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*Jani Erola*

*A REMEDY WITH RATIONALITIES*

*Improved Rational Action Theory with Empirical  
Content as a Solution to the Fallacies in Sociology*

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## Abstract

The starting point of the thesis is the assumed crisis of sociology that has been observed both as the gap between theoretical and empirical studies as well as the problems in the integration of individual and social levels of explanation in an adequate manner. Both of these aspects are reflected in the two groups of fallacies in sociology – according to which, explanations involve either too strong social- or too strong individual-level explanations.

First, discussion about the fallacies in sociology is described. Then the problems following these fallacies are illustrated with an example from a study of overindebtedness. An empirical example of how some of the problems following these fallacies could be avoided in the case of overindebtedness is then presented by applying the “*Finland 1999*” -survey dataset.

After that a more profound theoretical base is outlined in order to avoid such fallacies. This is achieved with a critical examination of rational action theory and the modification of it accordingly. It is suggested that one should get empirical content to the theory and actually measure the type and variation of rationality of action. This is then performed by applying both the “*Finland 1999*”-dataset as well as the “*European Values 1999/2000*” -dataset.

The theory and empirical content derived from the “*Finland 1999*” dataset is applied to the analysis of the explanation of overindebtedness, the micro-base of social mobility, rational decision of having children and incentive and disincentive effects related to working, especially in relation to the “working poor” phenomenon.

The rules for the application of rational action theory in the social sciences are outlined in the conclusion.

**KEYWORDS:** Rational action, ideal types, fallacies, crisis of sociology, overindebtedness, social mobility, having children, incentives, working poor



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# 1 INTRODUCTION

According to many sociologists, sociology is full of problems. It is believed to be in trouble both compared to its past achievements as well as compared to the other sciences. It is felt that sociology has lost its position as the crown royal of all sciences, although it is very unsure whether that has ever been its position.

These concerns are not new among sociologists. In fact, as far back as three decades ago, Raymond Boudon ([1971]1980, 2-9) claimed that sociology is characterised by a continuing crisis, both because of its character to develop hand-in-hand with each crisis in society as well because of its epistemological, internal weaknesses. A year before, Alvin W. Gouldner had published a whole book about the *coming* crisis in sociology (Gouldner 1970). The worry had been one of the topics on sociology's agenda for some time even before that. According to Norman Birnbaum, the crisis in sociology had been one of the salient topics of discussion in every sociological world congresses he had attended during the years 1953-75 (Birnbaum 1975).<sup>1</sup>

Against this background, the task of sociology that this thesis is meant to contribute to, finding a solution to the crisis, can be considered as a search for the Holy Grail. Like always among these quests, the most obvious goal of the search, finding the Grail, is almost necessarily determined to fail. But then again, the most valuable outcomes of the exploration are related to the search itself.

The aspects similar to the crisis discussion originating over three decades ago can still be found from much more recent discussion, for example, from the discussion about the problems of sociology concerning the inability to integrate theoretical and empirical research. According to this discussion, theoretically- and empirically-oriented fields of sociology have grown apart from each other; it seems to be that the experts on either side of these parts of sociology cannot or, even worse, *should not* say anything about the other field (see Coleman 1990, 1; Goldthorpe 1996). From the point of view of the “empiricists”, theoretical sociology is considered as the science of literacy, whereas according to the “theorists”, empirical sociology is seen either as positivism or

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<sup>1</sup> For other recent references, see Horowitz 1993, Giddens 1996, Fuchs 2001.

as a detailed but boring description of things (see Goldthorpe 1996; also Goldthorpe 2000; Goldthorpe 2004).

It is argued in this thesis, as it has been many times before, that one of the biggest problems in sociology, and in social sciences in general, is that the relationship between the individual- and social-levels of explanation are not properly understood or at least applied. It may be that the dilemma is not so much an epistemological one but merely a methodological one or at least such that could be overcome by assuming the latter (see especially Chapter 4, also Chapters 1 and 7). However, if this is combined with the problems of understanding the necessary connection of the theoretical and empirical arguments, as some seem to believe, it is not surprising to come up with the finding that the ways for the integration of the individual-, collective- and structural-levels of explanation in sociology have been missing. This is not so much because there have not been methodological and theoretical applications for that. However, if an allegory is used, one needs to understand the importance of both walls and a roof, as well as know how to use the tools in order to build a house. In a similar manner, integrating the individual-level with the social-level requires a proper theoretical solution *with* empirical content.

Why should a solution to the individual-social dilemma guarantee a solution to the crisis also? In Boudon's original text, four possible solutions for the crisis were proposed. The first was to find a general paradigm for sociology. Boudon argued that one of the main reasons why linguistics and economics were able to move from "(...) *a state of polymorphism to a tradition of linear research*" was that they were able to start applying such a theory (Boudon [1971]1980, 19). The second solution would have been to accept that sociology has multiple paradigms and to concentrate on improving only some fractions of them at the time. Indeed, some sociologists had speculated whether "polymorphism" was a general characteristic of sociology, and that a general theory could never be accepted. Also, although the crisis seemed to be a correct general level description of the situation, sociology had succeeded in the certain subfields of it, such as in the study of social mobility. The third solution would have been to simply give a "dogmatic" preference to one of the paradigms of sociology. The fourth solution would have been to evolve by applying the critical analysis of the sociological way of applying theories. (Ibid., 19-22.)

Boudon noted that the third option was clearly the least attractive – the motives for justifying a scientific theory should always be based on some *de facto* reasons. Also, the two first options are not always contrary to each other; research applying so-called *mid-range* theories had combined these efforts somewhat successfully – in practice by applying a theory with *adequate* level of generality to a *particular* research question. And criticality alone could

hardly be a solution, as the fruitful criticism always needs to have understandable reasoning to back it up.

If one looks at more recent discussion about the crisis of sociology (see Goldthorpe 1996; Goldthorpe 2000, 1-11; Boudon 2002; Goldthorpe 2004), it has, however, become obvious that the problem of sociology today – characterised by the division of sociology into subfields of empirical and theoretical study – may be evident *because* it has been applying the second solution. If this is the case, the application of the second choice, the acceptance of multiple paradigms, quite naturally cannot be the solution. This would suggest that the first choice, finding a general paradigm, would be the best option to follow. However, Boudon noted that from time to time there had been suggestions for a “general” theory, of which impact had nevertheless remained quite residual in the end (for example, the theory of social action by Parsons). This situation has not changed – general theories are suggested occasionally but the consensus about the best one has not been reached. Thus, in order to find a more suitable general-level theory, one should try to take into account the problems that become hindering people to apply the general-level theories also in empirical endeavours.

The solution followed here is to first consider the typical fallacies of explanations in sociology<sup>2</sup>. The discussion about the fallacies in sociology has mainly concentrated on the ones generated by the social-levels of explanation, namely on its inability to take into account individual-level causes (see Chapter 2). The most promising “general” level theory of today, *rational choice theory* (or some version of it), has been primarily applied because it is believed to provide a solution to the problems of social-level explanations (see Goldthorpe 2000). However, as the rational choice theories (or more broadly speaking, the rationality theories) have hardly been accepted widely in sociology, it may be worth considering whether the fallacy-discussion it has concentrated on has not covered a sufficiently wide scope.

The great motive behind this work is that if one could overcome the typical problems of social sciences, sociology would also overcome the crisis, regardless of whether this has been manifested as the concern about the gap between theoretical and empirical studies or as the concern about the lowering status of sociology among the sciences. However, it is also firmly believed that if these kinds of problems would be overcome, one should not need to separate sociology from any other social sciences because of any knowledge-based reasons. If the simple conceptual differences are forgotten, it is possible to see that there are more shared features combining social sciences together than

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<sup>2</sup>The discussion about the methodological fallacies is largely skipped on purpose.

separating them from each other. It can be argued that even the problems are largely the same as well as the solutions should be.

## 1.1 The research questions

The aim of the thesis is to propose an empirically testable and *relatively* easily applicable way of integrating the individual- and social-levels of explanation into the same models by applying a modified version of rational action theory.

The research questions will be the following:

1) *What are the typical fallacies of the relation of individual- and social-levels of explanation and how these show up when the causes of social phenomena are studied?* This research question will be answered in the first part of the thesis, in Chapters 2-4. Answering this question involves both a review of the previous work on the topic in sociology as well as studying a specific example case. The selected example is the explanation of social problem of overindebtedness in Finland. Overindebtedness is a suitable example because loan taking and using credit is intuitively thinking very clearly an individual activity, although the actual empirical tests of it have mainly applied only social-level information.

2) *How the social- and individual-level fallacies could be avoided?* Although already the first part of the thesis gives some hints about the answer to this research question, it is mainly considered in the second part of the thesis, in Chapters 5-6. According to the discussion above, the theoretical solution for the problem would be to increase the level of abstraction of the applied theory from context specific “middle-range” theories to a more overall level by applying rational choice or action theories. It is often argued that there are problems in the currently available versions of these theories, also in the “sociological” versions of them. Thereby a sociological version that takes into account the most important aspects of the critique needs to be defined and also tested empirically. This is done by studying attitude- and choice-preferences with survey data.

3) *How the developed more accurate rational action theory can be applied in the explanation of social phenomena, and how suitable it will be for this task?* This research question will be answered in the third part of the thesis, in Chapters 7-9, but the strings are taken together in the conclusions. It is assumed here that in order to benefit social sciences it should be possible to test the theory and apply it empirically to test other theories with lower levels of abstraction also, not only to apply it in an ad hoc manner to already observed regularities or associations between the social phenomena and categories. It would benefit if the clear and well established rules of application could be

proposed according to theoretical and empirical solutions and suggestions applied in this book.

## 1.2 The structure of the thesis

The thesis is divided into three main parts, mainly according to the research questions above. The first part *The symptoms: how the fallacies occur?* consists of the description and comparison of the fallacies of the social and the individual-levels of explanation. These topics will be studied in Chapters 2-4.

Chapter 2 begins with the review of the fallacious ways of explanation in social sciences. The existing and wide-ranging discussion about the fallacies of the *oversocialised* explanations in sociology will be the starting point of this review. After that, the type that can be labelled as the fallacies of *overindividualised* actor is described. These fallacies are argued to be strengthened by the deep-rooted individualism of western societies. Both groups of fallacies are combined by the so-called double paradigm of social sciences. This paradigm suggests that the individual- and social-levels of explanation should be considered parallel to each other as the fields of science – although both are considered as necessary parts of the analysis also of social phenomena. This situation is argued to create a *seesaw-effect* – on the other hand, social sciences are mainly concerned about the fallacies of social-level explanations, which are created by the application of mainly social-level data, whereas on the other hand individual-level explanations are assumed to be taken into account even if they are based on the *a priori* accepted assumptions only. Thus the overindividualised explanations can be easily proposed, but the testing of the assumptions behind them is not often required. This type of fallacy can be found from various areas of social studies quite easily, for example, from the studies of poverty and unemployment, but as it will be shown, also when the explanations of overindebtedness are considered.

The existing studies and the way how overindebtedness is explained in them are evaluated in Chapter 3. The explanations of overindebtedness are roughly divided into two groups: the explanations based on social studies involving social-level causes and the explanations based on individual-level voluntary decisions. The latter type of explanation can be considered as a part of the *activity hypothesis*. Whereas there has been several empirical studies in Finland in which the social causes of becoming overindebted are analysed, and none in which the activity hypothesis would be studied, the activity hypothesis seems to be considered as *a priori* true or at least something is necessary to take into account, even if there is no evidence for it. Based on the evaluation, a

more realistic way of explaining overindebtedness is proposed. This model is tested empirically in Chapter 4.

Part II, *The prescription against the fallacies*, consists of Chapters 5-6. In Chapter 5 the cure for both types of the fallacies is explored from the application of rational action theory (RAT). It can be considered as a special “sociologised” version of rational choice theories (RCTs). The construction of the proper version of the theory starts from the description of probably the most enthusiastically received version of the theory within the last few years, suggested by John Goldthorpe (1996; 1997; 1998). The critiques targeted at this version are tried to be taken into account, and by doing this, hopefully a more realistic and accurate version of the theory is proposed at the end of the chapter. For example, it is argued that a version taking into account multiple rationality types better suits the examination of social phenomena than the versions assuming only one ideal type. Also, it is argued that in order for the version to be suitable for sociology it does not need to be fixed to methodological individualism only, but should also be able to take the collective properties into account.

The possibility to verify the suggested multiple ideal types and eventually also the multiple ideal dimensions of rational action with the empirical data is studied in Chapter 6. This involves the application of survey datasets with suitable value- and attitude-related question patterns. First, a special question pattern designed for the analysis of rationality in the population level, included in *Finland 1999* –dataset, is studied with multidimensional scaling. The analysis is also duplicated with work-related attitude questions of *European Values Survey 1999/2000*. It turns out that although the variables of *EVS1999/2000* are quite different from the ones applied in *Finland 1999* –dataset, the results of the analysis are surprisingly similar.

It was already argued in the research questions that the principles of the application of RAT in research would be highly valuable. This, however, requires explicit examples of how the application can be performed. Thereby Part III of the thesis, *The cure for the fallacies?*, tests the possibility of using the proposed version of RAT in the explanation of social phenomena. It consists of Chapters 7-9. The connections of typical “structural” background variables to the rationality types of the proposed version of RAT are studied in Chapter 7. It is also studied whether RAT could be applied in an *ad hoc* manner, as it sometimes seems to be suggested. In order to justify *ad hoc* usage, one should expect to find strong connection between rationality and set of typical background variables. Not surprisingly, the results of the analysis in Chapter 7 are contradictory to this kind assumption.

Chapters 8 and 9 are crucial for the third research question. In these chapters the proposed version of RAT with empirical content is used in the expla-

nation of various social-level phenomena to which rationality theories are usually applied in a more or less *ad hoc* manner. In order to apply RAT in these questions, dimensions of rationality are applied as the bridge hypotheses that combine the lower level theoretical statements to a general principle of meaningfulness of action. In this way, several explanations, which are usually considered as not having a clear connection to each other, can be tested at the same time. The idea of the bridge hypothesis that connects higher and lower level theoretical statements and its differences to using the theories of the middle-range will also be discussed at the beginning of Chapter 8. The analysis starts by applying RAT with empirical content in order to test the individual-level causes related to it. This can be considered as a validity test of the applied method, because the results can be compared to the ones from Chapter 4. The analysis is then extended to the explanation of getting rid of the overindebtedness also.

