The conflicts in modern society

Life in modern society is full of dilemmas which have serious implications for public welfare. **Mark Van Vugt** *argues that a multi-disciplinary approach involving psychologists is the only way to tackle them successfully.*

EVERY citizen enjoys the benefits of public services, such as hospitals, libraries and the police, but most will be reluctant to pay extra taxes to maintain them. Car drivers generally support the government's plans to promote public transportation. Yet, how many drivers are prepared voluntarily to give up driving their car? As a third example, everyone perceives the need for cutting down water demands during a drought, but at the same time it is very tempting for each individual household to sprinkle its garden.

These situations have in common that they represent a conflict between what individuals like to do (e.g., to drive a car) and what they ought to do for the welfare of society (e.g., to use sustainable forms of transportation). In the psychological literature these situations are known as *social dilemmas* (Dawes, 1980). In this article, I will start with a formal definition of a social dilemma, followed by a brief historical account of social dilemma research. Thereafter, I will address what social dilemma research, in my opinion, could contribute to a better understanding and management of the many serious dilemmas modern society is facing.

Basic structure

In the above examples the dilemma is posed by a conflict of interests between the individual and the collective. On the one hand, it is attractive to behave in such a way as to increase one's personal outcomes (e.g., to sprinkle the garden). On the other hand, if all or most individuals behave in this way it will result in a situation that is undesirable for all (e.g., a water shortage). Hence, the dilemma is characterized by the fact that a 'selfish' or non-co-operative decision has a positive effect on an individual's welfare, whereas the negative effects are carried by all the people involved. It is easy to see how this structure may lead to a collective disaster as there is no incentive for individuals to change their behaviour unilaterally.

This type of problem was first identified by Garrett Hardin (1968) in his well-known story about the 'Tragedy of the Commons'. This parable describes the situation in which a number of herdsmen graze their cattle on a common pasturage. The tragedy starts when each herdsman realizes at some point that it is personally quite attractive to increase the size of his herd as this will give his family more food. Each extra animal added to the herd will also do some damage to the common pasturage, but these negative effects are distributed across all the herdsmen. Hence, each herdsman decides quite sensibly to add an extra animal to the flock. As a result, the capacity of the commons is exceeded and the commons are ultimately destroyed due to overgrazing. The Tragedy of the Commons stands as a model for many problems in society where individual and collective interests are at odds, such as dilemmas involving the provision of public services, and the preservation of natural resources such as oil, gas, wood and water.

Overview of research

Social dilemmas have been studied extensively for more than five decades, starting with the pioneering work on game theory (for excellent overviews of the literature, see Komorita & Parks, 1994; Liebrand *et al.*, 1992; Van Lange & Messick, 1996; Yamagishi, 1986). Game-theorists tried to capture conflicts between two players in terms of experimental 'games' and were concerned primarily with finding rational solutions for these problems. Over the past decades many different games have been identified, but most research efforts have been focused on the Prisoner's Dilemma

Game, which evoked an avalanche of publications by social scientists during the 1950s, 1960s and 1970s. This stream of research was predominantly inspired by the (nuclear) arms race between the US and Soviet Union during the Cold War, which represented a threatening real-life Prisoner's Dilemma.[1]

In the Seventies, new problems arose in society, which encouraged researchers to develop and investigate different types of dilemmas. The main impulse was given by the energy crisis in 1974, which showed quite dramatically that the earth's energy reserves were finite and that conservation was to become an important policy. This inspired psychologists to develop experimental paradigms to model such resource dilemmas.

For example, in the experimental resource dilemma task (Messick *et al*., 1983), small groups of people are invited to the laboratory to play a computer–mediated resource game, whereby each of them decides how much of a particular resource (i.e., in money or points) they want for themselves. These decisions are made anonymous and so greedy individuals cannot be identified. Similar to real-world resources, the resource pool replenishes itself at a certain rate after each session (e.g., 10 per cent of the pool size). Hence, optimal use of the pool is possible if the group as a whole does not take more than the replenishment rate. However, as it is attractive for individuals to take more than their share, the total harvests may exceed the replenishment rate, which may lead to the depletion of the resource (cf. Tragedy of the Commons).

A different issue that inspired social dilemma research in various disciplines such as psychology, political science, sociology and economy was the debate about the public or private provision of collective goods. This discussion was eminent during the 1950s and 1960s, and returned in the late 1970s when there were signs of an economic crisis and people started to question the responsibility of the state in providing these services. These discussions were reflected in the development of a different research paradigm, the so-called *public good dilemma*. In studies of this kind a group of individuals are provided with an endowment, usually a sum of money. They can volunteer to contribute this endowment, or a certain amount of it, to attain a bonus for the whole group. The bonus, however, is only provided if enough members contribute. If this fails, each of the volunteers will lose the money they have invested, whereas the non-contributors can keep their endowment.

