

Co-operation and Competition in Regional Economic Development Associated with Radioactive Waste Management

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Competitive and co-operative behaviour

Competition and co-operation appear in many different social venues. Here, I will touch on a variety of examples of co-operative behaviour in: economics, politics, research, and everyday life activities such as sports. These four diverse examples are meant only to illustrate the variety of forms that co-operation takes, it is not meant to be an exhaustive list.

The economic market is one of the most obvious places associated with competitive behaviour. Firms compete with each other under a clear set of legal rules and customs for new markets and for market share. For example, Motorola and Nokia are two leading companies in the cellular telephone market. They compete aggressively for customers.

But the economic market is also a common place to find co-operation.¹ Although firms are locked in vibrant competition to produce innovations and to gain market share, they also depend upon a significant degree of co-operation. Consider the case of cell phone development. Early on in the product development cycle, Motorola and Nokia came together to co-operate on defining standards for the industry. Standards were necessary to make efficient use of the electromagnetic spectrum and to enable efficient capitalisation of communication towers. By establishing frequencies of operation and signal modulation standards, the companies assured critical gains in economies of scale. Because Motorola and Nokia phones each operate on similar signals, communication towers and equipment can be shared, which means that each company does not need to establish its own network of towers. Agreeing on frequencies leaves more segments of the electromagnetic spectrum available for other social purposes, preventing wasting this limited resource. Co-operative behaviour, in this example, produces efficiency gains for the corporations.²

In pluralist democracies, political parties compete for public support and political influence. Elections are the most direct forms of competition in politics. There are clear winners and losers in elections. However, because of the nature of politics, it is often difficult for one political party to gain enough power through elections to enable it to rule alone. Indeed, political systems are set up so that even minority parties can have influence over certain matters. For instance, some important decisions such as amending a constitution or impeaching an official, takes a super majority of parliamentarians. In these instances, or when one party has not won a decisive majority in the election, compromise occurs. *Compromise* refers to way in which a dispute is settled. A compromise represents a middle point, of sorts, between two competing demands. Thus, compromise is a result of indecisive competition. In the United Nations earlier this year, there was a dispute about which Latin American country should serve on the Security Council. Guatemala is strongly endorsed by the United States,

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1. Thornberry, Jon B. (2002, "Competition and Co-operation: A Comparative Analysis of SEMATECH and the VLSI Research Project. Enterprise & Society", *The International Journal of Business History*, Vol. 3, No. 4, pp. 657-686.
 2. Bengtsson, Maria. (2004), "Introduction: New perspectives on competition and co-operation", *Scandinavian Journal of Management*, Vol. 20, pp. 1-8.

while Venezuela has been proposed as an alternative. In 48 rounds of voting, neither country was able to gather enough votes to acquire the seat. To remedy this logjam, Panama was proposed as a compromise. It won soundly on the next round of voting. None of the competing parties had strong objections to Panama; however it also is neither side's first choice. This exemplifies the adage that all politics is the art of compromise.

Although politics is deeply marked by competition and the art of compromise, co-operation also comes to bear at times.³ Co-operation becomes necessary when the full might of the country is required, as in times extreme circumstances. During these times political differences are forgotten and politicians describe themselves according to their national identity, not their political party identity. Political co-operation is grounded in a shared set of values. In times of war it is to preserve the integrity of the nation. In times of natural devastation, it is to preserve the life of the citizenry. Both these goals are so primary that they are widely seen to be above political competition.

Scientific research is an arena in which both competition and co-operation prosper. Science generates new knowledge based on the principle of multiple witnessing. This refers to the simple fact that observations, which are made into knowledge claims, need to be validated by more than one person before they are accepted as tentative truth. Experiments are rigorous protocols for making specific types of observations. In the model of positivist science, which is by far the most dominant model for science today, observers must be independent of each other and independent of the object of their observations. Thus each scientist functions independently. Competition comes into play in the attempt to invalidate hypotheses or to posit rival hypotheses. To put it simply, one scientist advances a hypothesis (relating two variables to each other) and other scientists attempt to either repeat the experiment and find the different results or to posit alternative explanations for the results. These can both be seen as competitive actions.⁴

As science becomes more technically complex and as science is promoted to solve more practical problems, it becomes necessary to assemble interdisciplinary teams of scientists to conduct research. These teams function by co-operating with each other on shared goals of a research project. But inasmuch as scientists from different disciplines have limited understandings of each other's expertise, this type of co-operation might better be described as coordination. *Collaboration* is the act of working in a coordinated manner on a collective project. This is becoming increasingly common as science becomes more advanced.

