

MEASURING THE SOCIAL RELATIONS:  
SOCIAL DISTANCE IN SOCIAL STRUCTURE  
— A STUDY OF PRISON COMMUNITY\*

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Social relations and their influence on various phenomena are one of the key issues not only in sociology. The crucial problem, however, is how to measure the social relations and their implications in society. We try to adapt a physical perspective to the “typical” sociological analysis and to measure the qualitative nature of human community adapting the category of social distance. This category is used to explore the properties of social relations in the structure and the communication system of prison community. The issues that are discussed: the specific properties of social relations as the constitutive factors for different type of group structure and type of communication. How the elementary social networks (short-range group structures) form the dynamics of prison community? What is the role of the numerical force of the group for prison community? Is there the interplay between the microstructures and macrostructures? The work is based on our research carried out in 17 prisons in Poland in 2003, 2004 and 2005. There were about 2000 prisoners in the sample.

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### 1. General remarks and basic questions

Social relations are one of the main objects of analysis in sociology. Relations are regarded as a very social phenomenon, as they are happening between individuals. Social relations constitute social dynamics. The emergence of social structure and social order is due to social relations.

What is a social relation and what meaning does it have in society? This banal question leads to fundamental issues in sociology; the social relation

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is the fundamental notion that points out the interpersonal dependence and its consequences.

The purpose of the article is to examine how the social relations (inter-subjective interactions) form the dynamics of prison community and how the social macro-system influence the micro-system and the individuals. The specific properties of social relations are the constitutive factors for different types of groups and behaviours of people.

To explore the social relation is of great importance at least for two reasons. It allows to explain the dynamics of a social system (how the individual interactions, micromotives shape the social system), and the influence of the macro-system on the individuals (how the social system shapes the micro-world). The local interactions (micro-level relation) are the micro-foundations of macropatterns at the relational level [1, 2, 4].

Without explaining the dynamics of social relations one cannot understand the variety of social forms and the processes that construct the social reality — from formless aggregation of individuals to structure such as the social group. The social structure is built on social relations. It is through social relations that social phenomena exist. What is important and should be measured is the structural relation which creates the collective forms of social world and the social ties.

The aim of the article is not the description of the prison in Poland and its changes itself, but the problem of measuring the social relations. The prison is an example of certain social phenomenon. We would like to use it to discuss methodological and theoretical problems of measuring the social relations that are shaped by different variables. A description of the prison is simplified for that purpose.

Relations are the major objects of analysis, especially relations in short-range group structures. Three particular areas are explored:

1. specific social relations in the prison community,
2. the influence of the macro-system change on the relationships in the prison community (connection between macrostructure and micro-structure), and
3. the spontaneous collective action — the hunger-protest of prisoners that took place in several prisons in Poland, starting in the prison in Wołów in May–June 2004.

Some “old” sociological controversies must be pointed out because they seem to be still “new” for sociophysics: first, the individuals are treated as atoms, agents, whereas for sociologists individuals are always the members of social groups. It means that the actions are determined by many variables of the group, such as structure, power and control, norms, social ties and others.

The measuring of social relations in sociology is not simple because the relations have the quantitative and qualitative aspects at the same time. The very well known issue in sociology is how to combine the quantitative and qualitative measure successfully. As social relations are multidimensional, the “simple” analysis of social relations in a group should consider such variables as:

- the size of the group,
- the type of relation (mutual and non mutual relations, unilateral, bilateral, multilateral relations),
- recurrence, durability and stability of relations,
- the formal and informal aspects of relations,
- the communicational aspect of relations,
- the power, dependence, and control as the dimensions of relations,
- the aspect of emotional ties, interest ties *etc.* of social relations (and much more).

