

COOPERATION, CONFLICT, AND ALL THAT*

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... /T/he age of chivalry is gone. That of sophisters, economists, and calculators, has succeeded: and the glory of Europe is extinguished for ever.

Edmund Burke wrote that accusation against our profession back in the year 1790. Yet, 200 years later, it seems we economists and sophisters have still not managed to annihilate chivalry and generosity. In an article in the current issue of the JOURNAL OF ECONOMIC PERSPECTIVES that received embarrassingly extensive coverage in The Economist magazine, the authors reviewed the notorious evidence that people perversely persist in contributing to charities and public goods. And violating the self-interest postulate again, in Prisoners' Dilemma experiments most subjects choose COOPERATE rather than DEFECT. However, one walk of life stands out as an exception. Who is it who turn out to be almost as selfish as economic theory makes out? The answer: only the economists!

Nevertheless, I am among those who remain skeptical about the significance of self-reported contributions to charity, or about behavior in hypothetical or small-stakes Prisoners' Dilemma experiments. My guess is that economists are not more selfish, but only more acceptant of human selfishness as a fact of life.

There's an updated proverb from Ecclesiastes:

The race is not always to the swift, or the battle to the strong -- but that's the way to bet.

Similarly, unselfishness certainly exists, but don't bet on it.

As for the power of love and chivalry as organizing principles of social life, as usual Adam Smith said it best:

In civilized society [man] stands at all times in need of the co-operation and assistance of great multitudes, while his whole life is scarce sufficient to gain the friendship of a few persons.

Thus, love and friendship may sustain cooperation among a few partners, but the elaborate division of labor in modern life has to rely on the force of self-interest.

In fact, I want to argue today, our profession has on the whole taken not too harsh but rather too benign a view of the human enterprise. Recognizing the force of self-interest, the mainline Marshallian tradition has nevertheless almost entirely overlooked what I will call the 'dark side of the force' -- to wit, crime, war, and politics. That's like trying to tell the story of Luke Skywalker without mentioning Darth Vader.

"Crime", "war", "politics" -- the words do not even appear in the Index to Marshall's Principles of Economics. Or take the characteristically flat and prosaic way Marshall defines economics (on p. 1 of the Principles):

...ECONOMICS is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing.

So, we are told, economics deals only with ordinary business and with material wellbeing: in other words, with bean-counting. Boring, boring, boring. The title page of the Principles carries the famous epigraph: "Natura non facit saltum" -- Nature doesn't make leaps. What Marshall really meant was: "No excitement please, we're English here."

By way of contrast, I'll quote Vilfredo Pareto:

The efforts of men are utilized in two different ways: they are

directed to the production or transformation of economic goods, or else to the appropriation of goods produced by others.

Pareto is saying, sure, you can produce goods for the purpose of mutually beneficial exchange with other parties -- OK, that's Marshall's 'ordinary business'. But there's another way to get rich: you can grab goods that someone else has produced. Appropriating, grabbing, confiscating what you want -- and, on the flip side, defending, protecting, sequestering what you already have -- that's economic activity too.

Take television. Cops chase robbers, victims are stalked by hitmen (or should I say hitpersons?), posses cut off rustlers at the pass, plaintiffs sue defendants, exorcists cast spells against vampires. What is all this but muscular economics? Robbers, rustlers, hitpersons, litigants -- they're all trying to make a living. Even vampires are making economic choices: I suppose sucking blood must be the cheapest way of meeting their unusual nutritional needs.

The balance between these modes of economic activity -- the one leading to greater aggregate wealth, and the other to conflict over who gets the wealth -- provides the main story line of human history. Following my teacher Joseph Schumpeter, I remind you that Karl Marx, though a flop as an economist, did appreciate the importance of the dark side, the conflict option. But Marx's vision was distorted by his preconceived idea that all kinds of conflict, including wars among nations and even the battle of the sexes, could be squeezed into the ill-fitting mold of the class struggle:

The history of all ... society is the history of class struggles.

Niccolo Machiavelli saw matters more clearly:

It is not gold, but good soldiers that insure success... for it is

impossible that good soldiers should not be able to procure gold.

This is Machiavelli's version of the golden rule: he who gets to rule, will get the gold.

