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# Kluwer Mediation Blog

## Mediation Games

John Sturrock (Core Solutions Group) · Friday, May 29th, 2015

John Nash died this week, in a tragic car accident. John Nash was the Nobel-prize winning mathematician whose theory of non-cooperative games published in 1950 has been described as one of the top ten ideas in economics in the 20th century.

His theory introduced and explored the concept of what is known as Nash equilibrium. According to the New York Times obituary, Nash equilibrium provides a conceptually simple but powerful mathematical tool for analysing a wide range of competitive situations, from corporate rivalries to legislative decision-making. It builds on the notion that, in most real world interactions, there is potential for more than a zero-sum game. Players' interests are not usually directly opposed and there are opportunities for mutual gain. Nash's solution paved a way "of analysing how each player could maximise his benefits, assuming that the other players would also act to maximise their self-interest." This is game theory, a description of interactions where the actions of one 'agent' influence the outcome for the other, and vice versa.

The Guardian obituary said this of the utility of Nash's work, in emphasising the importance of communication, to deal with: "a position in a situation of competition or conflict in which both sides have selected a strategy, but where neither side can then independently change their strategy without ending up in a less desirable position. Such positions are common in everyday life, and in the interactions of business people, politicians and nations. [Nash] earned his early reputation, and his 1994 Nobel prize in economics, by proving mathematically that there is at least one Nash equilibrium lying in wait to trap us in every situation of competition or conflict where the parties are unwilling or unable to communicate."

Nash's original exposition contained some dense mathematical modeling (at least for those of us for whom mathematics remains a dark art). However, the concept of a Nash equilibrium itself can be fairly easily explained. These ideas are familiar to many mediators and negotiators of course. But I have often wondered if there is more we might understand from the world of game theory.

The timeless Prisoners' Dilemma, which a number of us may first have experienced in the Harvard negotiation training as The Oil Pricing Exercise, and which finds iterations in mediation and negotiation training throughout the world, is a good example of game theory in action. The Prisoners' Dilemma was researched and written up in Robert Axelrod's *Evolution of Cooperation* (1984) to which I recall being first exposed by Gerald Williams in the late 1990s. (Just look at the [Wikipedia entry to begin a fascinating journey: http://en.wikipedia.org/wiki/The\\_Evolution\\_of\\_Cooperation](http://en.wikipedia.org/wiki/The_Evolution_of_Cooperation)). As Axelrod observed: "We are used

to thinking about competitions in which there is only one winner....But the world is rarely like that...The key to doing well lies not in overcoming others, but in eliciting their co-operation.”

Professor of Biology and Mathematics and Director of the Program for Evolutionary Dynamics at Harvard University, Martin Nowak in his excellent book, *Super Cooperators: Evolution, Altruism and Human Behaviour*, has described The Prisoner’s Dilemma in this way:

“...although it is a simple mathematical idea, it turns out to be an enchanted trap that has ensnared some of the brightest minds for decades... gave me the first critical insights into why our traditional understanding of evolution is incomplete....we need a third evolutionary force, that of cooperation....the Dilemma has played a key role in cementing the foundations for an understanding of human cooperation.”

Recently, I hosted a seminar with the grand title, *Collaborating to Build a Better Scotland*. We were privileged to have leading government officials and representatives of business, civic society and communities. The last paper of the day was titled “Game Theory and Mediation”. The speaker cited this justification for mediation in a simple “buyer and seller” scenario: “Solicit offer mediation produces the highest expected ex-ante surplus of any interim efficient game.” (Myerson and Satterthwaite, 1983). In plain English this means: if the parties knew in a simple negotiation over a single item that they were going to be entering some negotiation process the next day, but did not know each other’s BATNAs in advance, they could choose no better negotiation process than mediation. From an economic point of view, the speaker concluded that there may be an overall societal interest in mandating mediation. If so, mediation can be shown to add economic value, not just anecdotally or in surveys of costs saved.

That speaker was not a mediator. He is in fact my son, David, who is studying game theory at Oxford University (and to whom I am grateful for comments and corrections to this blog!). We think there may be something in this which most of us mediators have not yet fully grasped. The something may be strategic in that it could point policy-makers to much greater use of mediation. It may also be tactical in that each of us, when struggling with yet another deadlocked commercial negotiation, may have access to many more tools than we presently use. This is a work in progress.....

John Nash’s story was captured on film in *A Beautiful Mind*. The actor who portrayed Nash, Russell Crowe, described Nash and his wife Alicia, who was also killed, as having “beautiful minds, beautiful hearts.” What a great example for us all to follow as we explore further game theory’s links to mediation.

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