

# Rational Ignorance of the Citizens in Public Participatory Planning

Alenka KREK

(DI Dr. Alenka Krek, MBA, Salzburg Research FG, Department of Geoinformation, Jakob Haringer Strasse 5 / III, A – 5020 Salzburg, akrek@salzburgresearch.at)

## ABSTRACT

One of the most important goals of public participatory geographic information systems (PP GIS) is to improve citizen's participation in planning processes. Does this really happen? Unfortunately, very little empirical research exists which would testify or falsify this hypothesis. In the process of trying to involve the citizens in the planning processes, we observe the effect of rational ignorance. Ignorance about an issue is said to be rational when the cost of educating oneself about the issue sufficiently to make an informed decision can outweigh any potential benefit one could reasonably expect to gain from that decision, and so it would be irrational to waste time doing so. For most citizens the personal benefit of getting involved in planning activities and learning how to use a public participatory GIS application is usually low and the cost of participation high. Therefore, they rather decide to ignore the possibility of participation. In this paper, we concentrate on the rational ignorance in spatial participatory planning and the role of PP GIS in this process.

## 1 INTRODUCTION

Community participation has become an important topic in planning theory and practice. Recent trends signal a paradigm shift towards decentralised, less bureaucratic and more participatory models. Novel participatory forms such as online surveys, online discussion forums, and computer supported decision-making tools offer new opportunities for the citizens' involvement. Some of these tools make use of geographic information systems (GIS) and concentrate on the implementation of GIS and web-based technologies in public participation situations. Technical solutions for such applications range from web-based multimedia systems to GIS supported communication platforms. Their major goal is to link the technology and the community enabling the process of participation. The practice shows that the traditional methods of participation, such as for example organised meetings, presentation of the new, planned activities on the analogue maps do not result in broader participation of the citizens. Can new possibilities for involvement improve participation? Can they contribute to the empowerment of the citizens? In spite of the new technologies, we still observe the effect of rational ignorance as an integral part of the participatory processes. Rational ignorance appears independently of the implemented participative method, and is a term most often found in political science and economics, particularly in public choice theory (Buchanan and Gordon 1962; Gunning 2002). Public choice theory is concerned with the decisions a rational individual should make in an individual or collective environment and is the basis for social or collective and public choice theories. Social or collective choice is dedicated to the particular problem of choice in a collective environment. It is a branch of economic analysis that studies the behaviour of politicians and individuals. James M. Buchanan who closely worked with several other economists, most notably Gordon Tullock, laid down the theoretical foundations for public choice theory. Their book, the *Calculus of Consent* (Buchanan and Gordon 1962) pioneered this new application in economics. According to rational choice theory, ignorance about an issue is said to be rational when the cost of educating oneself about the issue sufficiently to make an informed decision can outweigh any potential benefit one could reasonably expect to gain from that decision, and so it would be irrational to waste time doing so. For most citizens the personal benefit of getting involved in planning activities and learning how to use a public participatory GIS application is usually little and the cost of participation is rather high. Besides, citizens feel that they cannot really influence the final planning decisions. In such cases, they decide to ignore the possibility of involvement and participation. Economists say that these poorly informed citizens are rationally ignorant.

In this short paper, we investigate the analogy of voting models and public participation in spatial planning. We present the meaning of participation, mention some applicable participation models, and discuss the role of GIS-based public participatory applications in the process of participation. One of the most important goals of public participatory geographic information systems is to contribute to the improvement of the citizen's participation in the planning processes. Does this happen? The basic dilemma between the individual versus public interest in participation, and the issues of the citizen's motivation cannot be solved only with an appropriate design of the application. Rational choice and game theory provide us with some very useful concepts, such as for example the concept of rational ignorance, which can help us to understand the behaviour of the citizens and their possible and current role in the participatory planning processes. We illustrate the conflict between the individual and common interest on the case of the prisoner's dilemma and conclude the paper with some directions for further research. The concepts discussed in this paper applied to the participatory situations in spatial planning are in the initial stage of development. Special attention has to be devoted to the design of the user interfaces including the idea of intelligent user interfaces, which would be able to register particular characteristics of the participant and accommodate the user interface to his or her capabilities. Additional research has to be devoted also to the methods of motivation of the citizens. An integrated approach for PP GIScience combining technical and social aspects of an online map-based argumentation is urgently needed.