Team and individual sports are fascinating venues for the study of competition and co-operation. One definition of a team is "a group of people organised to function co-operatively as a group." It is interesting to note that, to maximise its competitiveness, a team must work co-operatively. Soccer is a perfect example. A soccer team peopled with athletes who do not pass, but attempt to take the ball downfield alone, will lose every game. Even small amounts of competition within the team can run the team's competitiveness. Competitiveness is enhanced when the team acts *as one*. And yet the purpose of this coordination is solely to compete. As such, one may think of the co-operation as a form of competition.

Individual sports appear to be purely competitive; however, even here co-operation sometimes appears. In her description of sled dog racing, Sharon Kemp pointed out how mushers sometimes switch from competitive to co-operative action.⁵ It happens among mushers who have an ethic to the

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3. Larsen, Jakob Bjerg, Karsten Vrangbaek, Janine M. Traulsen, (2006), "Advocacy Coalitions and Pharmacy Policy in Denmark-Solid Cores with Fuzzy Edges", *Social Science and Medicine*, Vol. 63, No. 1, pp. 212-224.
 4. Georghiou, Luke (1998), "Global Co-operation in Research", *Research Policy*, Vol. 27, No. 6, pp. 611-626.
 5. Kemp, Sharon F. (1999), "Sled Dog Racing: The Celebration of Co-operation in a Competitive Sport", *Ethnology*, Vol. 38, no. 1, pp. 81-95.

sport that places the health and safety of the mushers and the dogs ahead of the competitiveness. On a race that lasts many days and includes travelling at night in arctic wildernesses far from civilisation, mushers sometimes have to rely upon each other for their survival. Under these circumstances the competitors temporarily “set aside” the race and work together toward the shared goal of keeping each other or their dogs alive. Kemp laments the gradual dissolution of these values as more and more people enter the race with the sole goal of winning.

Conceptual insights to competition and co-operation

Must competition exemplify aggression, hostility, or enmity? Is co-operation necessarily about individuals surrendering their autonomy and merging into some unitary whole? Clearly both of these represent extremes. Neither is necessarily unrealistic or uncommon, but they are also not the only definitions of what competition or co-operation can be.

There does seem to be a place for what might be called “ruthless competition” in our endeavour to understand collective action. Even if we exclude cases of physical violence from consideration, there are clearly cases of hostile competition. The so-called “robber-barons” of the late 19th and early 20th Centuries in the United States – John Rockefeller, Andrew Carnegie, JP Morgan – were known for the fervour with which they engaged in competition. Darwinian ideas of “survival of the fittest” and competition lent further credibility to the notion that competition should be ruthless.

At the same time, clearly not all competition takes on these qualities. The goal of sport matches, for instance, is not to annihilate the other team, but to compete for fun in a manner that makes future matches desirable.⁶ Each team wants to win, but more than that, each team wants to play again. Thus the goal of preserving the opportunity for competitive play supersedes the goal of winning. This is why sports develop a highly structured set of rules with referees to identify breaches of rules and to dish out penalties. We might label the competition we find in sport “friendly competition”.

Friendly competition is not absent from the economic or political realms. Indeed, the notion that business seeks to destroy competition and create monopoly is seen as primitive today. Instead, the usefulness of competition to drive innovation and to promote efficiency is recognised. Progressive entrepreneurs value their competitors for keeping them sharp, at least as long as they don’t put them out of business.⁷ Governments pay a great deal of time promoting competition. For example, the European Competition Network is responsible for promoting competition inside the European Union. Its purpose is to counter economic behaviour that restricts competition across borders, which is described in Articles 81 and 82 of the European Treaty. While it promotes competition, the European Competitive Network itself is a co-operative institution, with staff of competition agencies from each member state co-operating to establish and enforce rules to encourage and defend competition.⁸

Friendly competition and ruthless competition mark out ends of a spectrum of competitive behaviour. Table 1 summarises this typology. The two forms of competition have very different ends. Ruthless competition is completely ends oriented, while friendly competition is more focused on the competitive process. Each mode leads one to perceive others and one’s self differently as well. In ruthless competition others are enemies or opponents to be beaten. One sees oneself as a winner and losing is unthinkable. But with friendly competition the stakes of winning are not so high. One sees

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6. Albert, Edward (1991), “Riding a Line: Competition and Co-operation in the Sport of Bicycle Racing”, *Sociology of Sport Journal*, Vol. 8, No. 4, pp. 341-362.
 7. Swedish competition authority (2006), “Anti-competitive co-operation. Prohibition against anti-competitive co-operation”, www.kkv.se/eng/competition/co_operation.shtm accessed 9 October 2006.
 8. European Competition Network from: http://ec.europa.eu/comm/competition/antitrust/ecn/ecn_home.html, accessed 9 October 2006

oneself as a fit competitor, someone who likes a tough game, and who is capable of losing. It is possible that we find ourselves acting each of these ways at certain times in our lives, but most of our competitive behaviour falls somewhere between these extremes.