In Chapter 9, the application is tested in order to explain other social phenomena. This starts with the analysis of individual-level explanations of social mobility with the rationality variables. It turns out that although the structural forces are the most crucial determinants of social mobility, it can be argued that some micro-level explanations also seem to apply. In the study of rational decision of having children, Gary Becker's (1981) theory is tested against some other theories. The analysis reveals the weaknesses of Becker's theory that have also been found elsewhere. The incentives and the disincentives to work are studied in the final part of the chapter. The persons in the households without any working adults are compared to the persons who manage with very low incomes from work and to other persons working.

Finally, the rules of the application of RAT with empirical content are gathered together in conclusions (Chapter 10).

As it was already mentioned, two quantitative survey datasets, *Finland 1999 – the consumption and the way of life in the turn of the millennium* (see Erola - Räsänen 2000) and *European Values Survey 1999/2000* (see European Values Survey 2001), are applied in the empirical analyses of the thesis. The first, a national-level population representative dataset *Finland 1999*, is used extensively throughout the book, whereas *EVS1999/2000* has been only used in the analyses of the dimensionality of rational action in Chapter 4.

*Finland 1999* -dataset was collected in 1999 as a postal survey as one part of the Academy of Finland funded project “*Welfare State – A Resource of a Constraint?*” The dataset was originally collected in order to fulfil the data needs of the author among the other researchers of the project. The already mentioned questions for the estimation of the variation of rational action was implemented in it, which is the main reason why this data is mostly concentrated on in the empirical parts of this book. The overall goal of the survey was

to provide a dataset in order to study Finnish everyday behaviour with the emphasis on consumption, risks and choice-making. The data concerns a broad range of different aspects of everyday life in the form of value-, attitude- and choice-making questions. The final dataset consists of 2,417 cases, which means that the response rate was 61% from the original sample. The data was found to be well representative if compared to the 18-75 year old, Finnish speaking population it was targeted at.<sup>3</sup> In practice the data has been found to be suitable for various research interests – there are currently over 30 publications published using it.<sup>4</sup>

*EVS1999/2000* is used only as a short example in order to better convince the reader of the advantages of the applied empirical solution for finding the dimensions of rationality. The dataset differs quite a lot from *Finland 1999*-dataset. First of all, it is a value survey that covers 33 European countries. Its population coverage in that sense is much more impressive, with 21,598 cases used here. Yet on the other hand, it too restricted the order to be used here more extensively; naturally it does not cover the special questions originally designed for the analysis of rational action. Thus, the focus of the analysis made with this data is much more limited and at best, only provides the reader with additional evidence about the *rationale* of what has been suggested.

The applied statistical methods (principal components analysis, logistic regression, multidimensional scaling, topological loglinear modelling) are explained as they are applied. More detailed explanations of the used methods can be found from Appendix A.

A major part of the ideas collected and analysed in the thesis have been tested previously in different publications. All these parts are heavily modified here, both in an empirical and theoretical sense.

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<sup>3</sup> See Erola & Räsänen (2000) for further details.

<sup>4</sup> During the publication of this study the follow-up for the dataset, this time called Finland 2004, is being collected.

***PART I******THE SYMPTOMS: HOW THE FALLACIES OCCUR?***



## 2 THE DOUBLE PARADIGM AND THE SEESAW-EFFECT BETWEEN THE TYPES OF FALLACIOUS EXPLANATIONS IN THE SOCIAL SCIENCES

### 2.1 Fallacies as the source of the crisis

Why is there the described crisis in sociology? If some influential scholars are to be (for example, Goldthorpe 1996; 2000, 1-11; Coleman 1990, 1) believed, the crisis is today characterised by the division of the theoretical and empirical social sciences into separate fields. However, this is rather a description than an explanation of the situation within the sociology of today.

Much of the problems that are described with the word *crisis* originate from the lack of the appropriate general level theory for the social sciences. The attempts to get such theory widely accepted have largely remained unsuccessful. (Boudon [1971]1980, 17-19; see also Goldthorpe 1997.) The diagnosis that will be performed in this chapter proposes that part of the problems of getting such a status is due to the dualism between the ways of explanation in social phenomena; the social sciences have traditionally tried to explain social phenomena either as deriving from social or individual causes (see Fuchs 2001). The individual and the social explanations are presented parallel to each other, in a way that Luhmann (1984) describes as the *double paradigm* of the social sciences.

The problems generated by the two polarised types of the applied explanations have been acknowledged for at least half a century. However, during recent decades, within sociology, this discussion has concentrated primarily on the fallacies followed by applying only the explanations based on social causes. In line with the argument of Fuchs (2001) (see also Zafirovski 1999a), it is argued here that while this group of fallacies has been underlined, another group of typical fallacies has received too little mention, namely the fallacies of putting too much emphasis on the impact of individual-level voluntary causes. Independent of which type of fallacies are more usual in reality within social studies, it can be argued that the double paradigm positioning individual- and social- level explanations as parallel to each other creates a *seesaw-*

*effect* between the types of fallacies; when the problems of the other type are emphasised, the other receives too little attention. Thus, even if the critiques of the oversocialised explanations within sociology have suggested valuable improvements to the explanations of social phenomena, the unintended result from this has been that the problems followed from the fallacies related to the individual-levels of explanation have not been stressed enough.

The chapter consists of three parts. The first part describes the different versions of the arguments about oversocialised explanations within sociology. The second part describes the problem followed from the overemphasis of individual causes, the fallacy of the overindividualised explanation. Finally, the third part describes the historical background of how and why the double paradigm has come into being and how it creates the *seesaw-effect* between types of fallacies.

## 2.2 Social as a source of false assumption

The discussion about possible fallacies of explanations is vital to any sciences, and is thereby expected to be taken into account. Today it is easy to come across with social scientists claiming that the social-structural way of explanation – whether because of the methods used or selected theory – sometimes has too strong impact in the social sciences. It is much harder to find a social scientist considering individual-level explanations as a source of false assumptions. (See Fuchs 2001.) Below various arguments concerning too large emphasis on the social explanations in the social sciences is outlined briefly. The criticism originates mainly from the period after the Second World War.

Much of this discussion can be traced back to the authors critical to contemporary social theories, such as David Lockwood (1956) and Dennis Wrong (1961)<sup>5</sup>. The main concern of these discussants was that sociology after Talcott Parsons was becoming too structurally determined, giving individual actors too little emphasis in the explanation of societal phenomena. For example, according to Lockwood, Parsons overemphasised the role of norms and normative behaviour. This was due to his too general-level view about social regularities as a “*general sociological theory*”. This kind of theory was considered as being improper for sociology. (Lockwood 1956.)

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<sup>5</sup>Already in 1950, Robinson published an article concerning the *ecological fallacy* in sociology. This referred to the use of completely social- (or actually institutional) level data as a reference for individual-level phenomena (see Robinson 1950). However, this discussion was mainly concerned with the empirical level problems of applying social-level data, not so much about the theoretical problems of it that was found in the discussion of both Lockwood and Wrong.

Wrong put his criticism under the label of “*oversocialised concept of man*”. This criticism was targeted much more broadly towards the problems of the social sciences to include individual-level explanations rather than only against Parsons, although he made explicit arguments only against Parsons and in some detail against Emilé Durkheim. Wrong claimed that there was no view of the individual actor in sociology that would have made it possible to allow the variation of individual action to have effects in the explanations of social phenomena. It was assumed that just as much as sociology was founded on the denial of utilitarianism, it was also founded on the “anti-psychological” assumptions about the impact of individual actors, presenting actors merely as conformists and/or status-seekers. (Wrong 1961.)

Similar arguments were also proposed in Alvin Gouldner's *The Coming Crises of Western Sociology* (1970). Gouldner was sceptical towards the “Parsonian” programme of functionalism, considering it as fundamentally conservative. However, Gouldner did not provide a solution for the crisis on a theoretical basis, at least not one involving the integration of individual- and social-level of explanation.

Social determinism typical to sociology was also referred to with the term *sociologism*, here understood as used by Boudon ([1979]1981, 155-166; [1977]1982, 154) with the reference to the *homo sociologicus* discussion of Ralf Dahrendorf ([1959]1969). Just like the individual actor of economics is referred to as *homo oeconomicus*, the sociological actor *homo sociologicus* is seen as a socially determined human being. *Homo oeconomicus* is often considered as an oversimplification – it assumes that for the study of economy-related phenomena it is enough to assume only one type of behaviour, according to which individuals search for the benefits or optimality between “costs” and “benefits”. *Homo sociologicus* was seen as an improvement on that, because according to it the individual is never optimal, atemporal or free to choose. For Boudon, *sociologism* without any reference to the interaction between two or more individual actors, also called *structural determinism*, was a serious problem for *homo sociologicus*. The difference between Boudon and the others is that his criticism is not so much targeted at the previous masters of sociology, but towards sociology in general. For Boudon, *sociologism* was a result of not adopting the principles of methodological individualism. (Boudon [1979]1981, 155-162; see Dahrendorf [1959]1969, <sup>6</sup>)

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<sup>6</sup> Boudon obviously owes to Popper's term of *sociologism* (see Popper [1945]1974, 566). According to Popper, all *-isms* are to be understood as negative, if they are applied within the sciences. *Sociologism* refers to a belief in sociology of knowledge that the problem in sociology is that practical and theoretical aspects are too closely bound to each other. According to Popper, however, it is impossible to practice social sciences without any reference to praxis.

The above-mentioned self-criticism of sociology had a counterpart in public discussion concerning American society. Amitai Etzioni's (1977) idea about *societal overload* referred to a situation, which according to some American neo-conservative social scientists, was to be observed when the expectations of the people about the services and resources it felt government or society ought to provide them had risen too high, on the level that was practically impossible to realise. The problem with this was that societal overload widely undermined favoured societal attributes, such as civil rights, individual initiative and independence, economic vitality and "quality" in leadership, culture, intellectual life and science.

Etzioni assumed that societal overload was at least a partially correct characterisation of the American society of the 1970s, although he saw a rather different solution to the problem than the neo-conservatives did. He considered the discussion as a welcome "(...) *antidote to the naïve — and at the same time arrogant — overconfidence of the 1960s*". According to him there were two possibilities to deal with the problem:

*"Either we grossly reduce that we seek to do in general, collectively or through polity in particular. Or we take action to create greater capacities for consensus building, for conflict resolution, for efficient and effective administration, and the development and assimilation of policy-relevant knowledge — so that the society is better able to accomplish more of the needs it is seeking to serve, though not all of them". (Etzioni 1977.)*

American society did not follow the latter path that Etzioni anticipated, but actually took the first choice when Reagan was elected as President in 1981.<sup>7</sup>

The "family resemblance" between *oversocialisation*, *sociologism* and *societal overload* can be easily seen. They all refer to a group of false assumptions according to which social structures are assumed to have unrealistically strong explanatory power over social-structural phenomena. All of these fallacy-arguments rely on the principle of *methodological individualism* (MI), which in its mildest version claims that individual-level explanations should not be forgotten within sociology, and in the strictest version claims that these explanations overrule the social ones. As it will later be shown, MI does not guarantee that the fallacies related to individual and social explanations can be

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<sup>7</sup>The term "*oversocialization*" made an unexpected come-back to public discourse in 1995 when The Washington Post and New York Times published the infamous "*Unabomber Manifesto*" in order to prevent its writer's David Kaczynski's bomb attacks. In the manifesto, Kaczynski defines oversocialisation as follows: "*Some people are so highly socialized that the attempt to think, feel and act morally imposes a severe burden on them. In order to avoid feelings of guilt, they continually have to deceive themselves about their own motives and find moral explanations for feelings and actions that in reality have a nonmoral origin.*" Kaczynski's argument about the dangers of this kind of personality is surprisingly similar to the conservative arguments Etzioni is referring to.

avoided. On the contrary, it may be assumed that if MI is applied, the likelihood is that the other type of fallacies will become stronger. This aspect of MI will be discussed further below.

### 2.3 From undersocialisation to overindividualisation?

Examples about the fallacies of individual-level explanations are much harder to find. Although utilitarianism often combined with economic or individualistic assumptions of Freudian psychoanalysis are eagerly criticised within sociology, from the beginning of the social science its promoters have ended up defending individualism in some form or other. A particularly characterising example of this kind of situation is Durkheim's essay on individualism, where he explicitly argues *pro* individualism, but *contra* egoistic individualism (see Durkheim [1898]1969). This is surprising to discover, because it is often assumed that Durkheim was against individual-level explanations altogether.

There are at least a couple of exceptions pointing out the individual-side of the fallacies. For example, in her case study method book Matilda White Riley (1963) distinguished the atomistic fallacies from the ecological or aggregative fallacies. Whereas in the previous case the hypotheses involved in the study refer to a group, but are interpreted according to individual-level data without social context, the latter type referred to the case in which individual-level hypotheses are tried to be interpreted with social- (or institutional-) level data. Further, Riley distinguished the psychological fallacies from the sociologicistic fallacies. The previous referred to the cases in which individual-level explanations are overemphasised because there is no adequate data about the social-level causes of the observed phenomenon. The latter referred to the opposite case; social-level causes are emphasised because of the lack of individual-level data. (Riley 1963; 704-709.) Riley proposes various techniques and methods in order to avoid the fallacies. The emphasis is clearly on the methodological side – the fallacies can be best avoided by using certain methods in order to discover certain problems.

The theoretical part was emphasised later by Mark Granovetter. In his article *Economic Action and Social Structure: The Problem of Embeddedness* published in 1985 Granovetter takes up the phenomenon of *undersocialisation*. Undersocialisation refers to the problem followed once it is forgotten that all individual actors are embedded in social context.

According to Granovetter, both under- and oversocialised views of action have important similarities:

*“(B)oth have in common a conception of action and decision carried out by atomised actors. In undersocialized account, atomisation results*

*from narrow utilitarian pursuit of self-interest; in the oversocialized one, from the fact that behavioural patterns have been internalized and ongoing social relations thus have only peripheral effects on behaviour.” (Granovetter 1985.)*

According to Granovetter, Parsons' (1937) criticism against Thomas Hobbes was mainly based on the undersocialised understanding of the behaviour of the latter (see Parsons 1937, 89-94; Hobbes 1651). Granovetter also argues that the problem of forgetting the social context was also present in the works of classical and neo-classical economists and is at least as big a problem for the social sciences as oversocialisation is. Social explanations often seem to be excluded from economic analysis altogether, especially in institutional economics (Granovetter 1985; see also Schwartz 1998). Nevertheless, Granovetter also shares Lockwood's and Wrong's concern about oversocialisation as one of the problems of the analysis of social interaction. He notes that sometimes economists, such as Leibenstein and Becker, also take the impact of social relationship seriously, but actually manage to make oversocialised assumptions about their importance. (Granovetter 1985.)