The public good dilemma represents a variety of real-life decision problems, such as the decision to buy a television licence, donate to charity organizations, become a member of a labour union, or participate in volunteer work. In each of these instances individuals are better off if the good or service (e.g., public television, labour union) is provided without their contribution as everyone can profit from its existence. However, if hardly anyone makes a contribution these facilities will cease to exist and everyone is worse off.

In addition to these controlled experiments, a recent trend in social dilemma research is to examine resource and public good problems directly in the field. Good examples of applied social dilemma research are studies into domestic energy conservation (Samuelson, 1990), organizational problems (Kramer, 1991), and my own research programmes on transportation decisions (e.g., Van Vugt, 1996; Van Vugt *et al*., 1995; Van Vugt *et al*., 1996), water conservation (Van Vugt & Samuelson, in press), and the privatization of public goods (Van Vugt, 1997).

Solutions

What does the literature suggest about strategies to solve real-world social dilemmas? Experimental research has identified a number of factors that may contribute to the solution of public good and resource problems. These can be grouped in two broad categories of solutions (cf. Messick & Brewer, 1983; Yamagishi, 1986). On the one hand, there are solutions that come about through *individual* changes in behaviour. On the other hand, there are solutions that result from the organized *collective* actions of groups of individuals. To illustrate this distinction, we might look at the different reactions to the drought that hit the UK in 1995.

In most regions the public was persuaded via local media campaigns to show personal restraint by watering their gardens or washing their cars less often. These campaigns had some effect on the overall consumption rates. In other areas, however, the problems were so severe that tougher interventions were necessary. For example, in West Yorkshire hose pipe and sprinkler bans were actually imposed by the local water company upon customers to cope with the shortage. These type of solutions are different in that they are collectively organized efforts to restrict the decisional freedom of individuals.

Individual strategies

Increasing awareness of the social dilemma

People may not always be aware that their behaviour carries negative consequences for the collective. For example, an individual household may not realize that the production of many television programmes, such as *EastEnders* or the *Nine O'Clock News*, would be impossible without the money raised by the purchase of television licences. Thus, it seems like a good idea to give people information about the advantages of buying a licence. Research has revealed, however, that the mere provision of information about the dilemma hardly affects people's decisions (see Komorita & Parks, 1994). This is intuitively plausible as such messages also convey that such goods will only be provided if enough people contribute. Hence, people may rightly believe that their individual contribution will not have a great impact. This sense of personal *inefficacy* is indeed one of the major obstacles for individuals to co-operate, particularly in social dilemmas with large numbers of people (Kerr, 1996). It is therefore paramount that public information campaigns not just emphasize the importance of contributing but also stress that each individual contribution 'makes a difference'.

Strengthening norms in the social dilemma

In many social dilemmas in the real world, decisions are made largely anonymous and therefore people can easily deny responsibility for creating or solving these problems. The problem of littering, for example, is greatest in city areas consisting of many high-rise buildings, mainly because in these places people are more anonymous and therefore feel less accountable for their acts. Experimental research has clearly shown the devastating effects of anonymity in social dilemmas, but it has also offered some interesting solutions (see Komorita & Parks, 1994). For example, co-operation increases dramatically when communication is possible within a group and when group members have to publicly defend their decisions. Moreover, group members have been found to act less selfishly when they are part of a small and cohesive group. These experimental findings suggest that social dilemmas could be managed by making salient the social norms prescribing cooperation.

In the example above, various 'normative' instruments could be used to decrease littering in city areas. First, the introduction of a 'cleanest street of the city' award might help to promote an anti-litter norm among residents as they may want their neighbourhood to look good compared to others. Also, anti-littering programmes should be organized at the level of the community rather than the city as a whole, as people generally feel more committed to solving problems occurring in their direct environment. Finally, residents might be encouraged to report litter offences directly to local police stations so that

violators can be identified and prosecuted. A positive side-effect of these normative instruments is that they enhance group cohesion and identification within an area, which may help to tackle a variety of social problems (e.g., crime, support for elderly).

Collective strategies

Softening the social dilemma

A commonly used collective strategy is the provision of *rewards* for co-operative decisions and/or *punishments* for non-co-operative decisions. This strategy reduces the inherent conflict in the social dilemma by making co-operation relatively more attractive. In the real world, this strategy usually comes about through tax measures. For example, the use of public transportation can be promoted by giving tax benefits to people with bus and railway cards or by raising the fuel tax for cars. The success of these interventions is mixed, and depends strongly on the actual size of the rewards or punishments as well as whether these incentives are recurring (see Van Lange & Messick, 1996).

Equally important is that the chosen form of incentive is somehow important to people's self-worth. For example, the results of our research on travel mode decisions suggested that business people would switch from car to public transportation if it would be more efficient and provide greater status (Van Vugt *et al*., 1995). Thus, these groups might be encouraged to use public transportation by introducing faster and more luxurious trains (e.g., with business rooms, computer and fax facilities).