## 2 PARTICIPATION AND SPATIAL PLANNING

### 2.1 Meaning of Participation

The word *participation* in general means something positive; it implies that someone is cooperating, 'playing' along with the group or an individual, working with others in order to achieve a common goal. Participate comes from the Latin noun *particeps* which is a combination of part or *pars* (a piece) and *capere* (to take). The common usage of the phrase 'to take part' or 'to take part in' refers to participating in a group discussion (Skrbina 2001). The word *particeps* originally came from a translation of a Greek word *metokhe* (metoxi, metohi), of the meaning 'partaker', *metechein* is the infinitive type of the verb *meteho*, meaning participate, and *metechon* (or metexon) meaning participant. The noun *particeps* became a verb *participare*, and then changed into *participate*, which we use in English language today. Participation refers to the ontodynamic relationship between two related entities. In this relationship, the

“participant”, the one that participates, contributes something to the superior entity. She shares her knowledge, her part of the world and reality with the superior entity in order to contribute to some high-level goal. The participation has been for most people in our democratic society limited to voting the representatives in elections and then lobbying them over personally relevant issues. Other methods of participation include opinion surveys, referendum, focus groups, discussions, forums, etc.

## 2.2 Models of Participation

Current models of participation include voting in elections, some of them focus on ethical issues (Solomon and Hanson 1989) such as democratic ethics, citizen ethics, citizen’s rights and duties, mutual respect and help. Some other find their origins in social capital theory considering citizens to be the social capital and stressing the importance of the social learning (Crick 2001). One of the popular theory of participation is voluntary theory of participation represented by the civic voluntarism model (Parry, Moyster et al. 1992). The authors of this model identify resources, such as money, time, education, etc., motivations and mobilization as the three most important classes of participation. They argue that individuals with high socio-economic status and enough time available are likely to participate more than the individuals with less time. Arnstein (1971) provides a model of participation in a form of a ladder including eight stages, starting with manipulation and therapy which she considers as non-participation stage, and continues with informing, consultation, placation, partnership, delegated power and citizen control. The ladder analogy was applied and further developed by several authors. Weidemann and Femers (1993) use it for the classification of the public rights adapting it to their analysis of decisions needed for the purpose of hazardous waste management. According to their analysis, public participation increases with the level of access to the information as well as the rights that citizens have in the decision making process. Some other authors (Smyth 2001; Carver 2001; Steinmann, Krek et al. 2004) apply the analogy of a ladder in GIS-based public participatory approaches.

## 2.3 Participatory Planning

Planning has traditionally been recognised as a centralised, bureaucratic activity carried out by planning offices, planning authorities and other stakeholders. It was executed top-down and lead by the planning experts. Recent trends signal a paradigm shift towards participatory planning models. Community involvement and participation has become an important theme in planning theory and practice. The efforts towards participatory planning are based on the assumption that people are willing to become actively involved in the spatial decision-making. Public participation itself is in spatial planning processes regulated by law. In the province of Salzburg in Austria, for example, ROG 1998 (Salzburger Raumordnungsgesetz) regulates the process of public participation in spatial planning. The law describes public participation as an integral part of the planning, but it does not specify the way in which this participation should be executed. The planners emphasise utilising participatory methods, not only for the purpose of informing the citizens about the planned activities, but also as a mean to cooperate with the citizens, and as a mean for sharing the knowledge and ideas within the community. The participatory approach in spatial planning requires understanding of the social processes in a community and the behaviour and motivations of the individuals who form the community. It requires also novel, innovative, and attractive models of participation and participatory decision-making tools. These tools include methods for initiating, motivating, and maintaining citizen’s involvement and technical tools that can enable, and support new ways of involving the citizens in the participatory spatial planning.