It should be understandable why measuring the social relations provokes many difficulties. Besides, the social phenomena exist in different social order. That is why four levels of analysis should be taken into account in order to explain the social relations properly:

- individual interactions and social distance,
- microstructure: group level (interest group, subculture group),
- institutional level: the total institution community of prisoners and guards, formal aspect of institution,
- macrostructure: free market and the consequences of implementing it — the change of normative system, the competition, the changing law and jurisdiction.

We chose the prison community as object of analysis for four reasons:

1. Prison community takes the form of the specific type of the social system (it will be discussed later).
2. It is the microsystem based mainly on the face-to-face, close, and recurrent interactions of individuals.
3. It is the social system that has potentially strong control.
4. The prison is a kind of laboratory. It is closed and isolated system and for that reason it is easier to explore the social relations.

## 2. The social relation and the social structure

The first important issue, obvious for sociologists, is how the social interactions turn to relations and then generate the social structure. How do the relations create the social structure of the prison community? One of the most distinctive examples of structuralisation is the process of group divisions in prison community. In general the prison community consists of two groups: the subculture group (*grypsujący*) and non-subculture group (not counting the administrative staff and guards). These two groups have two different and — to some extent — separate systems of group relations. They form different communication systems and social ties. The subculture group creates more distinct normative system that specifies their social relations. The structure is based on the differences in power, control and it is being created through the social relations.

This process is dynamic and that is why it is difficult to measure it in *status nascendi*, however, one can explain it observing the initial and final state of the group forming process.

The individuals who have no or very little relations are isolated and function outside the structure. Let us examine an example how the structure evolves from the relations of individuals on microstructure level (microfoundations). The main stages of the process are:

1. The initial state: individuals with no relations (it is worth to note, that abstract assumption can refer to empirical level because the prisoners are quite mobile and groups are often re-structured).
2. The frequent interactions generate relations of new quality: much stronger, more stable, namely, the social ties.
3. The structuralisation is based on creation of in-group and out-group. The individuals tend to contact with similar persons (different criteria of similarity might be considered as age, the type of crime, social background, economic status *etc.*) and avoid people perceived as different, strange.
4. The final stage: a group structure appears. It is based on face-to-face relations, mainly expressive ties (sociometrical structure) and instrumental ties (see Fig. 1).

### 2.1. Social relations and social distance

One of the first attempts to measure the social relation was the social distance scale by Bogardus. The scale was to measure the degree of attitude (warmth, intimacy, indifference, hostility) to social relationships with other people from the exclusion to very close relationship (kinship). The social distance was ordered as a continuum. The quantitative measuring the

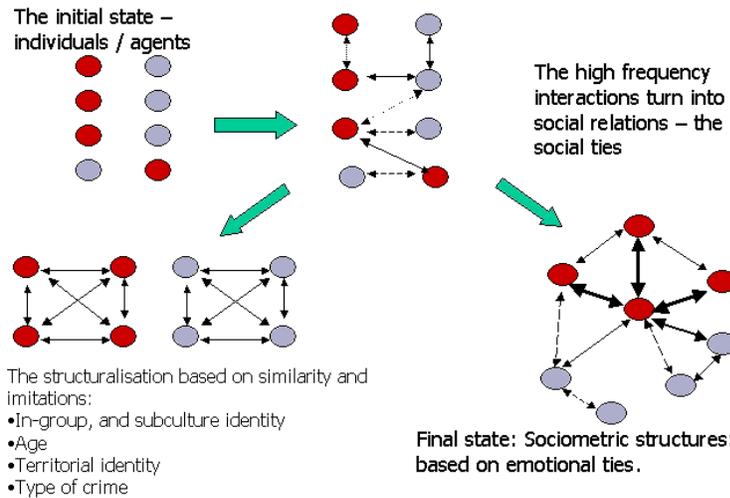


Fig. 1. The process of shaping the group structure of cell prison based on microstructure social relations.

relation is simply to count the frequency of behaviours; if we measure the relation between the group and the leader we simply measure the frequency of behaviours between the leader and the members of the group. The more interactions, the stronger are the relations, and of greater importance. Other aspects to be measured by frequency are, for example, conformity with the norms and affective ties which are generated during frequent and “positive” social interactions.