In addition, it is important that the rewards or punishments are visible to those who do not yet show the desired behaviour. In this regard, it seems an excellent idea to build a separate bus or carpool lane running next to a heavily congested highway. However, my research has shown that this type of incentive will only work if it is within people's reach. For example, in evaluating a carpool lane experiment in the Netherlands we found that numerous car drivers reacted against this intervention — by undertaking legal action and by driving on the lane with mannequins as byriders — because they were unable to find enough passengers (i.e., only cars with three people were allowed on the lane; Van Vugt *et al*., 1996).

Reorganizing the dilemma

A second set of collective strategies alter the way the social dilemma is organized. This can be achieved, for example, by the *establishment of a leader or authority structure* to regulate the distribution or provision of a particular resource or good. Basically, all governmental bodies (e.g., parliament, police, city councils) can be seen as examples of this approach.

Another type of organizational solution is the *development of formal rules and jurisdiction*. The imposed restrictions in some areas during the 1995 drought are examples of this approach as they made it illegal for households to use hose pipes and sprinklers. The introduction of territorial zones in international waters is another example. This intervention makes it impossible for fishing boats to enter foreign areas and therefore reduces the likelihood of overusing the fish population.

Eliminating the 'social' in the dilemma

The most drastic form of collective action are those actions that eliminate (either fully or partially) the interdependence between people in the dilemma situation. In the social dilemma literature, this strategy is often referred to as *privatization* (Messick & Brewer, 1983). In real life, privatization can take many different forms. Probably the best example of privatization is the introduction of electricity and water *meters*. Via metering, individual households are charged according to their own resource use instead of the average use in the community (i.e., a so-called flat rate tariff). Hence, meters provide a clear incentive for people to restrain their water use as their outcomes are fully determined by their personal consumption decisions.

Our research has indeed revealed that metering has a significant impact on reducing water demands. For example, data from the UK national water metering trials in the early 1990s revealed an average decrease of about 11 per cent in monthly consumption rates (Van Vugt & Samuelson, in press).

Some comments on these solutions

It is difficult to make a fair estimation of the success of the above strategies in managing real-world social dilemmas, as they have either not been evaluated systematically or have been examined only under rather artificial conditions in the laboratory. In theory, collective solutions should be more effective than individual solutions as the former strategies directly alter the *outcome structure* of the social dilemma, which poses the biggest obstacle for behavioural change. Collective solutions, however, can be quite difficult to implement technically (e.g., meters for sprinkler use) or they may be difficult to monitor (e.g., territorial fishing zones). Perhaps even more important — as indicated by the results of the carpool lane study (Van Vugt *et al*., 1996) — they may be perceived as too drastic, unfair, and infringing on people's freedom. Hence, individuals may react quite forcefully against these interventions, either through individual (e.g., tax evasion) or collective protests (e.g., petitions and demonstrations).

It is therefore essential to constitute sufficient public support for these collective interventions before implementing them. Research has shown that the public acceptance of these solutions is greater to the extent that people perceive the situation to be more severe, such as during a water shortage (Van Vugt & Samuelson, in press). Another important factor is to what extent the public trusts the authorities to manage these dilemmas efficiently. Previous research has shown that compliance during a drought is greater when the water authorities are perceived as more trustworthy and fair (Tyler & Degoey, 1995).

Public campaigns play a major role in obtaining support as they may communicate the seriousness of the situation as well as the good intentions of authorities. The most effective solution to social dilemmas might therefore represent a combination of collective and individual solutions with the latter strategies paving the way for the more drastic collective interventions. Failure to do this may result in more harm than good as is illustrated, for example, by the flop of the carpool lane experiment (which was terminated in less than a year), or, closer to home, by the notorious poll tax disaster.

The challenge for future research and policy is to find the optimal combination of individual and collective strategies to tackle social dilemmas in society. This is only possible via a multidisciplinary approach whereby psychologists, with their natural expertise in individual solutions, start to collaborate with economists, engineers, and geographers who are traditionally more concerned with the development of collective solutions. As the effects of pollution, deforestation and excessive water demand become increasingly visible, there is really no time to waste!

Footnote

[1]The Prisoner's Dilemma derived its name from an anecdote about two prisoners who were accused of robbing a bank (described in Luce & Raiffa, 1957). The attorney, unable to prove they were guilty, confronted the prisoners with the option either to confess (non-co-operative option) or not (co-operative option). The outcomes for each were as follows: if both confessed each would get a five-year sentence, whereas if neither confessed each of them received only a one-month sentence. Thus, it was more attractive not to confess than to confess. However, there was a strong temptation to confess because if one confessed and the other did not, then the first person would walk free, whereas the latter person would receive a 10-year sentence. Thus, both had a desire to confess, but by doing so they would both be worse off.

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