological progress made possible a modern bureaucracy to replace the patronage system the aristocracy lost its function and abandoned both political power and those features of aristocratic culture that, by Allen's account, had functioned to bond potential recipients of patronage. The aristocrats were still rich, some of their descendants still are, with wealth accumulated through past offices, but they no longer made up a distinct class distinguished by culture and lifestyle, they no longer duel and most of their country estates, if still standing, belong not to their descendants but to the British government.

One weakness in the system of patronage is that it depended on the man at the top, the king, making the right choices, appointing high officers who will do a good job of running the kingdom for him through the men they appoint. If it fails at the top …

> The Dutch in the Medway
> *1664-72*
>
> If wars were won by feasting,
> 0r victory by song,
> Or safety found in sleeping sound,
> How England would be strong!
> But honour and dominion
> Are not maintained so.
> They're only got by sword and shot,

And this the Dutchmen know!

The moneys that should feed us
You spend on your delight,
How can you then have sailor-men
To aid you in your fight?
Our fish and cheese are rotten,
Which makes the scurvy grow -
We cannot serve you if we starve,
And this the Dutchmen know!

Our ships in every harbour
Be neither whole nor sound,
And, when we seek to mend a leak,
No oakum can be found;
Or, if it is, the caulkers,
And carpenters also,
For lack of pay have gone away,
And this the Dutchmen know!

Mere powder, guns, and bullets,
We scarce can get at all;
Their price was spent in merriment
And revel at Whitehall,
While we in tattered doublets
From ship to ship must row,
Beseeching friends for odds and ends -
And this the Dutchmen know!

No King will heed our warnings,
No Court will pay our claims -
Our King and Court for their disport
Do sell the very Thames!
For, now De Ruyter's topsails
Off naked Chatham show,
We dare not meet him with our fleet -
And this the Dutchmen know!
(Rudyard Kipling)

Can an Economist Make Things Better?[2]

"This is the best of all possible worlds" can be said by an optimist with the emphasis on "best" or a pessimist with the emphasis on "possible."

[2] This chapter was inspired by an exchange with Douglas Allen who believes, if I correctly understand him, that the answer is "no."

The defining feature of economics is rationality, the assumption that individuals tend to take the actions that best serve their objectives. That makes it tempting to conclude that nothing an economist can suggest could improve things: If a change would be an improvement it would already have been made.

This point occurred to me reading Douglas Allen's book and corresponding with the author. His implicit assumption is that institutions were and are efficient, the best that could be done given existing constraints. The reason England in the Seventeenth Century used patronage and purchase instead of a modern system of employment was not that they were not clever enough to realize the superiority of the latter, it was because, given their technological constraints — no fast communication, ships at the mercy of the wind, agriculture of the weather — our institutions would not have worked as well for them as theirs did.

It makes sense as a conjecture for an economic historian, just as the assumption that the common law is economically efficient, the Posner conjecture, makes sense for someone applying economics to understand the law.[3] The fact that institutions work, provide the results people want, is one reason to adopt or preserve them, so might explain their existence; that suggests the sort of approach Allen adopts. But it is, in both cases, only a conjecture. There is no mechanism to guarantee that societies never make mistakes, never end up with a set of institutions inferior to an alternative, no social planner looking over the set of possible alternatives and choosing the best.

Even at the individual level, optimality in the simple sense of always making the right choice is too simple an assumption. Optimal action is subject to information costs: It is irrational to obtain the information needed to make a better decision if the cost of the information is greater than the benefit. If finding out which of two brands of car you prefer costs more time and money, perhaps renting and driving both, than the information is worth, it is rational to choose at random. A *Consumer Reports* article comparing the two could lower the information cost below the benefit, so the author of such an article could make me better off. In the same way, an economist could provide me information relevant to some decision, such as what career to choose, that it would not be worth the cost of working out for myself.[4]

The point applies more strongly to group decisions; individual rationality does not imply group rationality. Even if the information needed to decide for or against a tariff costs less than the benefit of the correct decision voters may rationally fail to acquire it, since each voter pays the cost of his research but receives only a small fraction of the benefit in increased probability of a correct decision. An economist who lowers that cost by providing an easily understood explanation of the relevant economics could improve the outcome.

The fine control in a democratic system is the detailed politics of lobbying, vote trading, and the like. The coarse control is majority voting driven by free information, information acquired not in order to vote more wisely but because it is interesting, useful for private decisions, or valued for some other non-political reason. An economist can change the mix of free information out there, as can a novelist, a preacher, anyone whose activities affect what people believe.

The coarse control matters because it affects the political cost of legislation. If most voters believe that a tariff benefits the country that imposes it by protecting its workers and firms from foreign competition, the political benefits of supporting it will be larger and the costs smaller than if most

[3] For a book length exploration and critique of that approach to the law, see my *Law's Order*.

[4] For an example of such information, not data but logical analysis, see Chapter XXX [equimarginal principle in jobs].

voters see a tariff as a way in which an industry benefits itself at a cost to everyone else. An economist can shift voters from one view to the other, directly if he is writing for a mass audience, indirectly if he is educating students who will pass on some of his teaching to many others. Research or analysis that changes the views of his colleagues can have the same effect at second hand, in a desirable direction if his work is correct.

Hence, even if all individuals are rational, it is possible for an economist to make things better. And although assuming that past societies have gotten their institutions right, or that existing common law is economically efficient, is an interesting starting point, one should be willing to reject that conjecture if the evidence does not fit it.

There is, as the subhead of this section suggests, one way of justifying the claim that existing institutions are the best possible — the determinist claim that whatever is is the only thing that could be, hence that the institutions of the Seventeenth Century, or the Twenty-first, are the only, hence the best, also the worst, possible.

It is not, however, a very productive approach to understanding them.