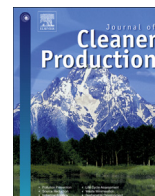




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## Prisoners' dilemma misleads business and policy making

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## ABSTRACT

The prisoners' dilemma is a game-theoretical construct about trust. It can be seen as a simple version of the 'tragedy of the commons', which is often used in the sustainability context as a metaphor for the tension between responsibility for common resources and the perceived self-benefit to individual organizations, regions or nations who neglect such responsibility in the short term. However, other game theory and developments in sustainability science imply that the prisoners' dilemma mind-set is delusive and misleading for both business and policy making. It helps obscure an even more important aspect of proactive leadership for sustainability: the potential *self-benefit of understanding the dynamics of major system change better than one's 'competitors'*. The UN 1972, 1992, and 2012 summits on sustainability, as well as the many summits on climate change, have been valuable milestones for influencing societal leadership at all levels. However, due to the prisoners' dilemma mind-set, they have also indirectly helped reinforce the idea that sustainability only pays off if the costs of achieving it are shared by all. That, in turn, has encouraged decision makers to believe that 'our organization's, region's or nation's sustainability activity must rely on policy making changing the rules of the game for everybody'. This focus on policy making as the only or main facilitator of sustainability efforts delays the needed transition of global society. By considering game theory such as tit-for-tat and modern systems science for sustainability, this paper illuminates major shortcomings of the prisoners' dilemma in the context of sustainability, and attempts to provide a more fruitful mind-set that can be motivated both theoretically and empirically. It is argued that a large part of the self-benefit of proactivity for sustainability is *direct*, i.e. independent of other actors' actions for the common good. In addition, it is argued that the self-benefit to businesses can be further increased through voluntary collaboration with other businesses to promote the common good, as well as through collaboration between proactive businesses and policy makers. Currently, none of this is intelligently and operationally part of mainstream leadership and public discourse on sustainability. The clarifications provided in this paper can lead to a much needed shift in mind-set among many leaders, not least political leaders, many of which seem to be trapped in simplistic prisoners' dilemma thinking and who act accordingly.

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## 1. Introduction

Climate change, chemical pollution, shrinking biodiversity, and poverty are examples of great challenges (Steffen et al., 2015; UN, 2016). However, could it be that our single greatest challenge, the one driving everything, is that leaders in business and politics fail to: (i) connect and structure all the challenges into a sufficiently large systems perspective, (ii) apply a sufficiently long time perspective, and (iii) design strategic, stepwise activity plans based on (i) and (ii)? In short, could it be that our greatest sustainability

challenge is that our leadership does not collectively lead society towards sustainability?

In this paper it is argued that many leaders fail to understand both the true character of the collective challenge and the opportunities that come with being proactive for sustainability. It is proposed that this is partly because the story of the 'tragedy of the commons' (Hardin, 1968) is influencing many leaders and scholars. It is often used in the sustainability context as a metaphor for the tension between responsibility for common resources (and, ultimately, humanity's common habitat), on the one hand, and the perceived short-term self-benefit<sup>1</sup> to individual organizations,

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regions or nations that neglect such responsibility, on the other. A simple version of the ‘tragedy of the commons’ is the ‘prisoners’ dilemma’ (Tucker, 1950). The latter is a game-theoretical construct about trust. Multiple descriptions of it can be found in the literature. A simple version is as follows. Two men, charged with a joint crime, are held separately. Each one is told:

1. If neither confesses, both will get a short sentence;
2. If both confess, both will get a longer sentence; and
3. If you confess, and the other does not, you will go free and the other will get life-imprisonment.

The ‘common best’ for the accused is (1), i.e. both remain silent (cooperate). Both would serve only a short sentence, and the total person-years in prison would be the lowest achievable. However, from a rational, self-interested point of view, and in the absence of solid trust, the logical outcome is (2),<sup>2</sup> because each wants to avoid life-imprisonment; the worst result in (3).

This metaphor certainly has pedagogical merit as an explanation of the importance of trust for cooperation, but how applicable is it in the sustainability context? It is used to imply that, since actors cannot trust each other to do what would be best for all in the long run, each individual actor can as well exploit nature and society as much as possible for their own benefit in the short term (Hardin, 1968). The rationale for this is that the exploitation and destruction of the common resources in the long run is anyhow seen as inevitable. But are the explicit and implicit conditions for the metaphor necessarily valid in this context (Ostrom, 1990; Lozano, 2007)? Based on other game theory and developments in sustainability science, this paper questions the way the prisoners’ dilemma is currently applied. This skepticism is also supported by the many real cases in which proactive sustainability efforts have produced benefits for the individual actor. Examples of such cases are discussed by, e.g. Broman and Robèrt (2016), who also provide a comprehensive description of the Framework for Strategic Sustainable Development (FSSD), which was applied in the cases included in that paper.

