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Regional cooperation in the management of transport-systems

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1. Transport : the problem

Since the beginning of the sixties car mobility and car ownership have increased considerably. The growing welfare was used by people to buy a car, the welfare-symbol. The government built new infrastructure, but withheld investments in public transport infrastructure. These developments, together with growing live-work travel distances and a growing population, led to a considerable growth in (car) mobility. Transport policy in the sixties and seventies was demand-following. The supply of infrastructure was adapted to the demand. The aim was to certify the flow of transport. New infrastructure resulted in new demand (and more mobility).

Transport flows are increasing rapidly, and even on the long run annual growth figures of 3 % or more are envisaged. The Second Transport Policy Plan predicted growth of 70 % between 1989 and 2010 and this figure already seems to be an outdated underestimation. transport flows will increase rapidly, but to which extent cannot be told by certainty.

This growth of mobility, however, is not without problems. Firstly, mobility, and especially car mobility, deteriorates the accessibility of economic centres and inner cities. Congestion is increasing. Secondly, (car) mobility is deteriorating the environment. Transport does have a negative impact on the environment. When these problems are self-evolving, there may be no need for the government to take measures. However, this will not be the case. It is very unlikely that there will be a period of economic recession for more than 10 or 20 years, which should be a condition for a reducing car mobility. Secondly, it is not likely that the technological development will be that rapidly that the problems will be solved. Besides, technological measures would probably only solve the environmental problems, not the accessibility problems. And finally, an energy crisis might lead to a substantial raisal of fuel prizes. Such a situation is unpredictable.

2. Transport policy : the reaction

The Dutch government concluded, that the transport policy should be changed to reduce the (growth) of car mobility. The two main problem areas are the accessibility and the environment. To maintain or even improve the environment and accessibility several measures are proposed by the government. Measures should be taken to reduce the necessity to move, to improve the use of alternative modes and to reduce the environmental impacts of transport. Besides, the use of existing infrastructure should be improved.

The proposed measures of the government could be divided into push- and pull-measures. Push-measures like prize policy should reduce the (growth of) car mobility. A raisal of the variable costs of car mobility should be used and parking policy measures were thought to be an effective toll as well. Pull-measures like the improvement of public transport and bicycle facilities should increase the use of public transport and bicycle.

However, the government realized that not all regions were alike. Problems differed in kind and degree between regions. Therefore, transport policy should differ between regions although the main aims were alike. The regional scale was according to the government the scale at which transport flows showed a functional coherence. To tune the transport policy to the region-specific situations, it therefore seemed appropriate to formulate the transport policy on a regional level. Since the formulation of transport policy should be on a regional level, the implementation of the transport policy should be on a regional level as well.

However, the problem was that a regional authority did not exist. The administrative structure in the Netherlands consisted of three levels, but not a regional one. This problem was recognized and a discussion was initiated about the Dutch administrative structure. The government concluded that the tasks and competencies with regard to transport policy were dispersed among the administrative levels. This was impairing an effective and coherent policy. To attain the aims a more coherent approach and a more integral policy were nevertheless necessary. A reorganization of the administrative structure therefore seemed indispensable.

3. Regional transport authorities : cooperation as a means

Regional transport authorities, or transport regions, were launched as the solution to the problems. A transport region was defined as a form of (regional) cooperation between municipalities, tuning their policy with other administrative levels and with public transport firms (and other private parties). This cooperation should develop into a new administrative level, the regional authority with its own tasks, competencies and financial means. These regional authorities should manage the (regional) transport systems. In all parts of the Netherlands municipalities started to cooperate, although regions differed considerably in the development of their cooperation. The central government stimulated these developments by rewarding successful cooperation.

The elections of 1994 changed the process, although the motives for a restructuring of the administrative organization did not change. The new government stopped the process of regionalization in the more peripheral regions and allowed only 7 (of the former 30) regions to continue development. According to this government, a simple reshuffling of the financial means, competencies and tasks should suffice. During time, however, even these 7 (more urban) regions became increasingly uncertain about their future. The government nowadays is considering if not only a few regions should go further on their way to become a mature regional administrative organization.