For many sociologists not too familiar with the work of the above-mentioned economists this may sound rather surprising. Usually, sociologists see the problem of economics being in having too strong emphasis on certain types of individual-level motives (usually individual economic utilitarianism), not in emphasising the social explanations too strongly. Closer examination reveals that while Granovetter is arguing about problems of undersocialisation (having too small emphasis on social causes), he does not make too strong propositions about the impact of the application of individual-level causes in the social sciences — rather he only suggests a combination of individual- and societal-level of explanation as the study of social interaction.

Both Riley's warnings about atomistic and psychologistic fallacies and Granovetter's concern about the undersocial explanations are slightly different from the argument that will be proposed here or at least put emphasis on the different outcomes. What neither of them takes up is that the individual-level of explanation can also be overemphasised or considered as *a priori* more important explanation of certain outcomes than any social explanation, if individual-level explanations are assumed to be valid even if they are not tested (see Boudon [1971]1980, 25). In fact, Fuchs (2001) suggests that this is one of the reasons why a proper solution for the problem of micro-macro link (the connection between individual- and social-level phenomena) within sociology has not been found. As it will be described in Chapter 3 with a detailed example of the explanation of overindebtedness in Finland after the recession of the early 1990s, the impact of individual-level causes can sometimes be exaggerated even if the social-structural explanations are found to be able to ex-

plain certain general level social phenomena efficiently. In that kind of situation it is all the same if the validity of social-level explanations is accepted or not – they are always considered as of secondary importance. This is because a social-level explanation can be challenged with empirical findings opposing it, while one applying individual-level causes doesn't if it is accepted as being *a priori* valid. It seems to be that if only Riley's methodological principles or Granovetter's demand for avoiding the atomisation is concentrated on, this kind of situation is not necessarily considered as problematic as it sometimes should be.

In order to distinguish this kind of fallacies from the oversocialised ones a new term, *overindividualisation*, is introduced here. Overindividualisation refers to a situation, in which individual (voluntary) actions are assumed to have unrealistically strong explanatory power over a (usually unwelcome) social phenomenon. Or, if taken to an extreme, individual explanations are considered to not only have too strong explanatory power, but also to be *a priori* true explanations, and thereby also prioritised over all social explanations, which in turn are expected to require empirical evidence to be considered valid.

Usually the phenomena in which the overindividualised explanations are applied to are such that they can rather easily and meaningfully be understood as the results of individual voluntary acts or even individual characteristics. For example, unemployment can be considered as being a result of being passive in job searching, as the activation politics seem to suggest (see Dropping et al 1999) or good education is seen as a result of good individual abilities or effort (see Saunders 1997). In both of the examples it is probably possible to find cases in which individual-level causes are applicable. However, these causes may easily lose their significance as general-level explanations if they were tested and not just taken for granted. It is also possible that sometimes, as in the case of overindebtedness that will be analysed later, the phenomenon is even felt to be primarily dependent on individual explanations and only residually on social explanations, although the empirical evidence would suggest otherwise.

Just as in the case of the relation between oversocialised explanations and societal overload, it may be worth considering whether it is possible to find a similar counterpart to overindividualised explanations. This kind of situation could be referred to as *individual overload*. Individual overload would refer to a situation, in which a false assumption has been made commonly acknowledged, this time about the possibility of social phenomena to be generated by the individual deviation of behaviour or pattern of behaviour. Social scientists would be eager to accept these “theories” about the reasons of social phenomenon shared by the public, because these beliefs may be shared by many

and also because they seem to take into account the problems of lacking individual-level explanations.

One of the main sources of overindividualised explanations of social phenomena is of course individualism, which can be seen as a permanent or consistent feature of modern societies. Whereas the fallacy arguments concerning too strong social explanations have had straightforward effects mainly on the social scientists only, not so much on the society in general<sup>8</sup>, the permanent features of individualism effect the whole society. These permanent features of individualism will be described next.

### 2.3.1 Individualism as permanent features of modern societies

Individualism itself is usually understood as an “umbrella concept”, consisting of many different topics in close relation to each other. It refers to, for example, a certain kind of social change, behavioural patterns, attitudes and values. In order to understand its multidimensionality properly, it is suggested that one should distinguish at least four aspects central to individualism: the values of individualism and the individualist doctrines common in western societies, as well as the individualisation process of social change and individuation as a development of personal identity (Musschenga 2001). In practice, the latter two aspects can be considered as part of the same type of the features of individualism, namely of its procedural character.

Like often in the social sciences, in which theoretical knowledge is often assumed to accumulate in far slower phases than in, for example, the natural sciences, the theoretical ideas presented in this chapter are strongly connected to the classics that are considered as “inventors” or particularly good describers of the ideas rather than on well-established empirical findings. Thus, in the case of the former two aspects of individualism, values and doctrines, the following outlining of the topics will be heavily based on the work of Steven Lukes (1973). In the case of the two latter topics, individualisation and individuation, definition is based on the writings of Ulrich Beck ([1986]1992; [1988]1990; 1993), Anthony Giddens (1984; 1991; 1996) and Niklas Luhmann (1984; [1991]1993; [1992]1998). Despite the inductive character of

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<sup>8</sup>It has to be noted that from the oversocialisation arguments above that societal overload was probably the most significant for western societies in general. Although Etzioni’s belief that intellectuals’ and social scientists’ one principle function is to help to shape society’s view of itself (Etzioni 1977) can easily be accepted, this view has to be either accepted by the public or by the policy makers before having any straight impact on society in general. Societal overload seemed to have this impact.

these theoretical discussions, all of these aspects can be seen as the breeding ground for overindividualised explanations in the social sciences.

*A. Individualist values.* Because of its practical everyday usage, as well as its political connotations, individualism is most typically understood as referring to a group of values. According to Lukes (1973), western individualism consists of four ideals: the supreme and intrinsic value of an individual human being, autonomy or self-direction, privacy, and self-development. These ideals are the essential elements of equality and liberty, and are combined with the way of conceiving individual abstractly as given, while considering society as something responding to individual interests, needs or wants. (Lukes 1973, 43-78.)

Many proponents of individualism underline only the mediating values, liberty and equality, and the ideals of smaller extent remain more or less unnoticed (Lukes 1973, 125-137). Often it seems to be the importance of equality that is underlined. For example, one of the most influential writings about individuality, *Individualism and Economic Order* of Friedrich Hayek (1949), differentiates *true* individualism from the false type partially with the claim that the true type is based on the ideal of equality (ibid., 6-13). Alexis de Tocqueville in his early classic *Democracy in America* (Tocqueville [1835-1840]1981, 599-603) names equality as the primary source of individualism. In a similar manner, in *A Theory of Justice* (Rawls 1971) John Rawls considers equality as “(...) *the least controversial element in the common sense idea of justice*” (ibid, 442). This kind of “limited” understanding of the value-base of individualism can only be defended effectively with normative arguments. Even equality as such is far from being taken for granted in western societies. For example, it has been noted in studies of social mobility that equality in general is too complex phenomena to be accepted widely as a political goal. Then again, *equality of opportunity* as a normative goal is usually considered to be accepted by most modern countries, although there is variation according to political agendas. (See Erikson - Goldthorpe 1992, 18-22; Marshall 1997, 6-13,179-184; also Marshall et al 1997, 9-13; Erola - Moisio 2002; Jäntti 1995.)

In the case of overindividualised explanations, these individualist values set the limits of the normatively accepted actions. By examining the values it is possible to understand the moral element often related to these arguments: for example, getting overindebted is an immoral act not because it underlines individual interests, but because these interests violate the equality of persons in the market and show that the value of self-direction has not been followed successfully.

*B. Individualist doctrines.* The ideals of individualism are closely related to at least six distinguishable doctrines of individualism: political, economic, religious, ethical, epistemological and methodological. Political individualism

considers citizens as independent and rational beings. Economic individualism can, in its simplest mode, be understood as a belief in economic liberty. Religious individualism refers to a view that an individual believer does not need intermediaries, that one has the primary responsibility for one's own spiritual destiny and that one has a right and a duty to have one's own relationship with God, in one's own way and with one's own effort. Ethical individualism sees the nature of morality essentially as an individual-level phenomenon. Epistemological individualism asserts that the source of knowledge lies within an individual. (Lukes 1973, 79-110).

The last doctrine, *methodological individualism* (MI), can be considered as having the strongest impact on overindividualism, as it is the one having the closest connection to modern sociology. According to Lukes' definition of MI, traceable back to Weber's (1978) and Durkheim's (1898[1969]) classical texts, all social or individual phenomena should be explained with the facts about individuals (Lukes 1973, 110). Often the proponents of methodological individualism give an impression that the doctrine can be defined in a rather definitive, indisputable way (see Boudon [1979]1981, 36-38; also Hayek 1949; Popper [1945]1974). However, MI is actually a range of types of explanation in accordance with how much the individual and social-levels of explanation are combined. The type of MI with maximum social reference with presuppositions about certain social groups or institutions is the most widespread in the social sciences. Individual facts it refers to are, for example, saluting or voting. With maximum reference to social factors they are usually only able to prioritise individual-level explanations on the normative level. (Lukes 1973, 120-123; see also Goldthorpe 1998.)<sup>9</sup>

It can indeed be agreed with Lukes that methodological individualism often assumes the individual-level of explanation of social phenomena necessarily to be *a priori* true, whereas the ability of social causes to actually explain the social phenomena is presented as a matter of empirical evidence. Sometimes this kind of assumption is legitimised by the fact that considering social explanations *sui generis* without any reference to individual actors is considered as

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<sup>9</sup>Lukes also distinguishes three other types of MI. The strongest version explains social phenomena by assuming human beings completely material objects with no reference to consciousness or social group or institution. The human beings could be reduced to genes, brain-states, molecules and atoms. Lukes' example of this type of explanation is H.J. Eysenck's attempt to reduce political attitudes to activity in the central nervous system. A milder type of MI explains social phenomena with reference to consciousness, but none to social groups or institutions. The individual-level phenomena referred to are, for example, aggression or stimulus-response model of behaviour. Lukes combines this type of methodological individualism with Hobbes, Pareto and Freud. (Lukes 1973, 119-120.) It will shortly be noted that, at least in the case of Hobbes, Lukes is here quite unfair. The third type explains social phenomena with minimal social reference, with the presupposition of the social context in which certain actions are given a particular significance, but still does not presuppose any particular social group or institution. It refers to the individual phenomena like co-operation, power or esteem, often used in sociology and social psychology.

suspicious or simply as false (for example, Hayek 1949, 6). However, also Lukes' point of view concerning MI has a quite common deficiency. It follows the already mentioned usual assumption made in the social sciences that the level of importance of the social explanations is parallel to the importance of individual-levels of explanation. This appears as if it would be believed that individual and social explanations are impossible to be applied together. What easily remains unnoticed is that making that kind of assumption combines both proponents and opponents of MI (see Fuchs 2001).

MI is also a doctrine that connects individualist values to the fallacy discussion typical to the social sciences on the personal level of discussants. Many of the persons pointing out the fallacies of oversocialised explanations have also been promoters of MI.

*C & D. Procedural individualism: individualisation & individuation.* The last two of the permanent features of individualism, *individualisation* and *individuation* could also both be labelled under the doctrine of procedural individualism, arguing that individualism is not a state but a process. During recent years, this procedural character of individualism has been stressed so often that it requires to be considered in a more detailed manner. It should be considered alone as having a more important role in the anchoring of individualism as a permanent feature of modern, western societies than the other doctrines.

Individualisation refers to a social change connected to individualism. According to Ulrich Beck ([1986]1992), individualisation in modern societies is characterised by three factors. First is the removal from historically prescribed social forms and commitments in the sense of traditional contexts of dominance and support, such as gender or class system (the liberating dimension). Basically this means that these aspects lose their dominating impact on individual life-course. The second is the loss of security in the respect of practical knowledge, faith and guiding norms (the loss of stability or disenchantment dimension). This means that strong socially shared values and norms lose their status as something that has traditionally provided security against the unforeseen uncertainties in individual lives. As these aspects can be understood in relation to the strengthening of importance of the schooling system and secularisation of the life-world, they are also the changes already brought up in classical sociological studies concerning the modernisation process. (Ibid., 127-131.)

The third and the most controversial of Beck's factors is re-embedding, the new type of social commitment, which is also referred to as the control or re-integration dimension of individualisation. An individual becomes the reproduction unit for the social in the life-world, as class or/and family system collapses. Socio-biographical situations become standardised because of, for ex-

ample, market, money, law, etc. Of particular importance in respect to this is the labour market system. Individuals become extremely dependent on the ability to participate in it. What emerges is an institution-dependent control structure of individual situations. (Ibid., 128-131.)

Many empirical studies have cast reasonable doubt on Beck's original re-embedding prophecies. For example, there are no indisputable signs about the weakening of the class system, although there are evident signs about its restructuring (see Breen 2001; Evans - Mills 1998; Korpi - Palme 2003; Goldthorpe 2000, 256-258; Nieuwbeerta et al 2000). However, even Beck does not make this far-reaching limitation in his argument, not at least in the original text<sup>10</sup>. According to Beck's original formulation, these factors are ahistorical in the sense that they are not limited to, for example, late 20<sup>th</sup> or early 21<sup>st</sup> century but are "subjective-biographical aspects" of the civilisation process.<sup>11</sup> (Beck [1986]1992, 127-129.) Thus, they relate to modernisation as its permanent procedural features, not as a process limited to the last two or three decades of human history.

Individuation is also clearly procedural in character. It refers to the development of personal identity and is thereby usually understood as a psychological term. According to Luhmann, individuation is not just a psychic process, but also a socially and historically developed "institution" that also has sociological context. According to Luhmann, individuals became less identified with their "social station" after the 18<sup>th</sup> century. At the same time, one became more clearly a point of reference in individual life-course (Luhmann 1984, 258-259; Luhmann [1992]1998). It seems to be that in this case the change is assumed to have occurred centuries ago, not during recent decades. Thus, this is the same change that Beck calls re-embedding connected to modernity in general.

### 2.3.2 Procedural individualism as a zeitgeist phenomenon?

The reason why the procedural character of individualism has been considered to be so important phenomenon during recent years is not that it has been seen as one of the *permanent* features of individualism. On the contrary, the reason for this has been that it has been seen as a temporal feature of modern societies – thus, a feature more clearly connected to particular historic-structural *zeit-*

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<sup>10</sup> In more recent writing this tone seems to have changed towards a more *zeitgeistlich* direction (see Beck 1993; see al so below).

<sup>11</sup> Beck also argues that in order to understand these factors properly they should be considered divided into subfields of the objective life-situation and the subjective identity/consciousness. This division was not found to be helpful for the current purpose.