Some aspects of the alignment between sustainability-informed decision making on the one hand, and improved economy on the other, are obvious. For example, saving resources is saving money, as emphasized in a frequently cited report on circular economy (MacArthur, 2013). Some aspects are indirect; sustainability-informed constraints promoting innovation (Porter and van der Linde, 1995). A more comprehensive way of approaching the self-benefit of sustainability proactivity, from a systems perspective, is attempted in the FSSD and especially through its ‘funnel metaphor’ (Holmberg and Robèrt, 2000), which is discussed comprehensively and in relation to the prisoners’ dilemma in this paper. The funnel metaphor is intended to facilitate a more profound understanding of the dynamics of the sustainability challenge and the related self-benefit of competent, proactive sustainability efforts. This subtler understanding of the self-benefit, i.e. the ‘business-case of sustainability’, answers the question: ‘What’s in it for us?’, and thus serves as a prerequisite to getting leaders interested in learning how they can work strategically with sustainability. Many organizations do not currently identify themselves as world saviours, but as profit-seekers competing in a fierce market. If science could show how to improve business in a way that leads to a sustainable future, it would create the perfect ‘leadership virus’, one with the potential of producing a pandemic.

Thus, the aim of this paper is to scrutinize the common use and

applicability of the prisoners’ dilemma implications in the sustainability context, and to show that *competent* proactive leadership that, in stepwise fashion, offers increasingly relevant services with fewer and fewer destructive consequences for ecological and social systems, is a winning strategy – also economically – regardless of what other leaders do. The aim is further to show that it is only the pace of change that is influenced by legislation and other political incentives. There is arguably also an important relationship here. *The greater number of business leaders of this competent, proactive kind, the easier it will be for proactive politicians to design policies based on the same understanding, thus producing a positive spiral.*

## 2. An obsolete paradigm and the prisoners’ dilemma flaw

Some leaders working from an obsolete and unsustainable paradigm may still manage, for some time, to squeeze more money out of that paradigm. However, in addition to the negative consequences this has on ecological and social systems, such leaders increasingly risk destroying their own organizations as well, not least financially (McNall et al., 2011; Willard, 2012). And today, it is not only unsustainable businesses that are encountering increasing financial problems, cities and banking systems are too. Even many nations around the world have high and increasing debts that put the whole financial system at risk (Blundell-Wignall, 2001; Dobbs et al., 2015). Are these financial crises entirely due to incompetence in a more narrow sense, within the existing financial system itself? Or are they linked to unsustainable practices and strategies adopted in the past? Many economists fail to ask if the financially shaky world we see today is entirely a consequence of unlucky economic coincidences – some ‘perfect storm’ in our financial systems – or if we are, in fact, already suffering financially due to an approaching ecological and social collapse.

It is proposed here that today’s general discourse on sustainability – from scientific workshops to geopolitical summits and mass media coverage of these events – revolves, to a significant degree, around a specific, overriding confrontation: the economic ambitions of individual organizations, regions and nations, on the one hand, and avoiding the tragedy of the commons, on the other. The battlegrounds of the confrontation are three, seemingly paradoxical, dualities:

1. Small scale versus large scale;
2. Short term versus long term; and
3. Bottom line versus ethics.

This confrontation can be captured rhetorically: ‘Why would we, in our organization, pay money to be nice to people in other parts of the world and to people who have not even been born yet, if our competitors do not?’ Or, using the rhetoric of the prisoners’ dilemma: ‘How can we, in our organization, trust that others will follow our ethical example? If they do not, we will lose.’ The hidden meaning here is that self-benefit as a driver of sustainable development is not convincing enough to really influence the strategy of a single organization. Repeating the prisoners’ dilemma often enough is a way of falsely cementing this mind-set as a matter of common sense. The next line of reasoning follows naturally. If we do not believe that our efforts to promote sustainable development produce benefits to us, then we will rely on politicians to force all actors to share the costs of sustainability efforts. In addition, another drawback of the delusive prisoners’ dilemma mind-set is that when politicians shape the laws and other incentives, these are naturally derived from and designed on the basis of the same misunderstanding that prompted them. Thus, they serve to reinforce the superficial mind-set. It is a vicious cycle.

<sup>2</sup> This non-cooperative outcome is often referred to as Nash equilibrium in the literature.

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