Human history is a record of the tension between the way of Niccolo Machiavelli and what might be called the way of Ronald Coase. According to Coase's Theorem, people will never pass up an opportunity to cooperate by means of mutually advantageous exchange. What I shall call Machiavelli's Theorem says that no-one will ever pass up an opportunity to gain a one-sided advantage by exploiting another party. Machiavelli's Theorem standing alone is only a partial truth, but so is Coase's Theorem standing alone. Our textbooks need to deal with both modes of economic activity. They should be saying that decision-makers will strike an optimal balance between the way of Coase and the way of Machiavelli -- between the way of production combined with mutually advantageous exchange, and the dark-side way of confiscation, exploitation, and conflict.

Crime, war, and politics have received some coverage from economists, it is true, but in the past only as specialized and rather esoteric topics. More recently, under the heading of 'rent-seeking', the struggle for resource control is coming to be recognized as a central issue. But rent-seeking is to conflict as milkwater is to blood, sweat, and tears. The conflict option is not limited to maneuvers for licenses and monopoly privileges: it applies also to more energetic phenomena such as strikes and lockouts, bank robbery, revolutionary warfare, and international confrontations. The dark side of economic activity is not a mere appendage, but an entire intellectual continent awaiting exploration by economists.

(Owing to the previous default of the economists, in these explorations

to come we'll find some native tribes -- historians, sociologists, psychologists, philosophers, etc. -- who, in their various intellectually primitive ways, have preceded us in daring to look at the dark side. Once we economists get involved, quite properly we'll be brushing aside all these un-theoretical aborigines.)

I now offer two propositions about cooperation and conflict. First: cooperation, with a few obvious exceptions, occurs only in the shadow of conflict. Only if we understand threats and struggles can we properly appreciate how, why, and when mutually advantageous exchange -- between husband and wife, between capital and labor, between nation and nation -- can take place. In litigation, for example, it is fear of trial, with its attendant costs and uncertainties, that impels plaintiff and defendant toward negotiated settlement. And, furthermore, the perceived chances for victory at trial shape the specific terms of settlement.

As regards international conflict, Clausewitz drew the analogy:

In all relations among nations and states, the decision by arms is what cash settlement is in trade.

Trade can be conducted without cash settlement, but ability to make cash settlement ultimately constrains what trade can take place. Similarly, Clausewitz is saying, a state remains influential in peacetime only owing to the damage it could inflict in the event of war.

But, you may say, what of the social arrangements, laws, and judicial systems that humans have devised to temper the power struggle? That brings me to my second proposition: cooperation among some people is generally a conspiracy for aggression against others (or, at least, is a response to such aggression).

If a nation's institutions favor Coasian cooperation, Marshall's 'ordinary' business activity, a nation will grow wealthy. But, Adam Smith told us:

An industrious, and upon that account a wealthy nation, is of all nations the most likely to be attacked...

If the gains from group aggression are big enough, invaders can get their act together. Sigmund Freud said:

It is always possible to bind together a considerable number of people... so long as there are other people left over to receive the manifestations of their aggressiveness.

The bottom line is that nations with wealth-enhancing laws and institutions will not be able to enjoy the fruits thereof unless, when challenged, they can put up a tough fight. And the same holds for political parties, clubs, families, and business firms.

I've found it useful to conceptualize the dark side of economic activity under four headings: (1) the sources of conflict; (2) the technology of conflict; (3) the modelling of conflict interactions, and (4) the consequences of conflict.

I. SOURCES OF CONFLICT

Underlying the tradeoff between the way of Ronald Coase and the way of Niccolo Machiavelli are the contending parties' opportunities, preferences, and perceptions. Taking opportunities first, economists can safely predict that decision-makers will lean in the direction of conflict or lean in the direction of cooperative production and exchange, whichever is more profitable on the margin. Productive complementarity favors the exchange

option: nations that trade more fight less. Similarly, since men and women complement one another, we see that men fight other men, more frequently and more intensely, than they fight women. At the opposite extreme, recall the Western movie where the villain says to the marshal: "I got nothin' against you, Wyatt Earp, but this town ain't big enough for the two of us." No complementarity there: it's a constant-sum situation, so moviegoers can count on seeing a shootout. Still, generally speaking, adversaries always share some mutual interest, if only in reducing the intensity of the struggle.