Nevertheless, even in the system where the present administrative structure remains unchanged and the problem "of the inadequate administrative structure" will be solved by a reshuffling of competencies, tasks and financial means, cooperation will remain an essential condition for the attainment of the aims of the policy. Without cooperation, the accessibility and the environmental condition will not be maintained or improved. However, rewards for successful cooperation were in the meantime (beginning 1996) abandoned. The central government changes its policy of rewarding successful cooperation

and distributed financial means to the lower administrative levels more or less independent of their successes.

4. Cooperation : the question

As stated above, cooperation with respect to the management of the regional transport network will be important in the near future. Without cooperation the policy aims will not be attained. It is therefore interesting to know if cooperation will evolve and develop. Will cooperation evolve and when and why will it evolve? Consequently, the aim of the study may be defined as the explanation and prediction of cooperation. Insight into the variables which influence the process of cooperation will be necessary. If these questions can be answered, the resulting knowledge may be of help to maximize the prospects of the national transport policy aims.

The research question therefore may be defined as :

How can cooperation with regard to the management of regional transport networks be explained and predicted? Which variables do influence the process and success of cooperation?

To answer these questions, first the character of the goods subject to the cooperation has to be clear. It may be a private good or a public (common) good, but the distinction between these two is fundamental. Cooperation with respect to the production of private goods may be far easier to achieve the cooperation with respect to the production of common goods. Therefore, in the next paragraph, the transport system, being the subject of the cooperation in the region, will be discussed.

5. The transport system : a common good

As stated before, the difference between private and public goods may be essential. The difference between these two kinds of goods may be explained using the characteristics exclusion and rivalry. Using these characteristics and supposing a dichotomy, four possibilities do exist. Exclusion may be easy or difficult, and rivalry may be small or large. With respect to pure private goods rivalry is large and exclusion is easy. The prize mechanism does function in this case. With respect to public goods, the prize mechanism does not function. Theoretically, individuals can not be withheld from consumption. Exclusion is difficult to realize. Besides, consumption of a pure public good is not rivaling. The two other possibilities are common pool goods (or common pool resources) and toll goods. With regard to common pool goods exclusion is difficult to achieve and rivalry is large. With respect to toll goods exclusion is easy to achieve and rivalry is small. A good may move from one category to another, since its characteristics may change. For instance, at first crowding (rivalry) may be absent and a good may be a pure public good.

When more individuals use the good, however, crowding may appear and therefore the character of the good may shift towards the category “common pool goods”.

Now, in the case where the management of regional transport networks (infrastructure) is at stake, the transport network is the “good” to be managed (or to be produced). Exclusion of individuals of the use of the transport network is difficult to achieve. It will be very precious to keep individuals from using roads. Therefore, the transport network may be defined as a public good or a common pool good. The second relevant characteristic, rivalry, is more dubious. In fact, when no one (or very few individuals) is using the transport network, rivalry is absent. In this case, the transport network may be classified as a pure public good. However, when many individuals use the network, crowding may appear. Congestion may be the result. In that case, the transport network may be classified as a common pool good. It can be concluded, that the transport network may be a public good at first, but when more individuals use the transport network, the good will shift towards the category of common pool goods. Since generally in the Netherlands congestion does appear to a certain extent, a regional transport network may be defined to be a common pool good.

6. Restructuring the administrative organization : a fiscal federalist argument

Since the transport network may be considered to be a common pool good or a public good, fiscal federalism may be used to consider the appropriate administrative organization. According to fiscal federalism, every public good has its own optimal level of provision and production. The level of costs and benefits differ between public goods. Consequently, a single administrative level providing (and producing) all public goods is not an optimal situation. Fiscal federalism argues that every public good should be provided (and produced) at the level coinciding with the needs and preferences present at that level. Needs and preferences may differ between locations or regions and therefore a decentral provision may meet the local preferences better than a central provision. Tuning the administrative provision level at the spatial area of the users will result in an optimal allocation of provisions. This is the principle of fiscal equivalence, meaning that individuals (households or firms) and groups (neighbourhoods or communities) get what they pay for and pay for what they get. This argument does have a decentralizing influence.

However, realizing an administrative organization for the provision of every public good would result in a multiple layer of administrative organizations. This might lead to high costs of organization and decisionmaking. Limiting the number of organizations and combining them may yield economies of scale. Secondly, it will almost be impossible to limit the costs and benefits of public goods to the spatial area of the providing authority. This is the problem of spatial external effects. To internalize them, the provision should be at a higher level. These two influences, the possibility to realize economies of scale and the internalization of external effects, do have a centralizing influence.