*geist* – of current modern societies rather than something connected to modernity in general. This less permanent and recent type of individualisation can easily be understood if compared to the above mentioned process of individualisation presented by Beck ([1986]1992). Individualisation is then not understood as a permanent or constant process, but as a re-embedding process *particularly* typical to a certain phase of time where certain conditions meet (Beck 1993,13-16). The social change associated with it has occurred practically during the last three or four decades. Individualisation is then understood as one example of the discontinuities of modernity (see Giddens 1991, 4-10). The changes in family and labour structure after the Second World War can be understood as concrete examples of time-bound processes like these.

For example, it may be assumed that the studies of social class would back up these assumptions about individualisation as a *zeitgeist* phenomenon. In class analysis, individualisation has been connected to the expansion of the middle classes, disappearance of the status-based class system and precariousness of full time work during the decades after the WWII (Pakulski - Waters 1996, 123-125). The service or the middle classes are assumed to have a strong cultural background underlining individualism (Giddens 1973, 185-186). This may be observed as, for example, the preference of exercising individual hedonistic sports, like tennis, over the team sports, like football (for more detailed analysis, see Bourdieu [1979]1984, 208-220). In status-based class systems, social bonds are understood to be particularly strong in contrast to the systems in which status is not assumed. Short-term work prevents the existence of strong work-based social bonds, whereas unemployment is understood as something that is experienced in isolation (see Jahoda 1982, 59-60). However, there is no necessary relationship between individualisation as a lack of certain types of social bonds and with a need to accept the individual-level of explanation as *a priori*. On the contrary, possible individualisation can be explained by social factors, mainly with those related to the applied class system, and may as well have been replaced by other bonds (for example, see Räsänen 2003). At least in the case of class system, possible *zeitgeist* individualism has to be backed up with traditional explanatory models referring to traditional social structures as explanatory factors.

It may also be argued that the way in which modern societies are organised has effects on individuals in the way the argument about the *zeitgeist* individualisation suggests – individuals are “left alone” and surveilled as individuals, separate from each other (see Young 1999). This is, however, not an innovation of post-modernity, but actually maintains the idea of panopticon, a novelty idea of 19<sup>th</sup> century social philosopher Jeremy Bentham (see Foucault [1975]1984 266-312). It can be seen that as technological applications have become more advanced, individual surveillance systems have also become

more commonplace than they have been before. But this would mean that society is reaching the mature phase of modernity (for example Luhmann [1992]1998), 1-5), not something that would be completely new to it.

Individualism as a *zeitgeist* phenomenon has also been connected to change from modernity to post-modernity. According to Inglehart (Inglehart 1997) especially a process he also calls *individuation* is expected to be even increased by the shift from both religious and state authority towards individual autonomy (ibid., 81). However, there have been serious doubts whether the empirical measures Inglehart used in order to back up this argument are really anything more than a heterogeneous collection of items (Haller 2002, see also Kouvo 2003). So at least the evidence of this change is disputable.<sup>12</sup>

Finally, there are also time period-related political processes worth considering here as possible signs of *zeitgeist* individualisation. A certain political process underlining individual responsibility was witnessed in Finland both in the case of the depression of the 1930s and 1990s. In the case of the thirties this was called *pulapolitiikka* – the politics of the recession (see Kalela 1987). This was shown as a rising interest towards the right-wing farmer movement underlining individualistic political values (Kalela 1987; Helander - Toivonen 1971). In the early nineties Finland witnessed again a very similar phenomenon – the widening of individualistic politics. The traces of the individualisation of politics were observed both as the elite's growing lack of belief in the possibilities of political interventions during the nineties (Aslama et al 2001) as well as a change in the way how welfare politics was believed to be able to achieve its goals from transfers and services towards work and incentives (Kautto et al 2001; Saari 2001; Kautto et al 2002; Esping-Andersen 2002).

Why were these changes in politics possible? It has been shown that insecurity itself tends to enforce the valuation of social co-operation. For example, unemployment makes people more favourable to social values (Gallie - Vogler 1994), not the opposite, as, for example, Beck's risk society theory seems to suggest. It seems to be plausible to claim that the political individualism of the nineties was not something that those who actually experienced unemployment or poverty shared. Political individualisation was probably most commonly supported by those who needed legitimating for their better off situation, as the change in the elite's opinions seems to suggest.

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<sup>12</sup>One of the phenomena assumed to be maintaining the unrealistically high level of individuality in society during the previous decades is the expanded cultural impact of psychoanalysis (Bellah et al 1985). It has been claimed, for example, in the case of the United States that levels of individuality can be explained by its therapeutic cultures. For example, the popularity of psychoanalysis and its individualistic character can be one explanation of individualisation of everyday life. (Ibid., 117-141.) There is, however, very little evidence backing up this kind of assumption. On the contrary, there is some evidence that psychotherapists share no higher rates of individualist values than other groups, at least in American society (Tredinnick - Fowers 1999).

If there was a group of well-being persons who shared the values promoting political individualism, was that the group who also had an impact on social scientists? If this key group was the political elite, this could really be the case. The core of the Finnish elite belongs to the same age cohort born between the years 1940-1949. All of the elite, including political and academic, seem to have a higher likelihood to have acquired part of their basic education and A-levels in the so-called “boy- and girl-schools” that can be considered as elite schools of that generation. (See Ruostetsaari 2003, 160-161). It can be argued that similar ideologies could be attractive to both groups in a similar manner because of the shared “key-experience” of the generation (see Toivonen 1999, 270; Toivonen 2000).

Nevertheless, it seems to be that apart from the political processes, the indisputable evidence about the raising level of individualism in western societies during the last decades is hard to find. Whether or not this was the case, it can be concluded that *zeitgeist* individualism may be one example of over-individualised explanations of social phenomena itself, assuming too strong explanatory power for individual causes. These processes can be referred to with the concept of *individual overload* suggested above. Whether this happened is, nonetheless, an empirical question that cannot be analysed here in detail.

Even if it is possible to trace the effects of the generation and period-related individualism in Finland or elsewhere, this does not yet explain why social scientists have not been able to consider both the fallacies of the individual- and social-levels of explanation at the same time. It is argued here that the main reason for this is the fact that the social sciences have historically been considered to suffer from a *double paradigm*.

## 2.4 Double paradigm

The social sciences are – quite naturally – interested in social phenomena. This of course means that within the social sciences the applied explanations cover social phenomena and the mechanisms related to them. This may cover almost anything extra-individual, ranging from peer-groups to social institutions. When modern societies have strong and permanent features promoting individualism, it is natural that individualism has a strong effect on the social sciences, too. Individualism underlines the importance of individual-level explanations, which enforces the possibility of individual-level fallacies. For the reasons that will be described below, individual- and social-levels of explanation have been traditionally considered as necessary but parallel to each other. It is this traditionally assumed connection between the types of explanation that creates the already briefly described seesaw-effect – worries about social

fallacies are not assumed to be analysed at the same time with the fallacies of individual-level explanations.

For example, according to Niklas Luhmann (1984, 260), the parallel view of individual- and social-level explanations can be considered as an aspect of the social sciences that occurred already at least a century ago, basically during the same processes when the social sciences themselves were born. It can be argued that the phenomenon has remained a part of the social sciences ever since. Without being guilty to the “*poverty of historicism*”, or even better, in order to avoid it<sup>13</sup>, the main phases in the history of the social sciences that affected the occurrence of the phenomenon, will be pointed out in this part of the chapter. It will be argued that the parallel view is not so much based on the ontological but the practical reasons.

#### 2.4.1 Individual's Hobbesian heritage

It has been shown by, for example, Foucault (Foucault [1966]1994) that in the Middle Ages the concept of “man” was practically unknown to the sciences.<sup>14</sup> It was only after Thomas Hobbes (d. 1679) can we consider the first steps of western philosophies of the sciences about Man to have been truly taken. In Macchiavelli’s writings from the 14<sup>th</sup> century, the importance of the individual (man) was already central, but did not yet start a revolution in the philosophy of the sciences, mainly because of the politically and socially unstable conditions in Italy at the time (see Russell [1946a,b]1997a,b, 28). It seems to be that

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<sup>13</sup> In his *Poverty of Historicism* (Popper [1944]1957), Popper argues against the fallacy of making laws like ones in i.e. theoretical physics based on generalisations of history. Popper's criticism was especially targeted at the Marxists, but should be considered as a general type of fallacious way of deduction.

<sup>14</sup>If one takes a look into the history of philosophy, the change that occurred in the Middle Ages becomes clearly evident. In the Middle Ages it was not the actions of individuals that were considered as the most important, but the acts and the will of God who “spoke” through individual actors. Not only God, but also opposite, evil powers had the same ability to control human beings. After Thomas Aquinas had proved in *Summa contra gentiles* (written in 1259-1264) that “God is everywhere”, western science began to separate itself from theology. The assumption of evil that was not a creation of God was necessary for the Catholic Church, but was not logically possible even according to its own teachings. It was impossible on the cognitive level of those in the field of the sciences to consider the rules of logic as not true; what was followed was that the teachings of Church became seriously questioned. If there were no forces opposite to God that made it possible for people’s actions to deviate from each other, there had to be something else. It can be easily understood that it seemed to be logically consistent to consider that these differences came from inside individuals, in the same manner as virtue or sin. In the latter cases it was previously believed that there was God or powers of evil working inside the person. However, now the ultimate differentiating level was Man himself, not different divine forces inside, but exterior to him. (See Weber [1920]1978, 515-521; Luhmann 1984, 257.) However, the separation of science from theology was stopped in the field of philosophy for centuries after William Occam died in 1350, and continued only in the work of Hobbes in 17<sup>th</sup> century (see Russell [1946a,b]1997a,b, a535-547.)

there has been similar thinking “in the air” at the time of Hobbes' elsewhere, too (see Mayhew 1984), but in other versions the single individual as a final cause was more or less a residual phenomenon.

In the book *Leviathan* (Hobbes 1651), the concept of an individual Man can be seen as the most central item in the analysis of social and political philosophy. The whole land of Leviathan was considered to be an analogy of the human body, its government being its soul. (Russell [1946a,b]1997a,b, 70-75.) The novelty of the thinking according to which a single individual is presented as the final explanation can be observed also in the structure of the book itself. In the first part Hobbes starts with assumptions about freedom and the centrality of man, in the second considers its effect on the state and society, but needs two parts more to explain why God can/should still be taken into account when the causes of social phenomena are considered (see Hobbes 1651).

Many of the components that have later been identified as parts of the western individualism are present in Hobbes' theory of human action. Life is presented as a competition and affections are often related to them. In its natural condition, life is in the state of war, in which each individual is the enemy of the other. This does not mean that Hobbes assumes that this “natural state” has ever actually existed as a point in history from which other types of societies have evolved. Nevertheless, he believed that it existed in some parts of the world in his time (among the “*savage people of America*”, for example). (Hobbes 1651, XIV.) Thus, the natural state should be interpreted as an “ideal type” of Weber ([1920]1978), as a pure, abstract point of reference of thinking, rather than a general rule of social interaction like it is often assumed to be.

Hobbes was strongly influenced by the natural scientists, such as Galileo, Newton and Kepler. Thereby it is not surprising that Hobbes was also after similar laws that his contemporaries were able to suggest in the field of the physical sciences. The *jus naturale*, the right of the nature is “(...) *the liberty each man hath to use his own power as he will himself for the preservation of his own nature*” (Hobbes 1651, XIV). This must be separated from the *lex naturalis*, the law of nature. According to it, “(...) *a man is forbidden to do that which is destructive of his life, or taketh away the means of preserving the same, and to omit that by which he thinketh it may be best reserved*”. A right is a liberty; a law is an obligation. Other laws can be further derived from these two laws, also, which was necessary in order to make societies not in “the natural state of war” possible to exist. There is a free will between persons, and a person can sometimes give this right away to another person, for example, in order to obtain security in life. (Ibid., XIV.)

According to Bertrand Russell, Hobbes can be distinguished from all of the previous “political scientists” by the fact that he was a true nominalist, free of

magical beliefs (Russell [1946a,b]1997a,b, b71). This does not mean that his thinking was without controversies. Take, for example, his concept of trust. The existence of trust explains why there are societies, but it is as such more or less taken for granted. The origin of trust is in social structures, but trust itself explains social cohesion. The laws of nature are needed in order to make it possible for man to be in interaction with each other. However, the laws cannot explain social cohesion, but cohesion is simply deduced from the fact that there exists, nonetheless, social institutions. So in fact, Hobbes' argument here was circular, as it has been often pointed out by various scholars (i.e. Parsons 1937, 89-94; Wrong 1961). Thus, the problem with Hobbes was not the one-sided individualism of his thinking, but the circularity of arguments and assumptions taken for granted<sup>15</sup>.

#### 2.4.2 Utilitarian individualism and social-level explanations

It is usual to associate Hobbes' individualism with utilitarianism and to think that Hobbes was the first link in the long chain of utilitarian philosophers, including such as Locke, Bentham, Hume and Mills (and eventually Rawls), and that the emergence of positivist sociology can be explained as a sort of counter-revolution to that (i.e. Parsons 1937, 95-102; Wrong 1961). However, although the centrality of an individual was present in *Leviathan*, it would be tenuous to consider Hobbes as a typical utilitarian, as, for example, Parsons (1937), Wrong (1961) or Lukes (1973) seemed to do. Hobbes did not presuppose the usual utilitarian assumptions, such as that maximising utilities would be the most important principle of individual choice-making, or that people would try to optimise utilities, as is often assumed, for example, in today's rational choice thinking. If he were ready to follow any version of the utilitarian thought, it would be to argue that people tend to minimise insecurity in life if possible. This kind of version of utilitarianism, however, is almost the exact opposite to the maximising or optimising of utilities. (Camic 1979; Mayhew

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<sup>15</sup>It may be possible that these fallacies were conducted consciously. For example, Edwards (1969) has pointed out that Hobbes was presumably consciously using language and terms already available in order to make his arguments stronger; for example, the concept of natural law was needed to make the concept of civil law understood. These kinds of dependencies on other contemporary thinkers can probably explain a good deal of circularity. If one looks at the original text of Hobbes, the already mentioned trust, for example, was not in any way a more central explanation of social interaction than that of the will for security. However, it is usual to consider trust itself as the final explanation of social cohesion. That assumption has influenced most social scientists (especially sociologists) up until Luhmann and Giddens (Lagerspetz 2000). The reason for this is probably because the concept of trust resembles some other assumptions that are often taken for granted in the social sciences, such as altruism and reciprocity.

1984; Giddens 1996, 128-129; see also Alexander 1978; Levine 2000; Bauman 2000.)

