

## COMMENTS ON DANIEL BROMLEY'S PAPER

*Pierre Failler*

CEMARE/University of Portsmouth  
pierre.failler@port.ac.uk

Bromley's paper is a courageous one as it advances a different opinion to that held by the vast majority of economists and managers working on fisheries nowadays. He argues against the idea that property rights implementation in fisheries is the solution of over-fishing. And he is right! By giving examples of State interventions designed to stop misuse of lands and forests in the United States he shows that it is not necessarily the case that because you own a piece of land or forest that you will make good use of it. We can perhaps go a step further by saying that even if you use properly the resources you own, your actions can impact badly on other users. Many current examples can offer testimony to this – fields of corn or wheat are contaminated by windborne pollen blown from fields growing genetically modified organisms or highly productive Caribbean sugarcane that kills the local coral reefs by pouring pesticides into the rivers. In the case of fisheries, scientists (both biologists and economists) and managers have 'shrunk' the sea by focusing upon the relationship of the fishermen to a single species – such as cod in the first half of the century – with the objective of maximizing catches of this species (without any concern to the impact upon other species). Anita Conti, in her book written in 1953, based on her numerous trips on board French vessels fishing on the Newfoundland banks, noticed that cod abundance was linked to sea temperatures and the presence of other species (as either prey or predators). She also highlighted the immense wastage that occurs within the cod fishery as the main part of the catch was thrown back into the sea because it was either under-size cod or non-target species (Conti, 1953). Her prescient comments were largely ignored resulting in the crises in cod fishing that are so well known. In the classic Canadian case, the government closed the cod fishery only in 1992 despite the fact that for many years previously, fishermen had failed to reach the TAC.

From Bromley's perspective (on fishery management) this can mean one of four things. First, that the TAC is not a cast-iron guarantee that there will be no over-fishing and stock collapse – as has been demonstrated in many cases in Europe and North America over the years. Second, and linked to the first point, there is great imprecision in the models deployed to define the state of fish stocks and the catch volume that can be taken out of the sea. The natural variability of fish stocks over time and space is always critical from one fishing season to the next, with generally bigger variations in pelagic than demersal abundance. It is therefore very difficult, if not impossible, to predict what will be available in the coming fishing season. The third point is that in reality fisheries are multi-species – even in so-called mono-specific fisheries. Fishermen net or trap not only targeted species, but also ensnare other species. While many licence and TAC systems allow fishermen to harvest a certain amount of such by-catch (which may actually

have a higher market price than targeted species), the widely observed tendency is for fishermen to under declare by-catches of high commercial value (and worse – to illegally target these species). To extend the consideration of this third point, one has to say that fishery economists ignore completely the natural variability of fish stocks, considering that fishery management is simply the management of fishermen – and not fish (which is the main cause of discord between them and biologists). Therefore, fishery management is reduced to the management of the production of natural resources in a predictable world with rational behaviour by fishermen. In that world, any fishery problem is due to an institutional failure that causes fishermen to not pursue the profit maximisation objective. To remedy this, fishery economists have promoted – for decades now – access control measures. Usually these start with licences, move to TACS and then follow on with quotas (collectively, then individually allocated, and now the latest version – individually transferable (ITQ)). ITQs, as noted by Bromley, are today the most advanced system in terms of their sophistication. ITQs determine not only the right to fish but, as Coase (1960) pointed out, a right to ‘do’ – which means (first) a right to undertake actions that impact upon the activities of others and (second) regulation of such economic activities that negatively affect other activities. In fishery terminology (and to extend Bromley’s criticisms), ITQ is the ‘perfect’ system. It excludes fishermen and it prevents new fishers from entering the fishery ( unless they have the means to purchase part of the quota). It does nothing to combat the significant level of discards of species which may have commercial value (and be the target of other fishermen). From the terrestrial (or the management perspective), each step corresponds to an improvement of the system as things appear to be under greater control. The illusion of control is the fourth point to be highlighted. It is much more than the mis-choice of a system (ITQ versus ‘TAC auction’). Thanks to the centralisation of fishery management systems in most countries across the world, fishery managers have tried to apply Bentham’s panopticon<sup>1</sup> principle in order to control fisheries as they wish ... from their comfortable offices (Failler, 1998). Non-compliance by fishers skewers such illusions of control. In summary, the introduction (and reinforcement) of management measures that are not in symbiosis with the natural cycle and variability of fish resources lead to an increase of economic costs and ecological waste.