One can create the topology of social distance where frequency of interactions is “translated” into different types of relations on ordinary scale:

*No interaction — 0 distance unit — lack of relations*

*Seldom interaction — 1 distance unit — weak relations*

*Frequent interaction — 2 distance units — strong relations.*

**Threshold where a new quality of interaction and relation appears**

*Very frequent interaction — 3 distance units — social ties.*

Social ties develop not only by frequent interactions; first of all they are based on affective, normative and interest relations. To understand “the nature” of their relation it is not enough to measure just frequency of relations, at this point there is a need for more complicated measure. For example, the attitude of the individual to the norm based on relation needs the “soft measure” of the meaning of the norms for each individual. To what extent and why the individuals comply with the norms? It is important to explore the type of relation, to evaluate its strength and the impact of the relation on social life.

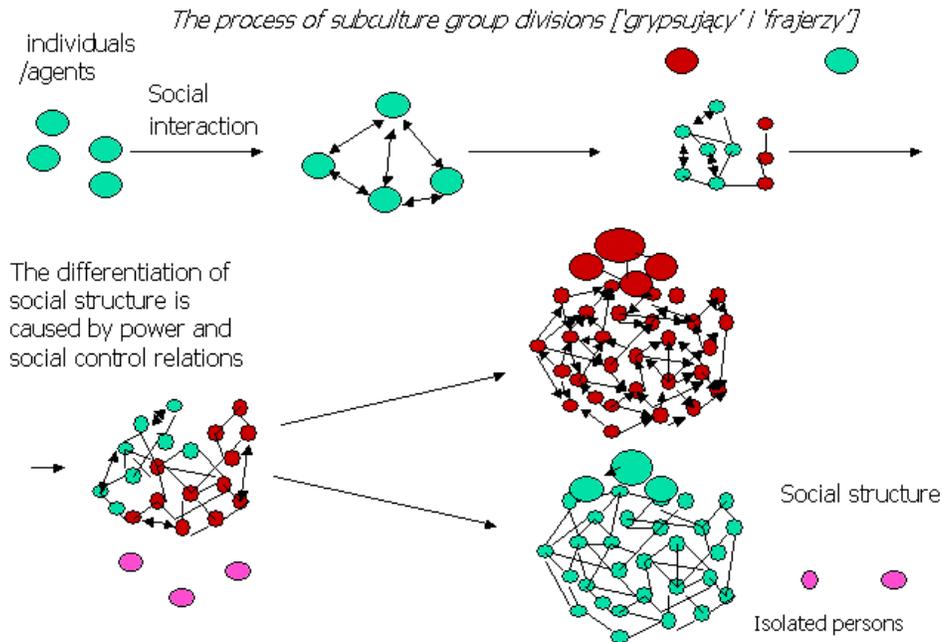


Fig. 2. Self-organisation of social structure: how do the social relations shape the social structure in prison? The process of subculture group divisions (“grypsujący”, “frajerzy”).

### *2.2. How to measure the relation as the differential interaction?*

There are many aspects of researching the social relation: normative system, power, interest, communication, expressive ties. Two dimensions of social relations will be discussed here: the normative and the interests (instrumental ties).

To explain the social relations one has to assume that there is a connection between the normative relations (*NR*) and interest relations (*IR*) and that the strength and type of relation is important and influences the individual decisions, actions.

The easiest way to measure those two aspects of relations is to compare their degree of influence on behaviour by using simple ordinary scale; this is the same way of measuring as Bogardus proposed. These three ideal types allow to measure the state of group relations: from solidarity and strong social ties to lack of social ties.

TABLE I

Normative relations(*NR*), interest relations (*IR*) and related three ideal types of state of group relations.