Table 1. Summary of two ideal extreme forms of competition

	Ruthless Competition	Friendly Competition
Aim	Dominate market and acquire monopoly	Engage in vibrant competition. Sustain competitive conditions.
View of others	Enemy, Opponents	Colleagues
Self Identity	One who wins, who is victorious, who dominates others. Losing is unthinkable.	One who is playful, fit, who enjoys a good game, and yet can also withstand losing.
Metaphor	War Play for keeps	Game Play for the sake of playing
Example	Andrew Carnegie JP Morgan John Rockefeller	Professional Sports Leagues Competitiveness Initiatives

The temptation to envisage co-operation as wholesome, friendly and constructive is strong, but is this always the case? Co-operation is seen by many economists as having a distorting effect upon the economy.⁹ Too much co-operation is inconsistent with the market functioning when it has the effect of restricting economic actors from acting independently of one another. Monopolies or cartels are undesirable outcomes of economic co-operation. For this reason, governments often enact legislation, rules, or guidelines to identify, discourage, or prevent inappropriate co-operation. Such definitions establish threshold levels, not attempting to ban all co-operation, but only to eliminate co-operation that has overly strong impacts on the market functionality. Still, economists also recognise the importance of co-operation as a positive economic action. Firms co-operate to develop highly complex products that neither firm alone could develop. They also co-operate to pool resources in order to reduce the costs associated with breaking into new markets. A good example of this took place in the 1990s when three Finnish home-building companies co-operated to develop marketing brochures for the German housing market that made the three companies appear as one larger company.¹⁰ Such co-operation is temporary with competition remaining the default condition.

This type of co-operation might be best described as tacit co-operation (see Table 2). The conditions necessary for co-operation are tacitly present, that is, they exist without anyone intentionally manipulating or creating them. In this kind of co-operation each individual pursues their egoistic aims, it is just that these ends correspond in a manner that makes co-operative behaviour a logical way of realizing them. No one makes a sacrifice or compromise for the greater good. The Finnish companies in the example above each wanted access to the German market. They still designed and built their own products. They simply wanted to create an efficient way of accessing the German market. By developing a co-operative effort in which the companies presented their products equally in marketing materials and shared the costs of attending home shows in Germany, they lessened the costs of marketing and also benefited by making their companies look larger than they were. The relationship among the firms was co-operative, but on a very light level. There was no change in identity, no commitment to the other beyond the specific marketing functions. In fact, the

9. Green, Donald P. and Ian Shapiro (1994), "The nature of rational choice theory," in: *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science*. Yale University Press, New Haven.

10. Tidström, Annika and Sara Åhman, (2006), "The Process of Ending Inter-organisational Co-operation", *Journal of Business & Industrial Marketing*, Vol. 21, No. 5, pp. 281-290.

default condition remained competition. And when the marketing efforts failed to generate the business they had hoped for, the companies quickly went back to competing with each other.

In tacit co-operation we find “single loop learning”. Single loop learning refers to learning about how to better accomplish specific tasks without questioning the dominant values or principles that structure the institution. This kind of learning improves performance without revolutionizing the institution. Thus, the confederation of co-operators will reflect on how to accomplish their task effectively, but they will not question deeper principles such as the relationship between individual and collective identity.

A second kind of co-operation (see Table 2) is incremental co-operation. Although the primary goals of the actors are still egoistic, this mode of co-operation is marked by the appearance of secondary goals that are collective. In this case egoistic goals do not need to be in alignment with each other. They only need to not be in competition. When this is the case, secondary collective goals can dominate and drive co-operative behaviour. The default state here is no longer competition, but rather coordination. *Coordination* refers to independent elements being harmonised toward a specific end. The difference between coordination and deep co-operation has primarily to do with the level of commitment and shared identity. An important quality of incremental interaction is learning that moves beyond single loop learning. If single loop learning is about how to accomplish tasks more effectively and double loop learning is about how to restructure the normative principles under which the behaviour takes place, then transitory learning is about beginning to make the connection between routines and norms. This is not double loop learning because the entire system of norms is not open to reconsideration, only the portion of the normative system that corresponds with the pre-existing consensus. Let’s take an example.

Table 2. Summary of three ideal modes of co-operation

Mode of Co-operation	Tacit Co-operation	Incremental Co-operation	Deep Co-operation
Pursued ends	Egoistic ends. They happen to overlap.	Egoistic and convenient collective ends.	Collective good is pursued.
Orientation Toward others	Strategy.	Sympathy. Empathy.	Unity.
Self Identity	Individual.	Revised individual.	Part of a larger whole.
Learning	Single Loop.	Transitory.	Double Loop.