The mentioned economic arguments are not the only ones influencing the structure of an administrative organization. As could be concluded from the development in the Netherlands as well, the political opinion is important. It is the politicians who decide and therefore their opinion is important. Besides, the resulting administrative organization does not have to be immobile. Changing societal or technological circumstances may result in a centralizing or decentralizing pressure at the organization. The changes may bring about a formal change in the administrative structure. When, in case of a centralizing pressure, politicians choose not to change or adapt the administrative structure formally, cooperation between administrative providers may be an option. Thus, cooperation may be a means to overcome changing circumstances. Cooperation may lead to a more optimal provision of the public goods.

7. Regional cooperation : a commons dilemma game and assumptions

As may be concluded, with respect to transport policy a common goal is at stake. This means, that every actor should prefer the realization of this goal. Consequently, for every individual actor the following assumption is presumed :

Assumption 1 : $B_i > C_i$

Actors will weigh (their perception of) the costs and benefits in their decision whether to further the common interest or not. Two considerations are important. Firstly, an actor should be able to bear its costs of furthering the interest. When the actor is not able bearing these costs, he will not strive for the good. Secondly, when the actor is able to bear the costs, he will use the costs/benefits ratio to decide whether to contribute or not. If the assumption is not met, an actor does not prefer the realization of the common interest and therefore will certainly not further this interest. In that case $B_i < C_i$ and consequently, he is better off not furthering the interest than furthering it. In the case of common pool goods, it is presumed however, that individuals do meet the mentioned assumption.

However, the presumed assumption that every actor does prefer the realization of the common good does not mean that the achievement of cooperation to further common goals is obvious. This phenomenon has been known as the commons dilemma. A commons dilemma game shares an underlying strategic structure, containing the following properties:

- each player faces a choice between two options which may be labeled C (cooperate) and D (defect);
- the D option is dominant for each player, i.e. each is better off choosing D than C no matter how many of the other players choose C;
- the dominant D strategies intersect in a deficient equilibrium.

A more optimal outcome, in which every player cooperates, should be preferable from anyone's point of view. Theoretically, however, the structure stimulates individuals in not cooperating and, hence, results in a suboptimal outcome.

Voluntary cooperation to further some common interest is difficult to achieve due to several problems. Firstly, an individual may feel that enough other people will cooperate to produce the good without his or her help. Hence, the individual may decide not to contribute, because he can enjoy the good for free. Secondly, a person may believe it would be futile to contribute because the good will not be provided anyway. Thirdly, individuals may contribute suboptimally because they are averse to be taken for a free ride. Besides, some individuals might fail to contribute because they are honest holdouts or because they are not rational or simply because they do not know. Consequently, cooperation to further some common interest is not self-evident. Therefore, several analysts presume that all common pool resource situations are commons dilemma situations and must have a solution imposed by external actors to achieve the optimal outcome. On the other hand, in many instances having the above mentioned structure cooperation does occur without an external actor forcing the cooperation. Common pool resources do not have to be destroyed. Thus, other variables seem to be relevant as well. Theories of collective action consider the probability and sustainability of cooperation. However, before turning to the variables which, according to the theory of collective action are of relevance with respect to cooperation, some assumptions have to be made.

The commons dilemma game and the theory of collective action are about individuals and their behaviour. However, in the case of transport regions, cooperation between organizations is at stake. Therefore, to use the theory of collective action, an assumption has to be made, although in the literature authors do not state that their theory is not usable for the description and explanation of cooperation between organizations.

Assumption 2.: Cooperation between individuals is comparable with cooperation between organizations.

Therefore, the theory of collective action may be used to describe and explain cooperation between organizations.

According to Simon, individuals are prepared to participate in an organization, when their activities within the organization contribute to their personal intentions. These employees/participants adopt and try to achieve the aims of the organization and they are materially or immaterially rewarded. These rewards strongly stimulate the employees/participants to strive for the organizational aims and to accept these aims as the base for their behaviour. The employee/participant accepts a hierarchical relation and is prepared to submit his or her personal aims to the organizational aims to a certain extent.