Comparison of the force of specific relation	Type of social situation describing the conflict between interest and normative relations
$NR > IR$	Strong social control, high level of compliance to norms resisting the norms is threatened by severe sanctions, high costs of individual interests if they are contradictory to the norms and common interest (conflict with the group), conformity with the norms is high due to socialisation of the norm, the normative consensus is at high level
$NR = IR$	social control is weak, lower level of compliance to norms; there is high probability of resisting pressure to conform in order to achieve the individual goals, nonconformity with the norms, low costs of individual interests
$NR < IR$	The lack of social control, no obligations to norms Individuals pursue their private interests

### 3. The macro-structure level. The influence of the macro-system change on the social relationships

One of the important issues in sociology is the connection between the micro level and macro level of society, and this is analysed here. The concern for individual actions should be combined with an appreciation for the structural constraints which participants face.

Let us make an assumption that the social system shapes the individual behaviour. This is the micro relational perspective — from the top down. Macrostructure influences the particular institutions and individuals who adapt to the new environment. How does it work? For a particular individual the influence of macro system means to face the external restraints, conditions *etc.* to which he must adapt. This attitude is useful when we explain particular case where an individual meets the constraints of the social world; for example a person who enters the prison meets the whole range of variables that determine the possibility of action. Of course, not every social environment is as much restricting as total institutions are. The macro level (*e.g.* structure, norms) shapes the individual actions and the individuals respond to the experience through reinforcement learning [1]. Social system is a set of variables which determine individuals' actions.

The free market economy and democracy introduced in 1989 in Poland changed the rules of social action in society and transformed the specific social system in prisons, as well. The transition to new social system is of course very complicated, here we would like to discuss only some issues: How did the normative system change? How did the social relations change? What is the meaning of social relation after the change? When competition displaces the cooperation?

The increase of social mobility in society changes the social structure. Social mobility changes the social relations, as well, if mobility increases, social relations become weaker. Such a process undermines the normative system in a particular group or community. Thus, the external factors of the macro system determine the individual relations in the prison community. They define the conditions of social actions for individuals (make constraints, possibilities *etc.*) and define the criteria of calculation: the dilemma “to be a man of honour or to conform to institution in exchange for freedom” suggests the course of the changes. The economic factors become more important as they stimulate the individual behaviour and at the same time constrain it.

TABLE II

Some characteristics of totalitarian and free-market prison.

Totalitarian prison	Free-market prison
The restricted system of institutional control	Less restricted system of institutional control
The limited access to the material goods	wider access to goods; the more money one has the more goods can acquire
The high level of deprivation of economic, social and psychical needs	The social status of individual depends on one's socio-economic relation with other member of community
The group interests and individual interests converge	The social distance in hierarchy increases. The differences in socio-economic status have great impact on relations.
The mobility in population of criminals is little	The individual interests and group interests are in contradictions
	Each individual has more freedom comparing to the totalitarian prison ( <i>e.g.</i> more rights, privileges, less control, less severe punishment, <i>etc.</i> ),
	The social mobility population of criminals increases (new kinds of crime)

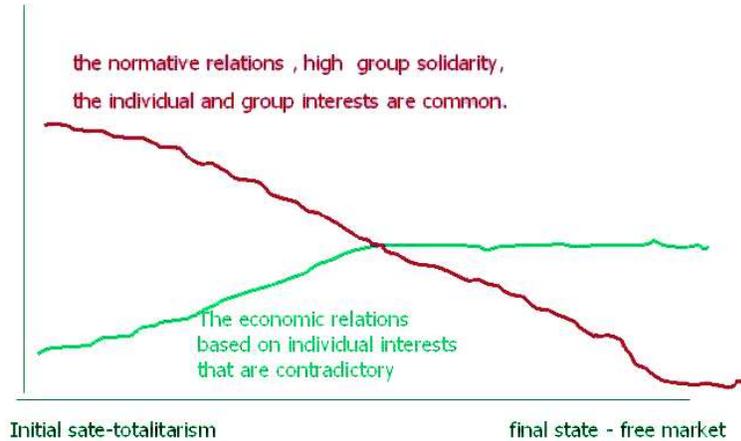


Fig. 3. Social change: the process of disintegration of subculture group in prison community.