## 3 THE ROLE OF GIS-BASED PARTICIPATORY TOOLS

Standard, classical methods of public participation in spatial planning include personal discussions, meetings organised in a public place, presentation of the planned activities with the help of analogue maps, etc. In contrast to the traditional methods of participation, novel forms are beginning to evolve due to the new technological possibilities. Recent developments, especially in the field of web-based user-friendly applications and broader use of Internet as a communication tool, encourage the evolvement of the novel ways of the involvement. These new forms include online discussions, web surveys, online forums, virtual workshops and conferences, exchange of e-mails, and online map-based discussions. They can be supported by geographic information systems (GIS) and integrated in a public participatory GIS (PP GIS). In the last few years, a huge amount of scientific literature emerged in the field of PP GIS, discussing technical and social issues of such applications. This research field became very popular within the GIScience community. However, the practical side of this research shows a very different picture. Namely, it is very difficult to find good, operating, practical examples of such PP GIS applications. For the purpose of our study (Steinmann, Krek et al. 2004; Steinmann, Krek et al. 2005), we finally managed to selected twelve online public participatory GIS applications. We focused on their visualisation capabilities, interactivity, usability of the application from the user’s point of view, and GIS functionalities included in the applications. Our survey based on the executed interviews showed that the most of the selected applications “only” deliver information to the user and provide some basic possibilities for the one-way communication such as for example writing an e-mail or getting involved in a discussion forum.

The role of GIS-based participatory tools is limited to providing the information to the users and visualisation of the spatial problems combined with some simple tools for communication and participation. Simply making GIS available on the Internet does not constitute an effective participatory decision support solution. An integration of the GIS capabilities and participation functions still offers potentials for further developments and new concepts. The providers could create intelligent interfaces to specific problems that can intelligently react on the user and recognise the socio-cultural and educational background of the user and adapt themselves to their requirements accordingly (Carver 2001). In spite of the huge technological development, support of a GIS and multimedia, integrating games into the visualisation of the spatial problems, we cannot observe increased participation in spatial planning. The GIS-based tools itself cannot encourage higher public participation in spatial planning since GIS and spatial data are expensive and require substantial investment in learning how to use them. Their major role is still limited to enabling time and place independent access to information and one-way participation. The reasons for low participation in spatial planning should be investigated with a great care.

## 4 INDIVIDUAL VS. PUBLIC INTEREST IN PARTICIPATION

Public participation in spatial planning is a collective action involving planning offices, authorities, and individual citizens. The problem of such collective actions can then be taken in a preliminary way to be a dilemma or conflict between collectively and individually best action, where the action required for achieving the collectively best outcome or goal is or can be often different from the action required for achieving the individually best outcome (Tuomela 1992). An example would be searching for the best location for dangerous, waste material. Trying to find the right location represents a conflict of interest between the citizens, planners, nature preservation authorities, and government. This diabolical phenomena is referred to by a number of names including “Many-Person Dilemma”, “Contributor’s Dilemma”, “The Voter’s Paradox”, or in general “Social Dilemmas”.

### 4.1 Common Good

The social dilemma results from the situation in which a group of citizens shares a common output and in which each individual must decide whether to contribute to the public participation planning activities or not. A common output can be a location of a new bus station, new traffic regulation in the town, changes in the land use, or an alternative location for the new school. The etymological origin of the word common is the old French *commun* and Latin *communis* meaning the service ‘as if serving each other’ (Magness 1999). “The common good” seems to be based upon the differentiation between the things that are good for individuals and the things that are good for everyone as it is the case of the public welfare, national defence, and the light on the public roads and streets. For example, “equality before law” might be considered a component of “the common good” and “winning a business ticket class, or an opera performance” would be an individual or private good. Other examples of a common good include an accessible and affordable public health care system, and effective system of public safety and security, peace among the nations of the world, a just, legal, and political system, unpolluted natural environment, and a flourishing economic system. Another characteristic of a common good is accessibility. A common good is a good to which all members of society have access, and from whose enjoyment no one can be easily excluded. Concrete changes in the environment planned by the planning offices and authorities are a common good and they are shared by the citizens and other visitors. All persons, for example, benefit from the availability and accessibility of a common good. They all enjoy the benefits of clean air, the location of a new bus station, an unpolluted environment, or any of our society's other common goods. Maintaining and establishing a common good requires cooperation of several individuals and stakeholders. However, it might seem that since all citizens benefit from the availability of a common good, all would be willing to contribute to the establishment and maintenance of the common good. Nevertheless, this is not the case. Different people have different values and valuations of what they consider to be important and worth of investing into. Such disagreements are bound to undercut our ability to evoke a widespread commitment to the common good. Such efforts can only lead to adopting and promoting the views of some, while excluding the others.