Personal features of the representatives of an organization are considered to be of no influence. Although they may have influence, they are considered to be equal. The subject of study is the cooperation between organizations. Therefore, organizations are the subject of study. A third assumption is :

Assumption 3 : Personal features of representatives of the cooperating organizations do not significantly influence cooperation.

8. Collective action : the variables

8.1. A system approach

In fact, a distinction may be made between single games and repeated games. In a single game, only once a decision has to be made whether one will cooperate or not. The well-known prisoner's dilemma game may be considered to be a single game. The single game is a game not very general in practice. In a repeated game, many decisions have to be made. The final decision, when known, of a repeated game has the structure of a single game. In the situation of the transport region, the repeated game is at stake. Organizations will continue to be dependent on one another and therefore will have to make decisions about whether to cooperate or not continuously. In this dynamic situation several variables seem to be of influence. In this paragraph these variables will be discussed very shortly. The variables will be related to each other and will be presented in a model. By using a model the variables and their mutual relations can be presented systematically. The variables do influence one another and are not just the independent variables influencing cooperation (the dependent variable). Most variables are connected with other variables and correspondingly influenced by them as well. Therefore, a system approach may be considered to be a tool for studying the reality. The use of a system approach has been complementary as well, since the approach states that, in case of an open system, the environment of an organizations should be taken into consideration because it may influence the organization. Cooperation to manage a regional transport system may be considered to be an open system, and thus, the environment has been added as a variable of influence. Every organization is related to its environment on many ways. The environment offers both opportunities and limitations. With respect to the actors managing the transport network, the policy of higher administrative authorities and the policy of other organizations may be part of the environment. An unstable environment causes uncertainties for groups or organizations. An unstable environment, causing large uncertainties, may impair cooperation independent of the character of the other influencing variables. The environment is not included in the presented model (see figure 1), however, since it may be considered to be an external variable. The model only contains internal variables. Consequently, however, an additional assumption has to be made with respect to the value of the variable "environment":

Assumption 4 :	The stability of the environment of the cooperating actors is not that small, that uncertainty for the actors is very large resulting in a situation where actors will not cooperate. The environment has to be stable to a certain extent.
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Figure 1, containing the model, may offer a framework for the description, explanation and prediction of (voluntary) cooperation. The model contains a number of variables influencing the dependent cooperation.

As is shown in the model, however, several of the influencing variables themselves are not wholly independent. Their character may be influenced by another variable positively (+) or negatively (-).