To understand the changes of the social relation one has to consider the conditions of imprisonment (model of prison) during the totalitarian period. The prison reflected the rules of the totalitarian system: the limited access to all goods, the high level of restrictions, and control, and the high level of violence, economic and social deprivation. The specific social relations were the result of such a hostile social environment: high level of in-group solidarity against the institution, the guards, very strong social norms and social control, the wide range of common interests of individuals and group.

As a consequence the in-group relations are strong, create strong both interest ties and expressive ties and intensify the group solidarity and coherence [1]. As it was already mentioned, all those processes are based on social relations. The free-market environment stimulates decreasing of the group solidarity and increasing pursuit of their individual interests (especially economic wealth and material possessions counts) [1]. Table II contains some characteristics of the two models of prison.

The point is that these external factors (variables) of the macro-system stimulate the change of social parameters of relations and support different social system in prison. So to speak, the social system of prison reflects the parameters of macro-system — see Table III.

### 3.1. The change of social relations

The comparison emphasises the connection between macro level and micro level and the way they shape the social relation. The macro social environment changes total institution and shapes the social relation within it. To measure these relations is to capture a wide range of behaviours

TABLE III

How social system of prison reflects the parameters of macro-system (see Fig. 3).

Social parameters of relations in:	
totalitarian prison	free-market prison
<ul style="list-style-type: none"> <li>• High level of group solidarity</li> <li>• The strong social ties (expressive and interest) in risk and threat environment</li> <li>• Strong social ties/ relations</li> <li>• The strong division of population for interest groups</li> <li>• High level of in-group integration especially within subculture group.</li> <li>• The strong normative system and strong social control</li> </ul>	<ul style="list-style-type: none"> <li>• Low level of group solidarity</li> <li>• The reciprocity norm becomes weaker / there is less support for reciprocity</li> <li>• Weak social ties/ relations</li> <li>• Population is dispersed</li> <li>• The number of members of the subculture group decreases</li> <li>• The relations among individuals are based in high degree on economic interests</li> <li>• The normative system weakens as the economic relations become stronger</li> </ul>

and beliefs of people who participate in the new type of total institution. A questionnaire, the typical sociological tool may be used for that purpose. An example: a change in law regulations determines the change inside the prison — the democratisation: *e.g.* more rights are respected, there is a more favoured attitude towards prisoner *etc.*

### 3.2. *The process of changing the normative system*

Let us analyse the process of changing the normative system. If it is the bottom up process then the imitation of behaviours conform to the norm is important [3]. The normative order exists in consequence of high level of conformity and strong social control. If the frequency of non-conformist behaviours increases the normative order is threatened, consequently the process of transformation of the normative system may begin and a new normative system or a state of anomy appears. An interesting problem is the dynamics of conformist behaviours: where is the threshold at which the system may collapse? It is difficult to estimate the frequency of actions

that threatens the stability of social normative order precisely. Though the majority usually has a great impact, we must remember that it is not always the majority that accounts for the modification of the normative order. Thus, the frequency of the particular type of behaviours of individuals (conform or non-conform to the norm) is the key point of the change. This process of the change of social normative system is presented in Fig. 4.