### 4.2 Prisoner’s Dilemma

The repeated Prisoner’s Dilemma game captures the essence of the conflict between doing what is good for the individual e.g. self-interest behaviour and what is good for the community e.g. cooperative behaviour (Davis 1983; Friedman 1986; Baird, Gertner et al. 1994). It is a classic problem statement describing a situation where what is rational for an individual is in conflict with what is rational for the group. It is modelled as a game, defined by the players of the game, their possible strategies, and the rules of the game. In general, games are played by the sequence of moves. Individual moves are of interest insofar as they contribute to an overall plan of action e.g. the strategy. What characterizes a strategy is that, at every point of a decision, the strategy dictates precisely what the player does (Friedman 1986). Associated to each possible outcome of the game is a collection of numerical payoffs, one to each player. These payoffs represent the value of the outcome to the different players, and tell us the consequences of actions for a player. Solving a game is the process of identifying which strategies the players are likely to adopt.

The Prisoner's Dilemma goes like this: two criminals are arrested for a crime and placed in separate rooms. The game is simultaneous-move game, which means that the players (the criminals) choose strategies simultaneously without observing the other’s strategy. They have to decide about their own action without knowing the reaction of the other criminal. Each is given the opportunity to confess the crime or remain silent. Each of them is told the following:

- If neither of you confess, then a minor penalty will apply to both of you.
- If you confess and the other prisoner does not, then you will be set free, and he will get a severe punishment.
- If both of you confess, then you will both be charged for the full crime, though some leniency will be shown because of your confession.

This challenge is typically represented in a table (see table 1) and is often called pay-off matrix. A payoff matrix shows the payoffs that each player will receive in the game, and they depend on the combined actions of all players. These payoffs represent the value of the outcome to the different players, and tell us the consequences of the actions for a player. A payoff matrix is used only in the case when there are two players playing a game. The strategies in our case are to be “silent” or to “confess”, and the prisoners can choose one of them. The pay-off matrix shows possible consequences of their selected strategy.

		Prisoner 1
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		Stay Silent	Confess
Prisoner 2	Stay Silent	1: Minor penalty 2: Minor penalty	1: Set free 2: Major penalty
	Confess	1: Major penalty 2: Set free	1: Intermediate penalty 2: Intermediate penalty

Table 1: Prisoner’s dilemma

The prisoners in this game individually gain more by not cooperating, but if both defect, they both lose more than they would if both cooperated. The problem is that individually, each prisoner reasons that it is more rational to confess regardless of what the other prisoner does. The strategy “to confess” is a dominant strategy, which is the best choice for a player for every possible choice by the other player. A player will choose a strictly dominant strategy whenever possible and will not choose any strategy that is strictly dominated by another. However, from the individual point of view of both of them, it would be the most rational if neither of them confessed. This peculiar parable serves as a model of cooperation between two or more individuals in ordinary life. In many cases, each individual would be personally better off not cooperating on the other. Without the opportunity to coordinate their actions, they are not able to achieve the outcome that is best for the pair of them.

**5 RATIONAL CITIZENS**

The result of the prisoner’s dilemma provides an explanation for the citizens’ behaviour in the case of the public participation in spatial planning. The participation itself incurs cost to the citizens, and usually brings rather low benefit in comparison to the level of the investment. The cost of participation includes the cost of informing oneself about the form of participation, planned activities and learning how to use a public participatory GIS application. When we proceed with some activity that costs us time, money or other resources, we expect to get some return for our efforts. The benefits are difficult to quantify. Depending on the activity, the benefits can be direct or indirect. When we take an action that we directly benefit from, it is easy to assess the benefit to cost equation. When we do something for the collective group, in which the reward derives from being a group member, the situation is much more complicated. It would seem reasonable to wonder how the benefits derived from being a member of the group compare to the cost to the individual contributing. The situation in spatial planning participation is similar to the situation of voting and the seeming irrationality of voting, i.e., that it is irrational for voters to vote and to be informed. A rational actor analysis of politics starts with the decision to participate in the political process. A simple cost-benefit analysis indicates that the probability of one’s vote being decisive is so small that the cost of voting exceeds the benefits. It is commonly argued under a rational choice theory going back to Downs (1957) that it is irrational for a citizen to vote and to acquire political information (Jankowski 2004). Besides, the citizens also feel that they cannot really influence the final planning decisions, and make choices together with the government. In such cases, they decide to ignore the possibility of involvement and economists say that these poorly informed citizens are rationally ignorant. Some authors, for example, Buchanan and Tullock (Buchanan and Gordon 1962) claim, there is no difference in individuals’ motives in the various private and public sphere of action. In both cases, people pursue their own interests rather than ideal version of the public interest. According to them, the primary differences are in the rules of the game, and therefore in the individual’s incentives and responses.