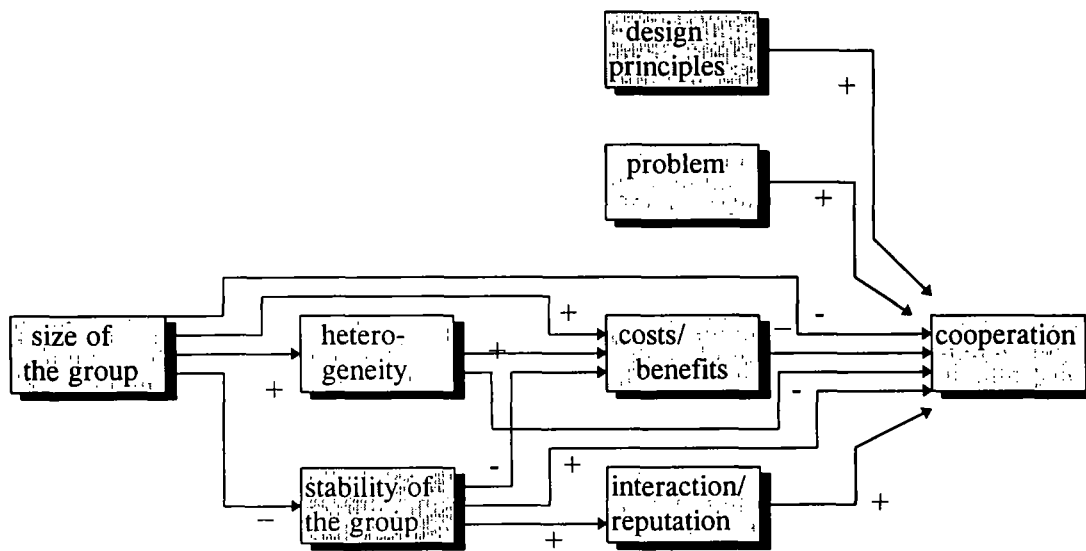


Figure 1 . cooperation influenced

Two final remarks have to be made before turning to the variables. The first remark is about perception. With respect to the influence of the variables, perceptions of actors are important. The perceptions, definitions or mental images actors use, help them choosing their strategies and selecting their goals. Therefore, a relationship cannot be considered to be an interdependency when actors do not consider it to be an interdependency. And an actor is not reliable, until other actors perceive him to be reliable. The second remark is about the organization. Distinction has to be made between two situations. Firstly, in the situation where no organization has been realized so far and actors are interdependent and sharing the same main goal, several variables influence the chance that those actors will start to cooperate to further that goal. Secondly, when they start to cooperate some sort of organization will be realized (formally or informally) to regulate behaviour. In that situation, the same variables are of relevance, but other variables come into play as well. Then, the stability of the group is at stake. And besides, the organization has to meet several design rules to increase the chance for successful continuing cooperation. These two variables are distinguished in the figure by their more dark grey color.

8.2. Interaction and reputation

In cooperative games every actor has to deal with other actors with which it interacts. Interaction does influence cooperation. Communication, a form of interaction, stimulates cooperation. Absence of communication (as is the case in the prisoner's dilemma) is likely to impair cooperation. For cooperation to develop, interaction will have to be continuing. When interaction is continuing, reputations will be formed. Behaviour of an actor in the past will be used by other actors to predict his behaviour in the future. Reliable actors will search for one another and cooperate. An actor who did not cooperate in one game will harm itself since other actors will not easily try to cooperate with that actor again. So, to put one's reputation at stake might be an effective means.

8.3. Heterogeneity

Cooperating actors may differ in their common and secondary interests and in their capacities and means. With respect to interests, it may be concluded that the actors should share the common interest. However, the degree to which they have an interest in furthering this common interest may differ. The larger this difference, the more difficult it will be to achieve effective cooperation. On the other hand, this difference may not be such, that Mancur Olson's presumption of a privileged group (see : Logic of Collective Action) will be met. In that situation, there may be an actor who will produce the common good independent of the efforts and behaviour of other actors. For the model to be valid, therefore, the following (fifth) assumption should be added :

Assumption 5 :	No actor has such a disproportionate interest in achieving the common interest that it will try to produce the common good independent of the behaviour and contributions of other actors.
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The secondary interests may differ both in degree and direction. They may even conflict. The more these interests differ, the harder it will be to achieve cooperation. Actors may not only differ in their interests, but in their abilities and capacities as well. They may differ in, for instance, expertise, experience, and information. The more this is the case, the more difficult it will be to achieve effective cooperation.

8.4. Size of the group

To realize the common goal, actors will have to cooperate. The number of cooperating actors does influence the cooperation. A small group has advantages, since a larger group requires more coordination, more organization, and hence, is more expensive. Besides, in a large group, free rider behaviour is more attractive.

8.5. Costs and benefits

Cooperation between actors results in costs and benefits for the group, C_g and B_g . These may be distinguished in provision costs and production costs and may be influenced by several variables. Provision costs are, for instance, coordination costs and organization costs. If the costs/benefits ratio is more negatively, it is likely that cooperation to further the common interest will be more difficult to achieve. The larger the number of cooperating individuals, the more organization will be needed and, hence, the higher the costs before anything of the common good can be provided.

8.6. The problem

The effort an actor puts in the development of cooperation is dependent of the problem itself as well. Firstly, an actor has to perceive a situation as a problem. When an actor does not perceive a situation as a problem-situation, he is likely not to contribute to cooperation furthering management of that particular situation (achieving a common goal). Secondly, when he does perceive a situation as a problem-situation, the perceived urgency of the problem is of influence. The more urgent a situation is according to the actor, the more

intense the actors will try to solve the problem. Consequently, the more urgent a problem, the more likely cooperation is to develop.

8.7. Stability of the group

The group cooperating actors may be stable or not. When the composition of the group is unstable and frequently changing, members of the group will not easily learn to know each other. Interaction will decrease and reputations will not be easily formed. This will hamper the continuance of cooperation.