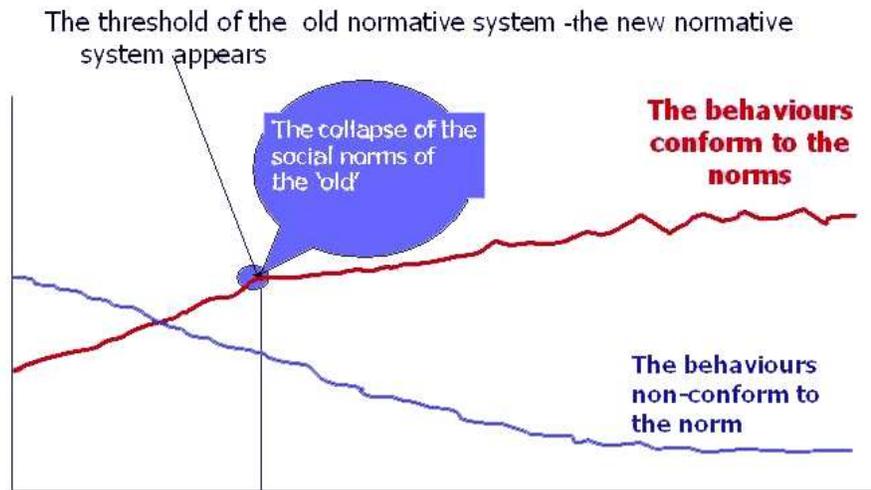


Fig. 4. Microfoundations of (individual actions) the change of relations and the change of the normative system.

#### 4. The dynamic of social system: the hunger protest

*The hunger protest took place in May–June 2004 in several prisons in Poland. It started in Wołów prison and the direct reason was overcrowding of cells. When protest evolved more demands appeared. Within about a week several prisons in Poland joined the protest. After negotiations both sides in Wołów prison compromised and the protest ended. The total number of prisoners who took part in it officially reached 2320 in 10 prisons.*

This phenomenon is an excellent example to explore the two dimensions of social actions: the spontaneous, *bottom up* actions and the organised, planned *down to bottom* collective actions. The question is how the individual actions and decisions create a collective action such as a hunger protest? It is an appropriate case to research the dynamics of the individual actions within population. Firstly, because the protest as a collective action is the result of conformity of individuals. Secondly, it allows to explore the role of social distance and relations in the spreading of inter-subjective social phenomena. Also it allows for analysing other social variables, such as structure

and normative system. The relations among the individuals are not random; joining the protest is conditioned by several factors, not only by conformity to the norm (see Fig. 5). The behaviour and social relations are strictly interrelated in this process. An important assumption here is the rationality of the individuals who follow their interest and in order to achieve their goals they conform or not [1]. A model for possible behaviours is in Table IV.

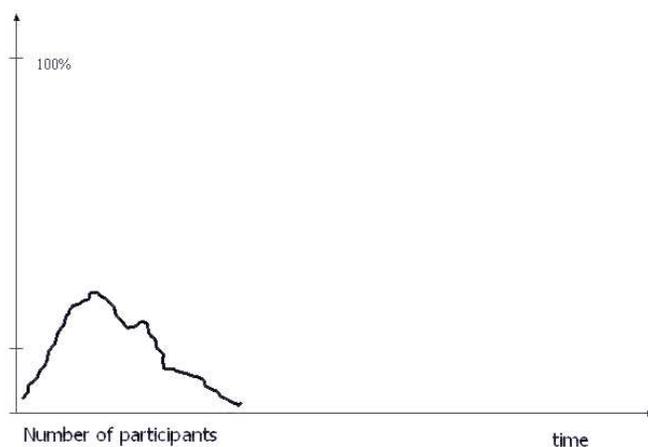


Fig. 5. Evolution of protest behaviours in prisons in Poland, May 2004.

TABLE IV

Hunger protest — number of participants in 10 prisons. (Source: Statistics of the Polish Ministry of Justice, CZSW, December 2004.)

Prisons where the protest took place	Number of participants
AŚ Toruń	35
ZK Bydgoszcz Fordon	50
ZK Czarne	63
ZK Pińczów	38
ZK Kamińsk	320
ZK Gębarzewo	25
ZK Wronki	594
ZK Głogów	236
ZK Kłodzko	364
ZK Wołów	595
Total number of participants	2320

TABLE V

A model of possible behaviours on individual and group level.