In some spheres, the law regulates conflict. In strikes and lockouts, ideally at least, physical violence is ruled out. In the world of commerce, merchants are supposed to compete by offering lower prices, not by arson and sabotage. And in judicial proceedings, trial by lawyers has supplanted trial by combat. In olden times, a claimant's rights would be upheld by a champion at sword and lance. Now litigants are represented by attorneys -- that is, by champions at lies, sophistry, and obfuscation. (Is this an improvement? Well, I'll leave the question open.)

Even more important than limiting the scope and methods of conflict, the law generally stands ready to enforce agreed settlements. But note the word 'enforce': regulation of conflict can be achieved only if the regulator has the power to inflict even heavier damage.

I wish I had time to address another domain of sabotage and combat: the promotion ladder or tenure track, otherwise known as the rat-race. But I need to move ahead to my next major topic: the technology of conflict.

II. THE TECHNOLOGY OF CONFLICT

In studying productive technology, economists do not concern themselves with the design of pipes, girders, beams, engines, or transistors -- all these matters lie in the province of engineers and technicians. And the proper employment of technology is the task of the businessman. Our job is to analyze might be called the macro-technology of production: are there increasing or decreasing returns to scale, are labor and capital complements or substitutes, and so forth.

When it comes to the technology of conflict, the situation is very similar. Guns, bombs, missiles, etc. are designed by technical experts, while their proper employment is the responsibility of military leaders. And even in non-military conflicts, there are players with corresponding roles. Politicians hire speech-writers and media consultants to design optimal strategies of campaign lies and propaganda; litigants hire attorneys to concoct clever ways of hoodwinking judges and juries. These practitioners are, in effect, the engineers and entrepreneurs of the conflict industry. But, owing to the default of the economists, a huge intellectual gap has remained: very little has ever been said about the macro-technology of conflict. Yet increasing versus decreasing returns, economies of scale and scope, complementarity of labor and capital are as applicable in the conflict domain as in the productive domain.

One illustration. Starting in the 15th century, cannon replaced catapults and trebuchets as siege weapons; as personal armament, the musket supplanted bow and arrow. While one's first impression might be that these newer weapons were obviously superior, technically speaking, that would be over-simple. The correct answer has to do with comparative costs,

increasing returns, and complementarity. Cannon allowed industrial skills in the factory and workshop to substitute for scarcer battlefield skills. And economies of scale in cannon manufacture gave kings a cost advantage over petty lords and barons. As for muskets, they were so inaccurate that, until the rifle came along, a man with a firearm was no match for a trained archer. In the musket's favor were, once again, economies of scale in industrial production and, even more important, the opportunity to combine capital with less-skilled labor. It took years of practice and indeed a whole way of life to make an effective Bowman. But a week of drill sufficed for training a musketeer to shoot off his weapon in the general direction of the foe.

In analyzing the macro-technology of conflict, one would like to have plausible functional forms analogous to the Cobb-Douglas or CES formulas of production theory. These functions would describe how 'inputs' of fighting efforts on the two sides generate 'outputs' in the form of victory or defeat. Two canonical families of such Contest Success Functions have been described. In the one family outcomes depend upon the ratio of the fighting efforts, in the other family upon the difference. The ratio form is applicable when clashes take place under theoretically ideal conditions such as a uniform battlefield, full information, and absence of fatigue. The difference form applies in the more realistic case where what Clausewitz called friction plays a role: where there are sanctuaries and refuges, information is imperfect, and even the victor is subject to disorganization and exhaustion. And while I have been using military metaphors and examples, analogous statements can be made about the 'technology' for translating fighting efforts into victory even in non-military struggles

like lawsuits or political campaigns.

Somewhat analogous to diminishing returns in production would be decreasing decisiveness in conflict activity. A superior force is by definition always at an advantage, but how much of an advantage? Sometimes a small edge can have drastic consequences. In the Punic Wars the opponents were very nearly matched, and conceivably the outcome might have gone either way. But the balance having tilted toward Rome, the outcome was decisive in the most total sense: Carthage was razed to the ground. The Franco-Prussian War of 1870, in contrast, was far less decisive. Despite clear Prussian superiority on the battlefield, France only had to surrender two provinces and pay an indemnity. Less than 50 years later, a turn of the tide reversed this outcome.