8.8. Design principles of organizations

If cooperation to manage a common good is developing, an organizations will develop. Several rules should structure the cooperation to increase the chances for an effective cooperation. Simply and solely rules, however, do not guarantee cooperative behaviour. Without specialists who monitor and interpret the rules the rules become meaningless. In "Governing the Commons" Ostrom presents a set of design rules that help to account for the success of institutions in sustaining common pool goods.

8.9. Propositions

The above presented theoretical notions may be used to derive some propositions.

Proposition 1. The larger the size of the group, the (bigger the chance for) more heterogeneity.

Proposition 2. The larger the size of the group, the smaller the (chance for a large) expected stability of the group.

Proposition 3. The larger the size of the group, the (bigger the chance for) more costs (and thus, a more negative costs/benefits ratio).

Proposition 4. The larger the size of the group, the less (the chance for) effective cooperation.

Proposition 5. The more heterogeneity in a group, the (bigger the chance for) more costs (and thus, a more negative costs/benefits ratio).

Proposition 6. The more heterogeneity in a group, the less (the chance for) effective cooperation.

Proposition 7. The larger the expected stability of the group, the (bigger the chance for) less costs (and thus, a more positive costs/benefits ratio).

Proposition 8. The larger the costs in proportion to the benefits (a more negative costs/benefits ratio), the less (the chance for) effective cooperation.

Proposition 9. The larger the expected stability of the group, the (bigger the chance for) more interaction and known reputations.

Proposition 10. The larger the expected stability of the group, the better (the chance for) effective cooperation.

Proposition 11. The more interaction (and known reputations), the better (the chance for) effective cooperation.

Proposition 12. The more serious a problem, the better (the chance for) effective cooperation.

Proposition 13. The better design-rules are implied, the better (the chance for) effective cooperation.

The character of the propositions is relative. Consequently, to test them, a single case study would not suffice. Several case studies, or a survey, should be executed and related with one another. And even then, testing the propositions will not be easy, since the importance of the variables compared to other variables may differ. Theoretically then, to test the propositions and the relative importance of the variables, a multiplicity of case studies should be executed. And the variables need to be operationalized. In this research, however, it is not the testing of the propositions which is the subject of study, but the elaboration of the model. Therefore, an exploration of a case will be executed. The model will be used as a tool. In the next paragraph, the case of Twente will be described and developments will be explained using the model. The variables of the model will be used to describe the case of Twente and, when possible, the model and its relations will be used to explain some developments in this case.

9. Case : the model used

9.1. Introduction : collective action problems

In the Dutch regions, the municipalities do have a common goal with respect to transport. This is the improvement or keeping up of accessibility and livability (and safety). Their transport networks are congested and their environment is affected. However, differences do appear between the regions in the Randstad Holland (the western, most urban area of

the Netherlands) and more rural areas. To achieve this goal, a regional transport plan has to be realized with respect to the management of their regional transport network. Formulation of this plan and regional acceptance of this plan will result in financial means, awarded by the central government. Therefore, to formulate this regional transport plan, the municipalities have to cooperate with one another and with the province (a higher administrative authority) as well. These actors have to interact and are interdependent on the one hand and autonomous on the other hand. Consequently, in these cases collective action problems with respect to the management of a common good are at stake.

9.2. The case : the region of Twente

Twente is a region in the eastern part of the Netherlands, counting about 600,000 inhabitants and a surface of 1300 sq. km. The centre of the region (3 larger cities) is urban, its environment has a more rural character.

Most municipalities state that their interactions with other municipalities have increased since the beginning of cooperation. At the start of the cooperation, most municipalities hardly had any contact with other municipalities. This was more the case for the officials than for politicians. Reputations could hardly be established on the base of facts. Nevertheless, municipalities had formed an image of other municipalities and their behaviour. Rural municipalities thought of urban municipalities as being selfish and dominant. Cooperation led to more interaction, and, consequently, to more objective reputations. The reputation of several actors did impair cooperation. For instance, the province was considered increasingly as being an actor trying to increase its power and influence at the expense of the municipalities. Therefore, municipalities tried to reduce the influence of the province as much as possible. On the other hand, cooperation between municipalities improved. During 1994 and 1995, however, the central policy changed, and this resulted in a change in the structure of cooperation. The province left the game and although the other formal actors in the cooperation process did not change, new representatives of these actors entered the game. This really has impaired cooperation. At first, interaction decreased and new reputations had to be formed.