What to do?		
Level of analysis what influences the be- haviour?	To join the protest	Not to join the protest
<b>Individual level</b>	Sentence length: Long	Sentence length: Short
The interest of particular individual	The low possibility of parole	The high possibility of parole
Decision as the result of calculation of costs and gains	Individual attitude and motives: lack of cooperation with personnel of the institution, Non-conformity to institution (prizes and punishments)	Individual attitude and motives: cooperation with the personnel of the institution Conformity to institution (prizes and punishment)
<b>Group level</b>	Strong social control	Weak social control
Social control of the dominant group opinion — conformity	Dominant opinion of prison cell, or neighbouring cells is to join;	Dominant opinion of prison cell, or neighbouring cells is not to join;
Collective actions, group interest	High social status in the structure of the group, community: leaders	The low position in the social structure of prison group, community structure
the inner relation of the group	Being a member of subculture group (grypsujący) — strong social ties;	The low position in group, community structure
The structure of the group		
Social identity		Lack of membership in the subculture group
social ties with the group		weak social ties

#### 4.1. Measuring the social relations

The relations of social exchange create social community in prison that forms the social ties. Besides “simple” frequency a meaning of relations must be measured (meaningful relations, mutual relations). For instance: the important social relations of exchange generate the set of social roles and positions and in the result social structure emerges. The differences in power of the individuals are important as an element of the structure. They can be measured by the degree of influence on behaviours of other individuals or possibility of the influence. The subjective estimation of authoritativeness of the particular member of the group might be important. Measuring the power is more difficult in informal group because the influ-

ence reveals, through the attitudes, relations of group members, and is not manifested in formal regulations. In that case the knowledge of the group members is an important source of information. The degree of the influence on the opinions may be measured on ordinary scale in a questionnaire.

It is obvious that the simple rule of conformity to the dominant type of behaviour is the main mechanism of collective actions [3]. It is quite easy to measure this kind of social relation just by frequency of the events which are indicators of social process: conformist behaviour forms the minority or the majority, and their mutual relations might be crucial for developing the collective protest.

The bottom up mechanism constitutes dominant collective action [2]. It is the matter of dynamics of imitation behaviours whether the protest expands or collapses. It is obvious that the force of participants depends on their number (see Fig. 5).

Measuring social relations cannot rely only on frequency of behaviours. The researcher should consider the leader of the protest, and the opinion leader because they have power to induce the collective action. So the course of the protest depends not only on the number of participants but also on the strength of the leaders who may influence the mass behaviour. Besides, the frequency of particular event is the indicator for other concealed social processes. The protest has also the other, more hidden side. It is a social situation which is a game of power and control. So the measure should be taken on the structure of the community and the distribution of power, the set of goals and values, *etc.* From this point of view such a protest turns out to be less spontaneous and more organised collective action. There are, of course, unaware or naive participants who believe that ideas only are the reasons for their action. Ideas allow the leaders to organise protest at the lowest possible cost: the loyalty to the norms allows them to control participants' behaviour. Frequency of behaviours alone cannot explain why the protest started in that particular prison. Why did only few other prisons joined the leaders of the protest in Wołów prison? Did it matter who started the protest?

The protest is happening within particular network of social relations that determine it. The measure of relations may be at the beginning based on the number of individuals that perform conformity but it is not satisfying explanation for a sociologist. The interest and power relations support such an organised protest. The process of forming the opinions should consider the differentiation of the beliefs. The particular category of prisoners started and organised the protest: namely those with long sentence, members and leaders of subculture groups, from the prison where many persons felt their interest was threatened (see Fig. 6).