In Hobbesian theory there was room for both the individual-level of explanation, such as promoted by the utilitarians, as well as for the societal-level, underlined by the positivist social scientists. As, for example, Camic (1978) and Mayhew (1984) note, most early utilitarian thinkers, especially those under puritan influence, did not yet exclude the context of social from their view of human action. The utilitarian thought itself should be analysed referring to a moral philosophy according to which a morally good act is something that promotes the greatest good for the greatest number of individuals (Camic 1979). Already Max Weber ([1921]1978) had pointed out that for puritans, freedom was possible only inside the sect. In a similar way, in most utilitarian writings, freedom of an individual was usually understood as covering only the free men in the social context they were located within.

Later, the social aspect was blurred with utilitarian tradition. Already Locke, who in turn had a much stronger influence on later utilitarian liberalism, watered Hobbes' way of thinking about the centrality of social interaction, and emphasised the importance of individual motives in *Leviathan* (Edwards 1969, Granovetter 1985).

The origin of utilitarian assumptions within economics is usually connected to Adam Smith, and especially to his *Wealth of Nations* (pub. 1776). However, the case of Smith was similar to other early utilitarians. It is often forgotten that Smith neither simplified his concept of action to the level of simple, egoistic utilitarian actor. In literature this fact is referred to as the "Adam Smith problem". (Raphael - Macfie 1974; see also Toivonen 1982; Sobel 1997.)<sup>16</sup>

When compared to Smith, the case of his contemporary Jeremy Bentham was different. Bentham is often considered as a kind of "worst case" example of pure, utilitarian thought, often considered also as a hedonistic version of it. His starting point was the same as most utilitarians, "the greatest happiness for the greatest number". However, Bentham did not – for example – see any clear contradiction between the happiness of community and the happiness of individuals. (Fenichel Pitkin 1990.) Bentham can be considered as one of the few examples of utilitarians truly neglecting the importance of social explanation. For philosophy, his type utilitarianism was never a real source of inspira-

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<sup>16</sup>Although in "*Wealth of Nations*" (WN) Smith's concept of individual action was filled with selfish egoism, in his prior "*The Theory of The Moral Sentiments*" (TMS) this was not the case. This is in fact true, even if one compares the editions of TMS before and after WN (first edition 1759, the last 1791); it can be noted that Smith's understanding of human behaviour did not change fundamentally, although Hume's philosophy had a strong impact on it. In TMS, individual action is guided by various motives, such as self-love, and especially, of sympathy, very similar to those used by Comte a little later. As Raphael & Macfie note, a simple reason for the difference between the books seems to be that WN was considering human activity in the field of economic action. (Raphael - Macfie 1974.)

tion, at least not before late 20<sup>th</sup> century (see Russell [1946a,b]1997a,b, 360). Bentham's influence was, however, closer to everyday life in modern societies than the work of most philosophers of the 19<sup>th</sup> century, for example, because of his work on punishment and schooling systems and eventually, the generalisation of economic principles in everyday life in "late modernity" (Fenichel Pitkin 1990).

### 2.4.3 Positivistic sociology and individual-level explanations

For example, according to Camic (1979), the positivistic tendencies towards the *explanation* of social interaction were not too frequent among early utilitarians, although they neither excluded the possibility of this type of explanation. The utilitarians were not interested in the problem of social integration in other forms other than in the connection to the "higher" goal of the greatest happiness. The tradition of searching for "laws" based on social explanation is strong within sociology and has its origins in Hobbes' idea of "natural law". This part of the Hobbesian heritage can be considered as being continued by sociologists. It seems to be that in the earlier phase of his career, August Comte, the founder of sociology and the positivist science<sup>17</sup>, was trying to get past the circularity of Hobbesian thought by assuming that the explanation of the existence of social phenomena is in the need of people to interact with each other. However, his solution was not at all better. The significance of the study of the social phenomena was reduced to "*desire to do good*", "*inherent tendency to universal love*", "*self-love*", "*social sympathy*", and in general, to laws about human life, which in their turn were necessary to consider mostly as being based on the *ad hoc* assumptions as the proper means of testing these assumptions were not available. (See Comte 1848; Giddens 1996, 158-159)

The search for social laws was also sometimes combined with utilitarian individual-level explanations. For example, John Stuart Mill, often considered as being a "classic" of both political economy and utilitarian thought, was very strongly influenced by the thinking of Bentham (Russell [1946a,b]1997a,b, b256; see Mill [1893]2001). However, Mill was also a positivist, in search of general laws of human behaviour, just as his other source of enthusiasm, Comte, was. This is why Mill is also often considered as one of the classics of sociology, too. What was witnessed in Mill's social sciences was a combina-

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<sup>17</sup>Although positivism is often connected to various different ideas in the social sciences, it is here understood simply as a social scientific goal to find laws like those in the natural sciences, and thereby as something that should be distinguished from empiricism or logical positivism.

tion of the utility principle with the belief of the possibility of finding laws of social life. So, the logic that followed was simply:

1. general social phenomena can be presented in the form of laws,
2. utilitarian action is a general social phenomenon, and
3. utilitarian action can be presented as a law.

(See Mill [1884]1971, 58, 147.)

For the use of political economics, this kind the deduction seemed to be sufficient, and is sometimes considered as such even today (see Granovetter 1985). If there is something other than utilitarian action, it is only residual and not necessary for the analysis of social-level phenomena. This kind of thought is already extremely close to that of some modern economists, such as Milton Friedman, but seems to be exactly the reason why, for example, Hayek criticised the usual assumptions seen in economics (see Birner - Ege 1999).

As it can be read from Durkheim's writings, at least during the earlier phases of his career, Durkheim searched for similar laws, but without the utilitarian assumption (Durkheim [1892]1997, 17e-20e; Durkheim [1895]1977, 144-148; an example see Durkheim [1893]1990, 359-364). Sociology was all about discovering the rules that explain social phenomena. However, his solution was a little more realistic than that of Comte's. Like Comte, Durkheim assumed that in social interaction something more than just the sum of its parts emerges that couldn't be deduced from the qualities of its parts, individuals. This is referred to as the social explanation *sui generis*. (Giddens 1996, 159-161.) The principle as such is understandable, but in fact, it seems to be (or at least Durkheim is often understood like that) considered as the sign how he actually purposefully excluded the individual actor from sociological analysis altogether.

According to Luhmann, Durkheim's original intention was nevertheless to begin a research programme that would be able to combine the explanations applying individualism and communitarism from ideological systems with empirical problems (Luhmann 1984, 260). However, this research programme was not followed during the later phases of his career. The reason could be that Durkheim was forced to exclude the non-nominalist concept of the individual, central to Comte. What followed was not that imaginary explanations were excluded, but that they were explained by a new, social context (Maffesoli 1993). God was replaced by "*Society-God*" already by Comte, and this was accepted – or at least not refused – by Durkheim; society was understood as a kind of *God term* (Wernick 2000; Mayhew 1984).<sup>18</sup>

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<sup>18</sup> It is also claimed that "*post-modern*" tendencies in sociology are explained by the "*second death of God*" in continental sociology; the socio-theological assumptions about the role of society have been fundamentally challenged (Wernick 2000).

Of course even Durkheim was unable to exclude the individual from his explanations altogether. For example, Boudon (2001a) points out that when actually explaining social phenomena, Durkheim was not able to be completely anti-individualistic, but actually used a type of explanation often connected with methodological individualism. (See Boudon [1990]1994, 2001a on Durkheim's explanation on magical beliefs.) Also, as it has already been pointed out, Durkheim himself tended only to deny the “*egoistic cult of individualism*”, not individualism in general (Durkheim [1898]1969). The often considered exclusion of the individual in Durkheim's texts was at least to some extent a result of a practical limitation of the field of study rather than a follow-up of the general philosophy denying individual-level explanations altogether.

#### 2.4.4 Double paradigm and the seesaw-effect

The phenomenon of which historical background was outlined above is called the “*double paradigm of individual and society*” by Luhmann (1984, 260). It can be seen that utilitarians and positivist sociologists believed to be underlining different sides of the same area of interest. While utilitarians underlined one type of social interaction, that of seeking utilities, early positivist sociologists tended to stress the explanation of social interaction with social-level phenomena. They did not exclude the possibility of each other's point of views altogether, but stressed different topics, another “*individual motives of action based on utilities*”, another “*social laws*” or regularities. Thus, the distinction between individual and social paradigms was born because of a rather pragmatic setting up of boundaries in the field of inquiry.

This division of tasks can, however, easily lead to false assumptions, because it seems to suggest that individual and social explanations exclude each other not only as the main areas of the types of research, but also as the types of explanation. The types of explanation are interpreted as opposite ends of the same dimension, not as two different dimensions giving the possibility to a whole set of combinations. It is assumed that one does not need, or even that it is impossible to combine, individual-level selection mechanisms and social-level generalisations as part of the same explanation.

This dichotomous character of the types of explanation had an interesting counterpart in the methodological development of sociology and economics. The probabilistic “revolution” that had its impact in other sciences at the beginning of the 20<sup>th</sup> century had a very limited role in both sociology and economics, although it could have been used in order to provide a solution for the individual-social-dilemma (Oberschall 1987, Morgan 1987, see also Lazars-

feld - Oberschall 1965). It may be that this problem of integrating individual- and social-level causes was not considered as a problem at all but as a solution for the problem of the division of work between the two social sciences.

The result from the concentration mainly on social-level explanations is that sociology is often considered to be influenced only by the fallacies related to assumptions with too strong social determination. This is also why part of sociology can be considered as following the deterministic paradigm, although it can be argued that the interactionist paradigm has been, and still is, another main paradigm of sociology (see Boudon [1977]1982, 153-159). When sociologists are assumed to be too much concerned with the social dimension, the natural follow-up is that social scientists feel obliged to consider individual-level explanations just in case, even if many times there are obvious societal-level changes that would have much greater significance as an explanation of a problem. Thus, the follow-up from the underlining fallacies of the social explanations and assuming the social-level explanations to be parallel to individual ones creates a seesaw-effect; the emphasis on the fallacies of individual-level of explanation is reduced in an unnecessary way when the social ones are concentrated on.

## 2.5 The diagnosis of the crisis

It has been argued above that the crisis in sociology (for example, Gouldner (1970), Boudon ([1971]1980), Giddens (1996), Goldthorpe (2000)) can be at least partially explained by the seesaw-effect created by the so-called “*double paradigm*” of the social sciences. While critiques of the social sciences have often underlined the problems above as the fallacies of oversocialised explanations – and often quite correctly so – an important class of the fallacies, namely the fallacies of overindividualised explanations, receive too little mention. It can be said that even if the usually referred fallacies of oversocialisation are avoided, the explanations may still remain biased in a way that makes the theory only partially valid because of the fallacies of the overindividualised explanations. This has also effects on the generation of general-level theory – it is almost if it was assumed that a general theory covering both sides is impossible to form. As it will be described in more detailed manner in Chapter 5, it may even be that assumptions about the double paradigm – meaning that individual- and social-levels of explanation are understood as opposite to each other – have influenced the most advantageous general level theory of today, namely to rational action theory.

In this chapter, both the fallacies of oversocialised and overindividualised explanations were described. The emphasis was on the overindividualised ex-

planations, because it was argued that this group of fallacies have gained too little emphasis in the discussion about the problems of explanation in the social sciences.

There are three permanent factors that can be understood as the breeding ground of overindividualised explanations of social phenomena in modern societies. First are individualist values, and second are individualist doctrines. The third, the procedural character of individualism, is in fact also a doctrine, but so much has been emphasised in recent social scientific discussion that it can be considered alone as the third factor behind overindividualisation. Although the *zeitgeist* interpretation of individualism can be disputed, its permanent features are rather undeniable. The political phenomenon called *individual overload* may be considered a time-bound reflection of overindividualism.

Both types of fallacies are combined by the *double paradigm of individual and society*. According to this view, individual- and social-levels of explanation should be considered parallel to each other. Because it is assumed that the social sciences can effectively get information only about social phenomena and that there are other sciences taking care of individual-level explanations, social scientists do not usually test individualistic explanations. However, arguments about the oversocialised concept of the actor in the social sciences force the social scientist of today to consider individual-level explanations as necessarily, even when the validity of these explanations is left untested.

The follow-up from this is that the individual-level of explanation can be accepted as *a priori*, whereas social explanations are always required to be verified before they can be accepted. In the case of *zeitgeist* individualisation, the one-sided discussion about fallacies empowers the beliefs about especially individualistic properties of the contemporary societies of today.

There are strong reasons to believe that false assumptions concerning unrealistically strong impacts of the individual actor over social phenomena can be even much more commonplace phenomenon than false assumptions concerning the effect of social structures in the social sciences today. This is simply because the argument behind overindividualisation has many more occasions to be strengthened in at least western societies, and because not too much attention has been paid to it because of the seesaw-effect and the double paradigm. It can be that these consequences, in many cases, would not have been accepted, if the biased argument behind them would be understood.

How can both types of fallacies and thus the seesaw-effect be avoided, then? If individual and social explanations were bridged together with a general level theory covering them both in a way that they would not need to exclude each other, the consideration of individual-levels of explanation would actually be highly beneficial to the social sciences. However, the social sci-

ences lack proper instruction to use the available tools available to them for bridge-building. Also, true integration is felt to be impossible, because, as it was described above, according to social scientific tradition, the two dimensions are understood as necessary but parallel to each other.

The solution that is called for has been stated many times in the criticism targeted at oversocialisation: what is needed is a sufficient theory of social action that could be easily used not only in academic contexts but also in more descriptive work within the social sciences. The fallacy of overindividualism is hard to avoid, unless there are means to estimate the effects of both social-structural and individual voluntary factors at the same time. The individual- and social-levels of explanation should not be contrasted, but truly combined. This would nevertheless require new applications and new standards for the estimation of individual behavioural impact on the same empirical models as structural reasons are used. The parts and pieces in order to do that are readily available in the form of theoretical discussion, methodological applications and conventions. What is needed is a better mixture.

Before going into detail with this kind of requirements and how they can be combined with theory, the problems following that lack of theory that could include both social- and individual-levels of explanation will be described with an example, the explanation of overindebtedness in Finland, especially after the economic recession occurred in the 1990s.



### 3 AN EXCURSION INTO THE EXPLANATION OF OVERINDEBTEDNESS

#### 3.1 Relevancy of the crisis

The crisis in sociology is not only a theoretical dilemma, but it actually affects social research in quite a broad way, as it has an impact on the types of explanations that are search for and which of them are considered relevant. Through research, it also has wider social (policy) relevancy, as social research is not only a tool for social scientists, but also for civil servants and politicians. In order to get a more detailed picture about the effects of the crisis of sociology on contemporary research, an example from the area of social research, the explanation of overindebtedness, will be considered here.