The municipalities do differ in capacities. Rural municipalities do have a lack of information, have less officials available and cannot spend as much time and efforts in cooperation with respect to transport matters as larger urban municipalities can. As a result, the rural actors have less insight into the nature and size of the problem and do not consider cooperation to be very necessary. The difference in expertise between the representatives of the municipalities resulted in many time wasted on information exchange.

Secondly, municipalities have different interests. They succeeded in realizing a regional transport plan. The mentioned main goal of this plan is very broad, however, and can be interpreted any way. When this broad goal will be defined more precisely, the different interests are likely to become more apparent. The rural municipalities do not have accessibility problems and are not willing to take measures to reduce car mobility because according to them no transport alternatives are presented to the mobilists. These municipalities demand an improvement of public transport and livability. The rural municipalities did not feel very concerned with regard to the transport region. They considered the transport region a matter of the urban municipalities in the first place. And

consequently, they did not put many efforts in the cooperation. Many rural municipalities behaved very passively. And before the transport region appeared, generally they even did not have any integral transport policy. The urban municipalities, on the other hand, fear a loss of (buying) customers if rural municipalities do not adopt a car reducing policy. Besides, they are confronted with a deteriorating accessibility of their inner cities. And although they do not perceive these problems as very urgent at the moment, they are the opinion that these problems may increase in the future. The urban municipalities in Twente consequently were the initiators of the cooperation. In Twente, the differences in interests between more urban municipalities on the one hand and more rural municipalities on the other resulted in rural municipalities cooperating to oppose urban municipalities. The rural municipalities feared that all financial means should be invested in the urban area (where the problems were more acute than in the rural area).

In fact, two situations may be distinguished. The first situation is the situation prior to the start of the cooperation, in which no transport plan was available. Common aim of the actors was the realization of such a transport plan. They succeeded, although the plan could be considered to be broad. In the second situation, the transport plan has to be worked out and choices had to be made about where to invest financial means. In that situation, a list of priorities had to be made and hence, the furthering of the common goal resulted in more competition between municipalities furthering its secondary goals. Every municipality wanted to profit and desired investments in its own municipality. Heterogeneity became more apparent. These findings may be considered to be supporting the proposition that, as heterogeneity increases, cooperation will become more difficult.

In the situation till 1994/1995 21 municipalities, the province and a representative of the central government were formal members of the cooperation. Now, 23 municipalities cooperate. Concludingly, the size of the group did not change fundamentally, but the composition did.

Generally, it can be stated that participants do not have a clear view of the costs and benefits. The outlook of getting financial means in case a regional plan could be realized did influence the cooperation. By cooperation, the actors expected to get financial means of the central government. The moment it became clear that the size of these financial means was considerably smaller than expected, the stimulus to cooperate decreased. The costs/benefits ratio seemed to be not as positive as had been expected. Participants failed to appear more often. The recent policy of not demanding a regional accepted transport plan as a requirement before transferring financial means to a region probably will withdraw another impetus to cooperation. Besides, with respect to assumption 1 it can be stated that urban municipalities had a more positive perception of the costs/benefits ratio than rural municipalities had. These findings seem to support the presumption that a more negative costs/benefits ratio does negatively influence cooperation.

Most municipalities consider the problems with respect to accessibility and livability as not being urgent. They do not fear large problems in case no measures are taken. In addition, they perceive the problems in rural areas as different from the problems in urban areas. Cooperation is not considered to be necessary, and because problems are not considered to be urgent, municipalities are not stimulated to put many efforts and energy in cooperation.

The change of 1994/1995 resulted in a change of the group of cooperating actors and in a change of the representatives of the actors. This resulted in a deadlock for over half a year during which no progress was made (in fact, the contrary). At first interaction decreased and (representatives of the) actors had to learn to know one another again and to build new reputations. The group before and after the change itself may be considered to be stable. The fact that the change of the group resulted in a deadlock may support the proposition that the larger the stability of the group, the more effective cooperation may be. Besides, as stated above, the change resulted in a decrease of interaction and the need to build new reputations. Consequently, this may support the proposition that the smaller the stability of the group, the less interaction and reputations. And consequently, the smaller the less effective cooperation.