The introduction of a TAC auction system (as opposed to ITQs) that Bromley promotes is innovative and seems to be more appropriate in mature fisheries where the number of fishermen or companies is relatively settled, landing sites or ports are well controlled, scientific advice is readily available and interactions among marine species are low (as with the king crab or salmon fisheries in Alaska). In other situations, characterised by low state control capacities, high species interactions, poor scientific advice and multi-species catches the application of TAC auction systems seems to be less conceivable. In the context of a fishery auction, what will be fundamental is the revealing of the fishermen’s willingness to pay. If, as is usual, potential buyers (fishermen) have limited knowledge about the value of the asset or rights up for sale, it is invariably because the management institution has a limited knowledge of the value of catches. Vickrey (1961 and 1962) analyzed the properties of different kinds of auctions and attached particular importance to

the second-price auction or, as it is now often called, the Vickrey auction. In such an auction, TAC share can be auctioned off by sealed bidding, where the highest bidder gets to buy the item, but only pays the next highest price offered. This is an example of a mechanism which elicits an individual's true willingness to pay<sup>2</sup>. The main difficulties with the application of the classic auction or the Vickrey auction system in a fishery however is that one assumes that the future will be more or less similar to what the past was and the present is. Climate change or variability, to name only one factor that can affect fish stocks and more broadly marine ecosystems, is changing the face of fisheries around the world. So, how can we bid for something that may not exist anymore in two years time? From the property rights perspective, Bromley argues that the main difference between ITQS and the TAC auction is that the first system transfers ownership of resources from the State to fishermen while the second one gives the right to catch fish to fishermen (whilst the property is retained by the State). Is it such an improvement (and for whom)? As we mentioned earlier, property rights not only engender the right to catch fish but also the right to undertake activities at sea that do not interfere with other activities. In both systems, fishermen buy the right to go fishing for a certain amount of fish and therefore to affect (negatively) other (fishing) activities. More fundamentally, the TAC auction is not a flexible system that can allocate fishery resources – which is indeed what all fisheries need. Somehow, in this sense, Bromley follows classic fishery economists in seeking to allocate to particular fishermen a particular amount of fish at a given price. However, other models of management based on economic performance and social cohesion exist and work, such as the *Cofradias* in Spain, or their counterpart, the *Prudhommes* in South of France. Uncertainty, risk, ecosystem functioning (where fish has a function value), species and fleet interactions are fundamental aspects of a fishery and need to be addressed when devising strategies for fishery management. So, who owns the coasts? Of course citizens, as Bromley has pointed out – but maybe more simply the person who looks at the sea in and for itself. It is a priceless property with the horizon as its only limit!

## Notes

- 1 The Panopticon is a type of prison building designed by English philosopher Jeremy Bentham in 1785. The concept of the design is to allow an observer to observe (-opticon) all (pan-) prisoners without the prisoners being able to tell whether they are being watched, thereby conveying what one architect has called the 'sentiment of an invisible omniscience.' Bentham himself described the Panopticon as 'a new mode of obtaining power of mind over mind, in a quantity hitherto without example.'
- 2 By bidding above his own willingness to pay, an individual runs the risk that someone else will bid likewise, and he is forced to buy the object at a loss. And vice-versa, if an individual bids below his own willingness to pay, he runs the risk of someone else buying the item at a lower price than the amount he himself is willing to pay. Therefore, in this kind of auction, it is in the individual's best interest to state a truthful bid (Dreze, 1996).

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