Suppose there are two towns neighbouring each other. Frequently they compete for scarce resources, such as business investment, real estate development, educated residents, state investment in preserving open space, and so on. But they also have several reasons to justify co-operation. They might tacitly co-operate to build a school, for instance. In this case each town is acting on its selfish interests – to provide education to its residents and to keep costs down. For an example of incremental co-operation, we might imagine that the towns are on opposite sides of a river. Each town has a small economy, but would experience greater benefits by linking the two villages. A bridge would allow each town access to each other’s businesses. Thus, the towns have a shared interest in building a joint economy. However, the towns still enjoy benefits from maintaining their independence and they do not want to merge into a single municipality (this would be deep co-operation. Learning how to deepen their economic connections will require single loop learning (how to coordinate investment) but it will also require some revision of deeper values and identity. However, the changes and learning required do not fundamentally remake the identities of the two communities. Incremental co-operation is intermittent. Once the immediate goals are achieved, the parties can slip back to their natural state,

which is competition or coordination, although it will not take exactly the same form. In incremental co-operation, the identity changes that have occurred are not readily reversible.

Deep co-operation represents the third type of co-operative behaviour. In deep co-operation egoistic goals are set aside and a collective goal is pursued. Such collectivism cannot be simply an intersection of commonalities among individuals, but must express a joint meaning of identity. Thus people no longer ask, “What is good for me?” instead they ask, “What is good for us?”¹¹ In this transformation, the individual goals are replaced by collective goals. Deep co-operation can be extremely rewarding and productive, but it has two sides. The positive side is apparent when we find individuals coming together to serve a dignified common purpose. Take the example of people from different communities coming together and co-operate to develop a habitat management plan for an endangered species that lives in the region. In this case, each community has to bear unequal costs and receive unequal rewards, thus their co-operation cannot be explained as purely egoistic behaviour. Instead, they identify with a common purpose – a common identity of communities living in harmony with nature – and it is this vision that inspires their collective action.

Although the brighter side of deep co-operation is frequently apparent, there is a darker side as well. The root of the danger lies in the strength of the bond of solidarity among the members. If this bond is too strong, too permanent not only can the co-operation be used for undignified reasons, but also can have destructive effects on people’s individualities. For examples of undignified applications we can turn to any behaviour damaging or deadly to people. Crime, war, sabotage, or terrorism of the kind we find in any war zone can be consequences of deep co-operation. For examples of where co-operation is damaging to individual identities, we can look to cults or fervent religious fundamentalism. Think of the cults which have ended in mass suicides. These are examples where individuals surrendered their autonomy to a leader and the leader asked for the “supreme sacrifice”.

Clearly these examples represent situations that are extreme and unusual. Most co-operative behaviour takes place in the context of a rational, free, democratic society in which individuals are not expected or willing to give up significant portions of their identities. They are expected to revise their sense of self to be more based around a collective sense of being, but this does not entail eliminating individuality. Still the question of whether to co-operate or compete needs to be asked with an open mind. Both co-operative and competitive behaviour are reasonable and dignified forms of behaviour. Finding the right manifestation for any given situation is the challenge we all face.

As with so many other things in life, the key is to the question of co-operation or competition is balance. Co-operation and competition are dialectical opposites. They create and maintain and define each other. They each are incomplete without the other. There is a direct parallel to Jane Mansbridge’s notions of adversary and consensual democracy.¹² In her study of local community-based democracy in the United States, she found two forms of democracy prevalent. In adversary democracy people debated, argued, and resolved conflicts by voting. In consensual democracy, people deliberated, shared, and resolved conflicts through learning and redefinition of goals and strategies. She discovered that both these strategies were important and each had its right place in civil society. The challenge, she noted, is to figure out how to transition back and forth between the two.

The question of whether to co-operate or whether to compete must be revisited. Perhaps the better question to ask is: “How can we learn to move between co-operative or competitive behaviours in a manner that is healthy, respectful, and productive?” Transitions are always challenging, especially when they require very different forms of identity or social organisation. Moving from consensual to

11. Habermas, Jürgen (1981), *Theory of Communicative Action*, Vol.1, Beacon Press, Boston.

12. Mansbridge, Jane (1980), *Beyond Adversary Democracy*, University of Chicago Press, Chicago.

adversary democracy demands people set aside the goal of building a collective identity and “agree to disagree”. The psychological costs of this can be significant.

People desire consistency with regard to moral rules. They find it awkward to move among forms of organisation where the rules are stood on their head. Moving from competition to co-operation or vice versa requires changing the rules. When corporations, organisations, or governments ask people to shift back and forth among two very different forms of social arrangement, they risk losing legitimacy and creating apathy. Transitioning among forms of social arrangement appears to be necessary, but it also seems to be a very difficult thing to learn. Such learning needs to be supported by institutions that promote these changes. Making the reasons clear would help, as would clarifying the qualities of behaviour that are desired in each instance.

Learning to see the positive features of both competitive behaviour and co-operative behaviour leaves us open to the possibility of using each type as a resource or a strategy for solving shared and finding ways of living that are dignified and sustainable.