With respect to the recommended design principles, it can be stated that at the moment these principles are met to a low extent. Municipalities are not very willing to yield rights to a regional authority. A specialist monitoring and interpreting the rules is not present yet. The cooperation with respect to transport policy is more and more organized in multiple layers of nested enterprises. More negative might be the role of the central administrative authority. The central government is important since it controls the financial means and it decides about the administrative structure of the state. As described in paragraph 3, the future of the organizational character of the region is very uncertain. This may impair cooperation. And this already happens to be the case. This uncertainty does negatively influence the region in their efforts to cooperate. The municipalities in Twente succeeded in realizing a regionally accepted transport plan. However, the formulated main goal is very broad and not precise. Besides, consensus about the priorities and the division of the available financial means among the projects (and hence, municipalities) has not been realized, although several proposals have been considered. This may be the result of a change in the character of the cooperation. The acceptance of a regional transport plan is in the interest of every actor, since it would result in financial means. The second step, the division of these financial means, however, results in an interdependence which is perceived as being negative. Every actor wants to receive financial means in order to invest them in his municipality. And they do not consider the investment in another municipality as being in the common (and, hence, their own) interest as well.

10. Theory : reflection and outlook

The preceding sections have given an overview of some theoretical notions on cooperation with respect to the management of (regional) transport systems. As may be concluded from the theoretical examinations of the cooperation in Twente, the theory seems useful in describing cooperation. The theory offers a systematic model containing variables that are of influence with respect to cooperation to further a common interest.

In the continuation of the study several cases will be studied. The theoretical notions shortly presented in this paper will be used and variables will be operationalized. Besides, the gained experiences with regard to the transport region of Twente will be used. Aim is to perfect a systematic model which can be used to describe and explain cooperation (in transport regions).

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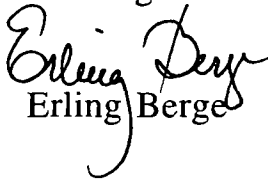
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PAPERS FROM IASP CONFERENCE IN BERKELEY 5-8 JUNE 1996

Enclosed, please find four papers presented during my session European
Commons (Session I Room 102 Wednesday 8:00-9:50)

The fifth presentation by Maxim Lobovikov contained comparative
observations of US forest service and the Russian management of forests, but
no paper was written.

Best regards


Erling Berge

INTERNATIONAL ASSOCIATION FOR THE STUDY OF
COMMON PROPERTY

"Voices from the Commons" conference, 5-8 June 1996
Clark Kerr Campus, University of California, Berkeley

CONFERENCE PROGRAM

WEDNESDAY, 5 JUNE 1996:

Conference Registration (12-7 p.m.) and Welcoming Reception (6:30-8:30 p.m.)

Welcome: Gordon Rausser, Dean, College of Natural Resources,
Robert Gordon Sproul Distinguished Professor,
University of California, Berkeley

THURSDAY, 6 JUNE 1996:

SESSION I (8:00-9:50 a.m.)

Room 102: EUROPEAN COMMONS

Panel Chair: Erling Berge

Common Forests in Urban Industrial Society, Lars Carlsson, Workshop in Political Theory and Policy Analysis, University of Indiana, Bloomington, Indiana, USA

Comparing Commons in Norway and Sweden, Erling Berge, Department of Sociology and Political Science, University of Trondheim, Norway

Common Property Under the Transfer to a Market Economy: Lessons of Soviet, Practices of Common Property Management, Janis Abolins and Arnold Ubelis (co-authors), Faculty of Mathematics and Physics, Riga, Latvia

Land Tenure Reform in Former Soviet Central Asia: Insights from the New Institutionalism, Robin Mearns, Institute of Development Studies, University of Sussex, United Kingdom

Development of Forms of Forest Property in Russia, Maxim Lobovikov, Environmental Science, Policy and Management (ESPM), University of California, Berkeley, California USA

Room 104: COMMUNITY FOREST MANAGEMENT I (Using Maps to Negotiate Local Issues with National Agencies (PANEL DISCUSSION))

Moderator: Henry Carey, Forest Trust, Santa Fe, New Mexico, USA

Panelists:

Martua Thomas Sirait, World Wildlife Fund, Indonesia
Lucy Moore, Western Network, Santa Fe, New Mexico, USA
Shirl Crosman, Forest Trust, Santa Fe, New Mexico, USA

Enclaved