Amazingly but typically, the return to the individual from being a group member is often less than the cost of the contribution made by the individual. In this apparent paradox, in which the cost of a given action to an individual can be considerable and yet have no significant impact on the benefits accrued to the individual from being a member of a group. Therefore, it turns out that “rationally” best choice of the individual is to “free-ride” e.g. to share in the group rewards of his or her contribution. The individuals become “free-riders” by enjoying the benefits of a common group, without really getting involved in the common activities, for example, in participative spatial planning. The benefits of a common good are available to everyone, including those who choose not to take part in establishing and maintaining it. The new location for a bus station, unpolluted air, a good and accessible health care, etc. are, once established, available to everyone. The issue is about the problem of group shared property where individuals that do not contribute cannot be excluded. The problem might appear if enough individuals become free riders and the common good that depends on their involvement can be destroyed.

**6 CONCLUSIONS AND FURTHER RESEARCH**

Our democratic society calls for active involvement and participation in all areas of living and working. Participative strategies can be used in very different situations; examples include goal setting situations, voting, or participatory planning. Ludwig and Geller (1997) show the effectiveness of participative strategies on a case of pizza deliverers. They studied injury control among them and found out that members of a group who participated in a goal-setting process not only improved the target behaviour but also showed significant increases in relevant behaviours. The authors of the study assume that the participative intervention facilitates the activation of implicit rules and instinctive motivation, whereas assigned interventions may place implicit goals by external control which is restricted to the targeted behaviour. While planning has traditionally been a highly centralised and bureaucratic activity carried out by the planning experts, recent trends signal a shift towards inclusive and participatory planning models. In spite of these efforts, we observe rather low number of citizens taking the opportunity for an active involvement in the participatory spatial planning. The reasons for that can be best explained with the problematic of the common good and the individual citizens that place their high value on their individual freedom. Our society pursues the individualistic personal view and supports the individuals to pursue their individual goals and interests without interference with the others. Some researchers call for the improved

understanding of the “ethics of the common good” addressing also questions related to our attitude towards the individual’s contribution to a common goal. The choice that we face in participatory planning and also as a society in general, can be best described as a choice between a society as a group of individuals who protect and follow their own selfish interests or a society in which people accept modest investments and sacrifices for a common good.

In this paper, we focus on the effect in economic and political science literature known as “rational ignorance”. We present a (partial) explanation for the citizens’ behaviour and their ignorance which influences the process of public participation in general, and in particular in spatial planning. The paper tries to give some attention to the topics not so well known in public participatory spatial planning. The question that appears is “Can we do something against rational ignorance of the citizens?” “How can we deal with it?” Rational ignorance is only one possible explanation for the behaviour of the citizens. Other reasons for low participation should additionally be investigated. Systematic studies of the citizen’s behaviour, values and interests in participation are needed. Motivating the citizens is one of the crucial issues and can substantially influence the results of participatory planning. A change in the culture of planning means also changing from ‘public participation’ lead by the planning authorities into ‘participatory planning’ in which diverse groups of individuals and stakeholders come together, exchange information, negotiate, and attempt to achieve consensus. Because of the voluntary and informal nature of these processes, new techniques and tools are needed, which would enable sustained motivation and commitment. Individuals, employees, and stakeholders should find appropriate ways and mechanisms for animation and inspiration of a project team, department, corporation and individuals involved in participatory planning. Even though, the methods and models for motivation and mediation exist, they are still not widely used in the process of spatial participatory planning. One of the crucial issues is the investment in learning how to use electronic, map-based based applications and how to design them in such a way as to attract broader general public to participate in planning processes. The issues of usability of such applications gain the importance with the goal making them available to all social groups. Other research issues are; systematic methods for motivation of the citizens, models and indicators for usability of PP GIS applications, research on attention, and more systematic research on rational ignorance, its reasons, and effects in spatial planning public participation.

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