Overindebtedness is a good example of social phenomena in relation to which individual- and social-levels of explanation are often presented in a somewhat dubious manner. This is because the applied social-level explanations are based on the knowledge acquired from social research, whereas individual-level explanations are more or less fully based on *a priori* taken assumptions. Because *being in debt* is obviously dependent on *taking on debt*, and thus dependent on individual behaviour, it is easy to assume that a valid explanation of overindebtedness would also be based on the voluntary actions of individuals. However, it has been shown in various studies that the causes of overindebtedness are often social-level factors, also other than just the level of debt and income.

From the point of view of the fallacy discussions, studies of overindebtedness seem to fall into a trap of applying oversocialised explanations, as the research usually applies only to social-level data and is thus able to verify only them. On the other hand, this seems to also result in the fallacy of the overindividualised explanation, because individual-level causes, if assumed, are guaranteed an *a priori* status because of the lack of research information. Thus, the seesaw-effect described in the previous chapter occurs easily.

In this chapter, the explanations of overindebtedness proposed mainly in Finnish discussion will be analysed closer. Before that, the type of society in which debt problems today mainly seem to be connected with, the debt society, is described. After that, the explanations of the rise of debt problems in

Finland in the 1990s will be presented and compared to the explanations found elsewhere. A special group of often proposed individual-level explanations, related to so-called *activity hypothesis*, and in contrast to social-level explanations, will be outlined and analysed closer on a theoretical level. At the end of the chapter, a less fallacy-sensitive way to study overindebtedness – both by integrating individual- and social-levels of explanation – will be proposed.

### 3.2 The debt society

The possibility of using credit and bank debt as a means of managing personal or household economy is a normal condition of everyday life in modern, contemporary societies. For example, in Finland approximately half of all households have some form of debt (see Muttillainen 2002, 106). If only the population of active working age is considered, it is quite safe to argue that being in debt is more usual than not having any debts at all.

There are various situations in life in which getting into debt is more or less a requirement for getting involved in a certain type of activity. For example, if an average person is going to buy a car or a bigger flat, it is quite likely that one needs to take a loan in order to be able to do that. Although buying a flat is of course a voluntary process as such, using credit in order to do that is usually a necessity. However, getting into debt cannot always be explained by necessity. There are obvious voluntary motives for it, such as convenience and economic benefit. Part of the explanation of why being in debt is so common is the simple fact that credit makes life easier. This phenomenon is especially evident with credit cards; it is convenient to be able to pay, for example, in a restaurant even if one does not have enough cash in one's pocket. A side effect of the convenience of using modern forms of credit, such as credit cards, is that they are often used without even thinking them as a form of debt. For example, George Ritzer (i.e. 1995, 23-25; 2001) has noted that people are in fact living in a global credit card society without even considering credit cards as anything other than a means of payment. This is also the reason why some unwanted side effects, for example, credit card fraud and the problems of paying the credit back, may come as a surprise for some credit users. In some occasions, credit and loans can be used in order to guarantee a clear economic benefit, like in the case of corporate acquisitions, although in average everyday life these occasions are probably quite rare. However, it cannot be argued that in buying a flat, there is also not this kind of motive involved.

It is helpful to distinguish the formal type of getting indebted, typical to modern societies, from informal types of it. The latter is a more traditional way – one is in debt to another person. The formal type refers to a situation in

which one owes money not to another individual or real human being, but rather to a more or less abstract collective subject capable of legal action, such as a bank or a commercial enterprise. The relationship of a company to a debtor resembles Max Weber's byrocratic domination and the spirit of rational byrocracy in the context of economic power (Weber [1920]1978, 225-226, 944, 947). The formality is underlined when the credit company is trying to be efficient and impersonal in its relation to the debtor. It may be expected that this kind of form has prevailed since the beginning of modernity – but, for example, in Finland only after the Second WW (see Muttilainen 2002, 70). The main difference between informal and formal types of debt is the absoluteness of the latter; debts are always precise in amount and also never forgotten, unless this involves another formal act, such as a legal decision made by the Court in the case of the voluntary negotiated settlement of debts.

Being in debt always involves of course an economic risk. One of the characteristics of the modern market society is that the risk is also juridical, because all formal debts that remain unpaid for too long can be collected enforced with a court order. In fact, it can be shown that modern property rights were developed hand in hand with the modern banking and credit system, as well as with the development of proper legal instruments in order to maintain them (see North 1990, 125-130).

In the case of informal types of debt, it is easy to see that an economic risk is also a social one. One would eventually be excluded from a social group if the debts were not paid back to the other members of the group in a reasonable time. However, it is possible to argue that the social risks are even greater with formal types of being in debt. This is because most of the social relations in modern societies are, at least in some extent, embedded in the market society, or to put it the other way around, economic institutions are embedded in social context, to use Polanyi's ([1944]1957) and Granovetter's (1985) term<sup>19</sup>. A person who is not paying the debt on time is not only driven out from a certain peer-group of economic actors, but also from the credit using market economy as a whole. Thus, the effects of the formal economy are not restricted to a small part of life but cover wide areas of it. The importance of the social problem of overindebtedness in modern societies is apparent.

Overindebtedness refers here simply to a situation, in which the economic unit in consideration (for example, person, family or firm) does not have enough money to pay the debts after other necessary cost are reduced from the funds. Individual persons will be concentrated on here. It is also usually assumed that debt problems have to have continued for a fairly long time in or-

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<sup>19</sup>Usually embeddedness is connected to Polanyi's book *The Great Transformation* (1957), although it has been noted that the concept itself is presented in the book only twice (see Barber 1995).

der to consider someone overindebted. Overindebtedness is not only an economic, but also a social and juridical, as well as political problem, which is often expected to be caused by the economic malpractice of an individual actor. (Wilhelmsson 1990; Niemi-Kiesiläinen et al 1991; Muttilainen 1991; Huls 1993; Huls 1997; Iivari 2000; Muttilainen 2002; Koljonen 2002, 16-19.)

### 3.3 The rise of debt problems in Finland

The debt problems connected to the formal type of being indebted have been well known for a long time even in Finland, despite the fact that the modern banking system itself landed in the country only at the turn of the 20th century. The debt problems of farms were considered as one of the key social problems of society already in the 1930s during the first "Great Depression" (Kalela 1987; Hjerppe et al 1993, 15-16). However, these complications established their position as a part of the central social problems of the society much later. In Finland, this occurred only in the 1980s, when the loan system was step-by-step freed from state control, meaning that even the banks could bargain freely with private persons, for example, by having the possibility to bargain over interest rates more or less freely. As Figure 1 shows, the amount of household loans began to rise extensively after 1985, reaching its peak in 1989. By the end of the latter year, the amount of household loans was double if compared to the late seventies and early eighties, and had become over five-fold if compared to the numbers two decades before. Thus, by the end of the 1980s, there was suddenly a need for legal forms of dealing with the problem of overindebtedness, especially a need for the legal rules of the voluntary negotiated settlement of debts between the debtors and creditors (see Niemi-Kiesiläinen et al 1991; Muttilainen 2002).

In the early 1990s, Finland suddenly experienced the second "Great Depression", which was actually much harder than the previous major recession experienced in the 1930s<sup>20</sup>. The impact of the recession on loan taking can easily be seen in Figure 1 as the diminution of the amount of household loans. In Finland, debt problems were not only seen as the follow-up of the recession, but sometimes even as the actual cause of it. Later on it has been shown that although the high rate of debt was one of the causes making the economic situation worse, the two most important reasons for the recession were two external shocks, the simultaneous decline of both western and soviet markets,

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<sup>20</sup>According to, for example, Heikkinen & Kuusterä (2001), the recession of the early nineties was harder than that of thirties in Finland, but less severe than the recession of the thirties in the United States.

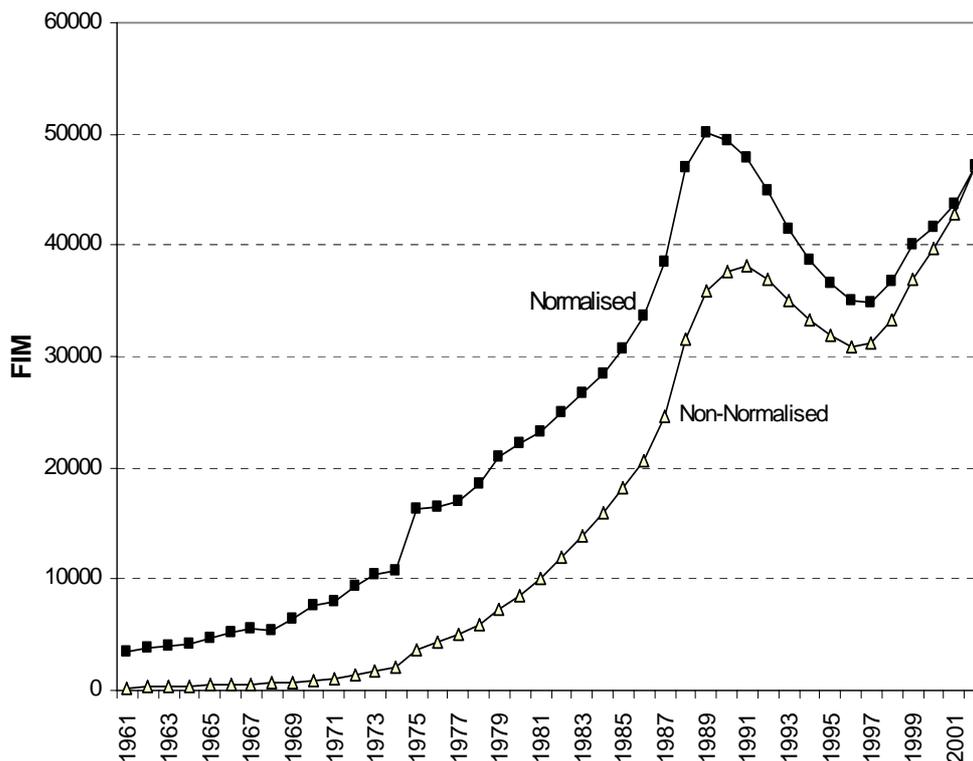


Figure 1. Amount of household loans in Finland 1961-2002. Both non-normalised amounts and amounts normalised with the size of the population aged between 15-74 and the life cost index estimated by Statistics Finland to the equivalent numbers in 2002. (Datasources: Muttillainen 2002; Statistical Yearbook 2003; Työpoliittinen aikakauskirja 2003.)

of which the impacts were worsened by bad decisions in fiscal policy (see Honkapohja - Koskela 2001).

Because of the economic recession of the 1990s, Finland is different from many other western countries in respect to the growth of the social problem of indebtedness. Often the phenomenon is associated only with the expansion of consumer debt and the increase in personal borrowing (Webley - Nyhus 2001). The rising number of debt problems is usually considered as an unwanted but necessary anomaly of the modern consumption-oriented culture of everyday life. In Finland, however, the phenomenon occurred in the same phase with expansion of more "traditional" social problems, such as poverty and unemployment. Thus, it was clearly one of the smaller scale unwanted social phenomena caused by macro-level institutional problems. Evaluations about the extent of overindebtedness in the 1990s have varied. According to the estimates based on various survey datasets, the rate of overindebtedness was evaluated as ranging from 200,000 to 500,000 persons. However, the pattern of change in the rate of overindebtedness was assumed to be relatively similar

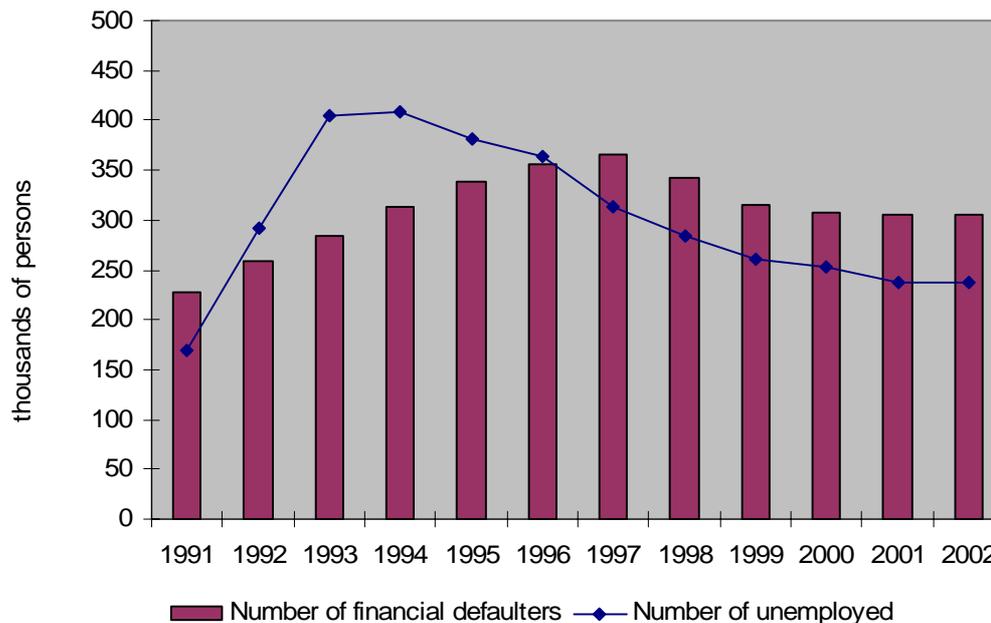


Figure 2. Number of financial defaulters and unemployed since the beginning of the nineties in Finland. Sources: Suomen Pankkiyhdistys 2001; Suomen Asiakastieto 2003; Statistics Finland 2003a.

in most studies. It seemed that the rate got higher at the beginning of the nineties, but has become smaller after the mid-nineties. (Mutttilainen 2002.)

Figure 2 shows what happened in overindebtedness in Finland in the 1990s according to one indicator of overindebtedness, the number of financial defaulters. Because the numbers in the figure are based on the registration of financial defaults acknowledged with court orders, it can be argued that it shows the trend in overindebtedness better than the approximations based on surveys. According to this measure, debt problems became more usual until 1997 when the trend changed to diminution. It can be seen from Figure 2 that the year 1997 was also the moment when the amount of household loans finally began to rise again. For example, unemployment, which can be seen as a one of the central causes of income-based debt problems (i.e. income drops dramatically because one is laid off and there are no free jobs because of mass unemployment) had begun to drop already in 1994. As the level of unemployment has remained at the same level for couple of years, also the number of credit defaulters has remained at the same level<sup>21</sup>.

<sup>21</sup>Credit defaults are registered approximately three to six months after the original deadline for paying the debt has occurred. The changes in unemployment rate should be expected to affect the rate of credit defaulters with a slightly longer delay than that.