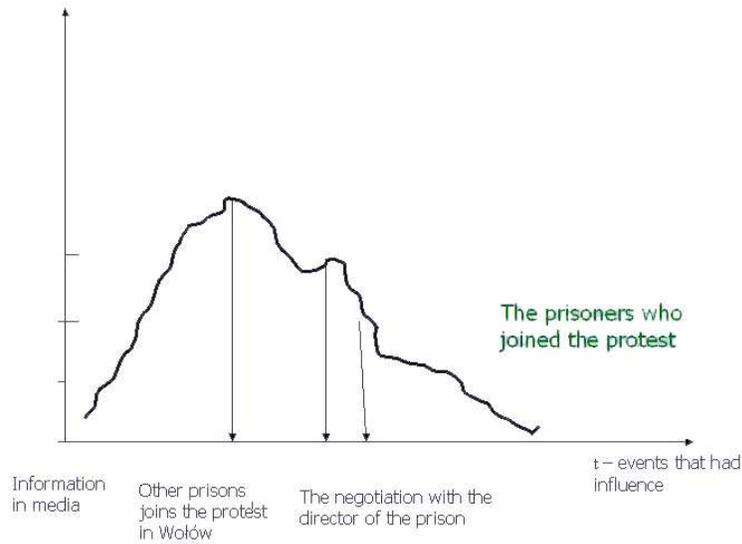


Fig. 6. The course of the hunger protest in Wołów prison: the protest behaviours.

Opinion is usually measured on ordinary scale, or nominal scale. The respondent has to judge the meaning of the protest, justify their subjective decisions, make calculation that stands for the final decision. The result of the measure is the graduation of the strength of the attitude, opinion, power, interest or typology of attitudes, relations, or type of power *etc.* The attitudes measured can be ordered as a continuum of social distance. The attitudes range from *not to join the protest* to *join the protest*. If we can measure opinions and intentions of behaviour then we understand better the collective action, which is not only simple imitation of majority behaviour. Why do we need a broader explanation? Analysing how the protest was evolving is an interesting task, it shows that collective actions are not as simple as riot or mob actions.

Firstly, the law-like regularities of human behaviours are usually conditioned by many variables, and secondly, making an opposition of relation *solidarity relations versus rational egoistic relations* seems to be inadequate. The collective action may fail in spite of interest of the leaders, and individuals who are regarded as rational egoists decide to join the collective action to pursue the common goals [1]. The protest that happened in several prisons in Poland proves that not every prisoner joined the protest, and in fact it was the minority who took part in it. Thus, the circumstances of the spontaneous collective actions are in fact the set of conditions where the individuals as members of the group, community and institution make the choices, analyse the situation, and calculate. Each individual participated

in different group and had different relations. The number of advocates and opponents of the protest within particular prison fluctuated and it depended on temporary interpretation of situation in the prison, on information presented by the media, and contextual variables such as make-up of prisoners in cells, attitude of guards and penitentiary officers. Thus, the protest was shaped both by microlevel (spontaneous behaviours), and by macrolevel — it was planned and organised by leader who had particular interest.

Concluding, exploring the dynamics of these collective action proves that the social relations are the important factors of collective actions, and researching collective behaviour should consider both microlevel and macrolevel perspectives.

### 5. Conclusions

Exploring social relation enables to research many different social phenomena which are the result of relations. Two main perspectives must be used for measuring (*e.g.* researching social relations — microfoundations and macrofoundations). If we take into account individual actions we can explain spontaneous behaviour, or calculative behaviour.

The theory of calculative individual actions is well known in rational choice theory, game theory, and socio-physics, as well. Most sociological analyses assume that human actions are intentional, or planned and also calculative. The important task would be to take account for transactional relations in specific prison community in order to reconstruct the network of social relations especially that of transactional, exchange relations.

Researching (measuring) the social relations allows to analyse the dynamics of social systems. The important idea of combining the micro and macro analysis gives possibility to find the common language for socio-physics and sociology. These problems are unlikely to be resolved without considering the effect of relational structures upon individuals.

The article is mainly based on my research held in 17 prisons in Poland from 2003 to 2005.

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