When decisiveness is low the parties are more likely to choose peace -- or, at any rate, to reduce the intensity of struggle. In domestic politics, constitutional protections for minorities reduce the decisiveness of majority supremacy. If election defeat doesn't entail deprivation of life and property, people need not be excessively concerned about or invest as much effort in political campaigns.

Economic conflict theory helps explain a major paradox of modern politics. We are so used to seeing wealth redistributed from the rich to the poor that it no longer seems surprising. Yet the half of the population above the median wealth surely has more political strength than the half below the median. How can the lower half gain at the expense of the upper half, i.e., the weak defeat the strong in the redistributive struggle? The main answer -- note that I set aside sheer generosity on the part of the rich -- is that the poor have a comparative advantage in conflict as opposed

to production. Think of this as the four P's: populist politics are profitable for the poor. And more generally, any group finding itself poorer than it was before will typically become politically more bellicose, while newly enriched groups become more pacific and accommodating. When the textile industry is doing well, it concentrates on doing business. When times are hard, it sends delegations to Washington instead.

On the other hand, if the decisiveness parameter is high enough, the advantage tilts heavily to the stronger side. This corresponds to a 'natural monopoly' in the conflict industry, very likely leading to a struggle to the death -- as took place between Rome and Carthage, or Czarists versus Bolsheviks in revolutionary Russia.

Many other aspects of conflict technology cry out for investigation, for example when does the offense have the advantage and when the defense, and what are the roles of geographical distance and terrain? But I must move on. And in fact I will have to omit the topic of MODELLING CONFLICT -- which covers such issues as the applicability of the Cournot versus the Stackelberg solution concept -- passing directly to my final section on CONSEQUENCES OF CONFLICT.

IV. THE CONSEQUENCES OF CONFLICT

Human geography and history have been shaped by the two modes of economic activity -- the cooperative and the conflictual. Sizes and shapes of nations are determined by ranges of increasing and decreasing returns to geographical extension in the two types of enterprise. The introduction of cannon favored larger over smaller political units, hence led to a sharp reduction in the number of independent states from the 15th century on. Or,

to mention one other example, the combination of cannon and all-weather sailing vessels made possible the imperial expansion of the European powers to America, Asia, and Africa.

Looking within, the state is traditionally defined as having an effective monopoly of force within its borders. But this monopoly is always threatened by coups, rebellions, and disorders. Modern developments in transportation and communication have tended to favor centralization. Militarily, were it not for the railroad the South would surely have won its independence in the American Civil War. But then, perhaps, the productive advantages of a larger trade area would have led to ultimate reunification later on.

I will close with some remarks on the implications of the conflict option for human nature itself. Hatred, anger, and xenophobia as elements of the human psyche are evident consequences of natural selection for ability to fight other humans. Physically, our species exhibits sexual dimorphism: on average, males are bigger and stronger than females. This is not because big men are more productive -- everyone knows that women have always done most of the work. No, big and strong males have evolved in order to fight other big and strong males. And, returning to the psychological side, what is called 'male bonding' is, at least plausibly, a response to increasing returns to group size in combat. And finally, the hypertrophy of the human brain has, though not without controversy, been attributed to the advantages of cleverness and guile in combat, politics, and social intrigue.

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The Greek philosopher Heraclitus is supposed to have said: "War is the father of all things." A more correct statement would be: "War is the father of all things, but peace is the mother." Or, quoting Edmund Burke again, but this time in a way that economists will find more appealing:

...every human benefit and enjoyment, every virtue, and every prudent act, is founded on compromise and barter.

So, recognizing the economic importance of conflict, we must not go overboard in that direction either. All aspects of human life are responses not to conflict alone, but to the interaction of the two great life-strategy options: on the one hand production and exchange, the way of Ronald Coase, on the other hand appropriation and defense against appropriation, the way of Niccolo Machiavelli. Economics has done a good job in dealing with the way of Ronald Coase; what we need now is an equally subtle and structured analysis of the dark side -- the way of Niccolo Machiavelli.