### 3.4 The causes of overindebtedness according to social scientific research

If compared to each other, most of the studies on overindebtedness in Finland since the beginning of the 1990s have referred to similar social conditions or situations in which debt problems are more usual than in others or in which the risk of overindebtedness is higher than average. The social conditions of this kind are unemployment, divorce, single parenthood, low education and working class position, whereas the similar economic situation was one's belonging to the lowest income quintile (Muttillainen 2000; Reijo 2000; Muttillainen 2002, 111-117). Most contradiction is associated with the connection of age to overindebtedness. Although empirical results mostly indicate that debt problems are most usual in the age group 30 to 50 years old (Kangas - Ritakallio 1997; Marski - Mäensivu 1998, 54-55; Erola 2000; Iivari 2000; Lindholm 2001; Muttillainen 2002; Koljonen 2002), in contemporary discussion it is occasionally proposed that overindebtedness should be considered especially as a problem of young people (for details see Iivari 2000; Wilska 2001; Koljonen 2002; Wilska - Virtanen 2002). The reasons for this contradiction will be discussed below.

The list of social conditions in which overindebtedness is most likely to occur also shows that, despite economic crisis, the causes of the phenomenon had remained relatively similar if compared to other studies. In 1991, the conclusions of some of the first Finnish studies on the topic were that the cause of overindebtedness was primarily low-income levels. In low-income groups, the risk of overindebtedness was also easily increased with other risk factors, such as unemployment, divorce and deaths of family members (Leskinen 1990; Niemi-Kiesiläinen et al 1991, 25). Similar causes of overindebtedness have been found in various studies in western societies at least from the beginning of 1970s (Caplovitz 1974; Holzcheck et al 1982; Wilhelmsson 1990; Graver 1997; Waller 2001; Webley - Nyhus 2001).

The social conditions related to overindebtedness are such in which a person should be considered as being in a worse life-situation than people on the average even without having debt problems. Therefore, it has been considered to be important to avoid a *deterministic* explanation of overindebtedness in the context of these conditions, for example, in order to avoid too emotionally "coloured", too straightforward or unjustified interpretations of the causes. (See Wachter 1997; Muttillainen 2000)<sup>22</sup>. It can be said that this kind of stra-

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<sup>22</sup>This is also a common strategy to distinguish social scientific knowledge from everyday life knowledge: one uses different strategies and restrictions of the area of application in order not to make too big generalisations (Uusitalo 1991, 14-19; Toivonen 1999).

tegy usually satisfies both humane and professional needs of the social sciences (see Merton 1968, 27-29).

If the arguments about the fallacies of explanations are paid attention to, one should expect that there is a considerable risk of applying oversocialised explanations when the causes of overindebtedness are considered. This is because only the social-level phenomena are considered in the empirical analyses of overindebtedness.

### 3.5 Individual-level explanations and the activity hypothesis

Although individual-level explanations have not been analysed in empirical studies concerning the causes of overindebtedness, this does not mean that they have been ignored. At least four types of context can be distinguished from the Finnish research and public discussion concerning debt problems, in which the threshold to apply the *a priori* taken individual-level explanations seem to be low because of the internal characteristics of the context.

*A. Expertise.* The first context is the situations in which the validity of the individual-level explanations is enforced with the authority of expert statements, such as the authority of the debt or credit counsellors'. It is believed that this group has first-hand knowledge about the processes of becoming overindebted. However, it can be easily understood that the experiences of credit counsellors can hardly be generalised and tend to seek individual-level causes because of their working practices.

For example, recently there have been claims that the most problematic group of overindebtedness would be young people. This assumption has mainly been based on the observation of the credit counsellors' that the young have become the biggest group of their clientele (see Iivari 2000; also Koljonen 2002). However, empirical studies have at least this far referred to the opposite direction; overindebtedness is more frequent in older age groups and that the young are actually quite responsible as consumers (Koljonen 2002; Wilska 2001; Wilska - Virtanen 2002). The main reason why the credit counsellors' view differs from research results is in the characteristics of the clientele of credit counselling. In order to get into the official juridical system of the voluntary negotiated settlement of debts, the debtor should usually have steady income, usually from work. The young have a smaller likelihood to have permanent occupations. This suggests that the young are overrepresented in non-judicial credit counsellor systems because the clientele is "naturally" biased.

If the trust on the biased observation of the counsellors' is strengthened with a belief about the individualisation of everyday life, the individual-level ex-

planation gains more weight in the interpretation than it should have; it may be assumed that *zeitgeist*-related individualisation has the strongest impact on the youngest generations, which is why individualisation can be assumed to be also the explanation for their over-representation.

It may be argued that the credit counsellors easily make overindividualised assumptions because of the usual practices the "self-help groups" apply. These practices in turn can be associated with the various doctrines of individualism (see Bellah et al 1985; also Chapter 2). For example, in the mid-nineties persons in *Martta*-association's voluntary credit counselling group were interviewed for a study of credit defaulters. Even if five out of six interviewees had debt problems because of unemployment, divorce or/and death of a close person, the counsellors applied a formula familiar to Alcoholics Anonymous as the key to economic resurrection – personal confession, catharsis, a common identification and getting out of guilt. (Erola 1997, 55-57.) The reason for this kind of practice seemed to be simply that AA-practice was considered as fitting for all social problems. Because of this method the problem was individualised unnecessarily in the cases where the cause of the debt problems obviously was a change in social conditions.

*B. Legal context.* The second example of the context in which individual-level explanations have been provided an *a priori* status comes from the changing of the law on the voluntary negotiated settlement of debts in Finland in the mid-1990s. The law came into operation in 1993. It included a clause that credit arrangements were not allowed in the cases of "*obvious frivolity of indebtedness*". The reason for this clause was simply that it was believed that it could be used in order to exclude the cases of criminal overindebtedness (for example, persons that had committed credit fraud) from the persons acquiring settlements. However, it was soon felt that the exclusion of only the criminal way of getting overindebted was not enough; too *easy* payment programmes should also be excluded by excluding certain groups. For example, the unemployed with no property were often a group that did not have to pay anything if they were accepted in the settlement programme, because they were always entitled to at least a minimum income. In the report of *Standing Committee on Law* in 1996 it was stated "(...) *the credit arrangement does not encourage to pay back debts, the confirmation of the credit arrangement programme is apt to passivate debtor. Part of the debtors reaches for the nil-payment programme with the inappropriate means.*" (LaVM 19/1996]; see also HE 180/1996.)

It is striking that, according to these reports applied in law-drafting, it seems to be that it was not even considered that one could trust that the legal authorities (judges and other persons involved in process) were able to exclude these "inappropriate" cases from settlement. Thus, the possibility to settle

debts was taken away from certain social groups on the basis of their social position with minimum income. The reformulation of the law caused students to be practically always not allowed to settle and the amount of the settlements of the unemployed reduced significantly (Tala et al 1994; Muttillainen - Tala 1998, 53-54).

The actual “change” followed in how the voluntary negotiated settlements were settled after the change in the law was fairly modest. However, for the current inquiry, it is important to point out the usage of term “passivate” in the citation above. Passivity-argument is hardly meaningful, if it does not presuppose activity from the group that is at risk. It was inappropriate to be passive (=not pay anything), although being forced to be passive probably was the origin of the debt problems – one was voluntarily or involuntarily forced to be passive in paying. Activity-passivity-dichotomy is an important distinction for the moral acceptability of actions of the debtor not only when one is becoming overindebted, but also after it. (See also Muttillainen 2002,10.)

One of the reasons why the legal system paid this much attention to the possible motives of individual cases after they had already become overindebted can be that this kind of convention is coherent with the practice of the legal authorities to claim for *onus probandi* (burden of proof) in the individual cases of accusation. This principle, among with the various other aspects in the legal system, is in close relationship with the values and doctrines of individualism (see previous chapter). It can be argued that the individualism of the legal system and overindividualised explanations in general have the same common grounds in the aspects in modern society underlining individualism (see Chapter 2).

*C&D. Populism and profit.* Also, two other types of situations in which the individual-level causes can be accepted as being *a priori* true without any further analysis can be mentioned as examples. These examples are less explicit than the first two. They can be considered as the ways to purposefully give an a priori status to individual-level explanations because it is a way to guarantee economic utilities for somebody. The examples are more or less based on the assumptions, so they should be considered as possible, but not necessarily existing forms of guaranteeing the a priori status to individual-level causes.

Let us consider the first context, populism. It seems to be that, for example, in newspapers, overindebtedness is often reported as a process of individual choice-making (see Hoikkala 2000, 5). This may be because it is easier to make a point in the news by giving it a concrete individual "face" than to present the causal chain from a social condition to an individual actor. And of course, it is not much news if the reason for the debt problems of a public person is “only” unemployment and not unacceptable or immoral action of an in-

dividual. In the end, news is also what sells newspapers and gets publicity for them.

This brings one also to the argument about profit. There are also parties other than the mass media in the market that can gain monetary utilities by underlining the individual-level causes of overindebtedness. For example, for debt collection services the widely acknowledged image of the overindebted as “credit speeders” is good for business. The area business has been a success in Finland since the recession of the 1990s (see Taloussanommat 3.4. 2003).

When individual-level explanations are applied to the above-mentioned contexts, overindebtedness is often explained with two forms of the same central hypothesis:

- *one has taken too many loans or used too much credit, or*
- *one consumes too much (on credit).*

The hypothesis will be called here the activity hypothesis of overindebtedness. The hypothesis is different from the social condition-related explanations in two aspects. First of all, it assumes that overindebtedness is a result of active, voluntaristic behaviour, and has thus the same roots as individualism in general. Secondly, it also often includes an implicit and judging moral element, which seems to argue that overindebted persons have acted irresponsibly or unstably, in a way that cannot be accepted or legitimised. The latter element of the activity hypothesis is what makes it a special case of individual-level explanation, although it is possible to point out similar aspects, for example, in the contemporary explanations of unemployment.

One of the reasons why the activity hypothesis has remained untested may be because of the permanent features of individualism attached to modernity and the reasoning of the hypothesis seems to be intuitively so valid that it does not need any further evidence supporting them. The activity hypothesis can easily be interpreted in the context of the doctrines of individualism. It seems to deny political individualism in the case of overindebted, because they are rather seen as irrational actors or as free-riders than as rational and independent individuals. It definitely assumes economic individualism to be a doctrine that the overindebted apply. It also accepts epistemological individualism, as it assumes that all actors have the ultimate and same amount of information about indebtedness and also future states of society in respect of changes having an impact on the likelihood to be indebted. It also applies varying versions of methodological individualism, usually one with the minimal social reference. It may even be argued that one can find some traits of ethical individualism from the activity hypothesis, because its promoters seem to believe that overindebted persons fail to perceive the collectively shared ethical principles obvious to other persons. In the case of the self-help groups, there are

also evident traits of the principles of the secular version of religious individualism.

### 3.6 Need for synthesis

If one wishes to avoid the seesaw-effect when overindebtedness is explained, both the individual- and social-level explanations should be included in the same empirical test, if they are assumed as relevant. The parts that connect the social- and individual-level explanations to each other often remain unnoticed. These common elements are actually two different questions, of which only one is answered explicitly, while the answer to other is assumed more or less implicitly. The first question is whether the explanation assumes voluntary activity of a person to be part of the process of getting overindebted, the second question, whether the explanation assumes the activity of a person in the process of getting rid of overindebtedness. Explanations can be arranged into four groups according to the answers, as presented in Table 1.

Table 1. Explanations of overindebtedness.

		Assumes actor in process of getting rid of overindebtedness to be...	
		<i>Active</i>	<i>Passive</i>
Assumes actor in process of getting over-indebted to be...	<i>Active</i>	Over-consumer (1)	Credit speeder (2)
	<i>Passive</i>	Victim (3)	Opportunist (4)

Explanations based on the activity hypothesis mainly consider types (1) and (2) – overindebtedness is assumed to be based on the type of becoming overindebtedness that resembles the archetype of an over-consumer or credit speeder. In the case of the *over-consumer*, overindebtedness can be explained with the miscalculation of one's ability to finance consumption. Nevertheless, the consumer is willing to pay back the debts, because one wishes to remain within the consumer market. It is an illegitimate type of getting overindebted because one seems to be too interested in satisfying the instant desires resulting from consumption, but it is at least partly tolerable, because the debtor is willing to compensate the possible costs of the illegitimate action. This type of overindebtedness is probably close to the view of the overindebted that the credit counsellors believe; the overindebted are considered to be like “*rational fools*” of Amartya Sen's classic article (Sen 1977).

*Credit speeder* refers to a morally more clearly unacceptable type of overindebtedness. This type of a debtor does not consider the consequences of taking debt at all or at least is not interested in paying the debts back. A credit speeder is a “free-rider” of the credit society, wishing to get as many utilities or as much satisfaction from the credit system as possible at the expense of others. It is a criminal type of overindebtedness that hardly gets sympathy other than that of an anarchistic kind. In particular those with populist or economic motives would emphasise these kinds of explanations.

It may also be assumed that even in the cases of social explanations – typical to social sciences – there are two caricatures of overindebted actors likely to be recognised. Caricature (3) is one of a *victim* – the change in social conditions make a person become overindebted, who is still ready to pay back the debt, whatever it takes. Social sciences easily accept similar types of explanation for almost any social problem. The main problem with this type of explanation is that it can also lead the researcher to assume that there is actually another subject within the human ability to be mean or evil, whose victim the overindebted person seems to be. Caricature (4), the *opportunist*, is the one that was probably in the minds of legislators in the case of law on voluntary negotiated settlement of debts. In this type of explanation, the change in social conditions is the cause of overindebtedness, but the actor takes advantage of the opportunity of getting rid of debts without doing anything or anyway far less than otherwise would have been doing.

Table 1 should make a conceptual relationship between the different types of explanations more easily understood. Similar typology has also been used by Huls (1997)<sup>23</sup>. It also quite effectively takes into account the possible individual-level explanations, and thereby helps to avoid the oversocialised explanations of overindebtedness.

However, there are at least two crucial problems suggesting that the actual analysis of the causes of the debt problems should not be too strongly based on this kind of typology. First, there is not too much room for fully passive explanations. Because of this, the typology can lead the analysis too easily from the avoidance of oversocialised explanation to the opposite type of fallacy, namely to the fallacy of overindividualised explanation. Even in the case of the *passive becoming / passive getting rid of* -explanation the activity of the overindebted is still assumed to be in some respect a necessary condition of persons in that kind of situation if the caricatures are applied. For example, the

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<sup>23</sup>The difference between Huls' (1997) typology and the one applied here is that a) in former the “opportunists” were not identified as a group of their own, and b) the “poor” who have to take credit in order to maintain a standard of living were separated from the group of “over-consumers”. However, it is believed here that the group of “poor” will probably have the characteristics of both (1) and (2), and thus does not need to be considered as an ideal type of its own.

caricature of the opportunist assumes the person to have utilitarian motives, and this assumes the person to actively make decisions on the process of getting rid of overindebtedness. Thus, in fact with this kind of argument, the debtors would not fit the type of “*passive in the getting rid of the debt problems*”. In order to underline the possibility that the explanation of overindebtedness can be feasible without including any individual-level causes, the analysis should rather stay on more impersonal level than the application of the caricatures require and try to seek explanations with the possibility to be generalised. These generative “truths” as regularities are sometimes argued to be the only “truths” sociology should target itself to finding (see Goldthorpe 2000, 152).

The second problem with the typology is that if overindebtedness is analysed according to it, it is easily taken for granted that there actually is a necessary connection between the two phases, and that this connection has an impact on both the process of getting overindebted and the process of getting rid of it. Because the activity thesis seems to play a role on both angles, the assumption about the necessary connection seems natural and even intuitively necessarily true.

However, the intuitive assumption can very well be fallacious. There are no guarantees that the phase of getting rid of overindebtedness will never occur to all overindebted persons. Even if it does, there are no guarantees that this phase will consist of the same type of causes than the phase prior to it. To put simply, to know the explanation of becoming overindebted does not require knowing the explanations of getting rid of it. Thus, the two phases, *becoming* and *getting rid of* should be separated at the level of explanation.

In order to overcome the problems mentioned above, it is argued here that Table 1 should be divided into two phases in which the individual- and social-levels of causes are analysed independently of the other phase. The first phase is the process of getting overindebted, which basically refers to the vertical dimension of Table 1. It can be explained with individual causes, such as one's miscalculation of ability of paying debts or consuming too much, but also by passive or external social causes, such as becoming unemployed or a sudden expansion in the costs of debts because of, for example, suddenly raised interest rates. These causes can coincide, but only one is necessarily needed in order for a person to become overindebted.

The process leads to the status of overindebted. This is one possible consequence of the different possible combinations of the causes occurred in the first process, but itself only a social condition that can coincide with other social conditions or types of action more easily than with the others. Even if the original cause of being overindebted was an individual-level cause, for example, such as suggested by the activity hypothesis, this type of individual action

will not necessarily remain as a property of the actor when one finally is overindebted. Even if the cause and the condition following it can coexist, a cause does not have to become an element of its consequence. For example, *loosing one's riches* can be a cause of *being poor*, but the former cannot coexist with the latter; whereas *spending too much money* can be both a cause and still coexist with the consequence of *being poor*.

Usually some traits of the original causes, for example, in the form of values and beliefs, can assume to be found even if only the consequences can be observed. This is crucial for the analysis to be performed here, because only cross-sectional data can be used. This means that overindebtedness can be identified only as a status *post festum* of becoming overindebted. Nevertheless, one should be careful not to take for granted that the conditions and the characteristics that the overindebted are connected with are also related to the causes of becoming overindebted – they could as well be consequences of the fact that a person is already overindebted.

The second process related to overindebtedness, becoming “normally” indebted, occurs only if the set of social conditions and the types of activity the status of overindebtedness has previously coincided with has changed. For example, a person can be in a position in which income remains at the same level, but ones life costs are reduced significantly (it should be admitted that this is a pretty far-fetched possibility), or one has a possibility to get, for example, a better job, when the share of necessary life costs from all income is reduced. The occurrence of “good” conditions is not necessarily possible. For example, getting a new job was extremely difficult for the unemployed during the recession of the nineties, especially if the person was over fifty years old with no more than primary education – odds for the occurrence of the “good” conditions were simply very weak. The social conditions of a person with the status of overindebted can also become worse; for example, the consumption needs of the unemployed can easily accumulate as unemployment continues (see Lindholm 2001).

However, as it was already mentioned, the *causes* of becoming and getting away from overindebtedness do not have any necessary connection, and can thus be analysed separately. This is also done here. Finding out whether the individual-level causes have been effecting the first phase to such an extent that they could explain becoming overindebted is the primary target of analysis in the next chapter.



## 4 CAN THE ACTIVITY HYPOTHESIS EXPLAIN OVERINDEBTEDNESS?

### 4.1 Towards the analysis of overindebtedness

In the previous chapter, the explanation of overindebtedness in Finnish social studies was examined as an example of how the problems follow from an inability to integrate individual- and social-levels of explanation in the same analysis. Two relevant groups of fallacies were distinguished: the oversocialised and individualised explanations. As anticipated according to the fallacy discussion, two types of explanation of overindebtedness were found to be applied: social condition-related and the individual voluntary behaviour-related. The latter type of explanation was referred to as the *activity hypothesis*, because it assumes individual-level, voluntary action in either taking or using loans and credit or in consumption to be the primary reason for overindebtedness. It also often assumes individual action to be somehow irresponsible or illegitimate. Social causes can be considered as passive explanations in a sense that they do not assume individual actions to be the cause of becoming overindebted, although individual actions quite naturally are involved.

It was argued that although social scientists have primarily focused on studying the social causes, individual-level causes are in some context assumed to have explanatory power, although the phenomenon has not been too explicitly tested. It seemed to be that social scientists are at the risk of making oversocialised explanations based on the type of information they have on overindebtedness. However, because of the internalised individualism of modern societies, the activity hypothesis is sometimes considered as *a priori* true, even if there is no research knowledge backing this assumption up. In order to efficiently study how well the activity hypothesis is actually able to explain overindebtedness, one needs only to apply the basic method of elaboration (see Lazarsfeld 1955; Lazarsfeld 1961). The analysis should be concentrated on the examination of individual-level causes while also taking into account the effect of the most important social-level explanations. In this way, both types of fallacies could hopefully be avoided. In this chapter, this kind of an explanatory model is tested in practice.

The research question that will be approached next is: “*Can the activity hypothesis explain that a person becomes overindebted?*” Because the actual behaviour or activity of the group that will become overindebted cannot be observed, the second best option is followed. The group of overindebted persons is compared to persons that are not overindebted with cross-sectional data. The reasonable follow-up from this is that binomial logistic regression will be used as the method of analysis.

Before the analysis, some empirical choices need to be explained; especially those related to how overindebtedness will be measured and what kind of variables should be considered as the possible explanations of the phenomenon. Then the data, the selected social-level variables, and the variables referring to the activity thesis will be described. After that the actual analysis can be conducted.

## 4.2 Measures of overindebtedness

During the recession of the nineties in Finland, it became more or less a standard in the social sciences to gather information about overindebtedness with surveys by asking whether the respondent had felt that the amount of debts had become greater than one was able to handle sometime during the last year. This kind of operationalisation focuses on the subjective experiences of debt problems. Nonetheless, *objective* measures have also been used. They focus on the relationship between income, necessary life costs and the expenses needed for loans and credits, as well as sometimes taking the effect of the amount of property into account. (Reijo 2000; Muttillainen 2002; Erola 2003).

It is relatively easy to point out the possible problems one is likely to encounter with objective measures. There are suspicions that the respondents do not tell the truth about the amount of debt or income in surveys (see Nordberg - Penttilä 2000). A reason for that may, for example, be that having debt problems is considered as embarrassing or too confidential. This is why the objective measure is usually applied only if there is register-based information about income available. However, when using register data, the problem is different: there are no possibilities to also take into account the income outside of the official taxation registers. Although this problem should not be expected to be too big on the overall population level, it can be biased to some low-income groups crucial to the analysis of overindebtedness. Even if there would not be problems with the missing income information, it would be hard to define an indisputable limit of becoming overindebted based only on debts and income. How to define what is the correct relationship of debt and income when a person should be considered as overindebted?

Because of these difficulties, it is sometimes argued that a better way of measuring the phenomenon would be to trust peoples' own approximation about the occurrence of debt problems in the past. Usually a subjective method is considered a relatively reliable measure of overindebtedness. But there are problems also with it. It is very hard to distinguish serious debt problems from being "only" in an economically tight situation. That is why according to subjective measurement, people are relatively easily considered as overindebted. There are also difficulties in the comparison of the experiences of "serious debt problems" of persons from different socio-economic groups. For example, how will the distinction between the small and big economic problems of a 55 year old person be different from those of a 20 year old person? Moreover, how should a change in the rate of subjectively overindebted persons in the population be interpreted? If the rate changes, can it be that peoples' evaluation of the limit of being in debt that is hard to handle changes, not that the actual amount of people having debt problems changes? It can be argued that none of the socio-economic background factors of an individual's life need to be changed in order to change the evaluation of when the level of debt is like this – it is sufficient that only the expectations change. Thus, the subjective formulation hardly has any such advantages that cannot be nullified by problems connected to it.

If one wishes to remain using only a single estimate, one should try to find a measurement that could get one around at least some of the problems confronted in both subjective and objective measurements. One of them is presented now: financial defaulting.

In the previous chapter it was already argued that one of the most accurate ways of measuring the change in the level of overindebtedness in society is to look at the changes in the official rates of financial defaulters (see i.e. Chapter 3, Figure 2). The reliability of this measure as an indication of the amount of debt problems in society based on strong legislation as well as on a particular role of credit information business in modern market societies.

Credit defaults refer to a person's inability to pay debts, which has been made officially and publicly acknowledged by a court order. In most European countries, credit defaults are collected and registered in private registers for different times depending on the type of one's default. Creditors "buy" information about these registrations in order to limit their financial losses by preventing the persons with credit default registering for new credit. This makes the evaluation of the change in the rate of defaults over time fairly simple, because in order to be able to provide reliable information for the creditors, the registers need to have complete coverage of the court orders of the relevant area in question. In Finland, this comparison is particularly easy, because all

major creditors, such as banks and store chains, use the services of the same registering firm, *Suomen Asiakastieto Oy*.

The Personal Data Act (Henkilötietolaki 523/1999, § 20-23)<sup>24</sup> sets the limits of registering, in terms of the types of registered defaults, the registered information and the length of registering. For example, bankruptcy is registered for 5 years, inability to pay for 4 years. During the time of registration, debtors are not usually allowed to get credit of any kind from any of the major creditors. Because Finnish law does not know the bankruptcy of an individual person, only non-human legal persons, such as firms, the debts that are not paid back to creditors during the registration time are not forgotten after the registration time is through. On the contrary, the defaults are in the latter case renewed with new court orders, although this requires the creditor to be active on the matter.

There are at least a couple of reasons why asking whether the respondent has financial defaults could be a better way of estimating overindebtedness than the usual subjective or objective measures. First, one gets a financial default only after a rather long period of debt problems, *usually* after three to four months of not being able to pay the bills. So we are not usually talking about temporary debt problems, which in their turn can easily affect subjective measures. Secondly, financial defaults are automatically registered, and the registered persons are always required to be notified with a letter when the registration has been made. The legislation on the matter is pretty strict in the way that mistakes on registrations are relatively rare. For both of these reasons it is rather unlikely that persons who do not know that they have financial default registrations would nevertheless be defaulters. Thirdly, usually having a registration means that a person is necessarily removed from the credit market for a rather long period. It is unusual that people would voluntarily restrict their ability of using credit and managing their personal economy in society in such a way. This makes it sure that the cultural value of *economic hardship* that has sometimes been reported in Finland and which refers to a fact that it is “culturally” preferred that the financial situation is not presented too good, is not effecting the results too much (see Kortteinen 1992; Erola 2003; also Nordberg - Penttilä 2000)<sup>25</sup>. Fourth, the information about the property becomes practically irrelevant for the estimation whether a person is overindebted. Typically, the property will be distrained after one gets credit defaults,

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<sup>24</sup> The Personal Data Act as (Henkilötietolaki 523/1999) is harmonised with the European Community directive on the protection of individuals with regard to the processing of personal data and on the free movement of such data (Directive 95/46/EC). There should not be major differences in laws within EU countries concerning credit default registering.

<sup>25</sup>Note that there is a contradiction in this phenomenon with fact that people also often estimate their future expected economic abilities as too positive, at least in relation to the consumption of expensive goods (Csikszentmihalyi 2000).

if there is something still left to be distrained. However, even if there was enough property to cover the debts, the credit defaults will still not be cancelled and one still remains outside the credit market for the time the defaults are registered.

One of the problems in the evaluation of overindebtedness through financial defaults is that the persons who have a registration can actually have a pretty good financial situation even if they have had serious financial problems, for example, four years before. This is because the default registrations do not diminish if one pays the debts before the registration time is over. However, even in this case, the situation of a credit defaulter on the economic market remains to be different from others; one is not usually allowed new credit until the registration time is up and surely one has had serious financial problems before the situation got better. Another problem is that the amount of debts that lead to financial defaults can vary from, say, library fees to apartment mortgages, so the hardship experienced is always relative to a person's own economic limits. This can nevertheless also be considered as an advantage of the method – the seriousness of the debt problems is related to the individual situation and resources.

Another, more serious, problem is that at least in the survey data used here, the proportion of people advising that they actually have defaults was considerably smaller than the “real” average of financial defaulters in the population (see details under next heading). It may be assumed that this is because the most problematic group of “credit speeders”, central to the activity hypothesis, will never answer surveys. The same problem exists with any survey-based measurement on every social phenomenon considered a social problem – the most problematic groups are also the hardest to reach. However, a likely explanation for not answering can be embarrassment. It has been discovered in the analysis of the experiences of credit defaulters that individual economic failures during and after the recession were experienced as especially humiliating, both because of others' as well as credit defaulters' own expectations (see Erola 1997).

If the subjective measure of overindebtedness over-estimates the problem and credit defaulting underestimates, the optimal solution would be to use both. The use of multiple measures has been suggested elsewhere also (see Reijo 2000). However, with the current dataset this is not possible. The objective method cannot be used because of the validity of the income and debt information in postal surveys is not accurate enough, and the subjective overindebtedness was not asked. Thus, only the more “critical” measure of credit defaulting can be used, keeping in mind the limitations of the method. With criticality it is meant that the measure emphasises the reliability of the cases that are classified as being overindebted to truly being in that kind of situation

with the expense of not reaching the same share of the overindebted cases that should have been reached with the sample.

### 4.3 The dataset and the variables

As it was mentioned in the introduction, throughout this study the primary dataset used will be a national-level postal survey *Finland 1999 – consumption and the way of life at the turn of the millennium* (Erola - Räsänen 2000). The survey was collected during the spring and early summer of 1999. The original sample size was 4001, from which 61 per cent were covered in the final data<sup>26</sup>. Persons under 18 or over 75 were not included in the sample. The survey can be considered as well representative of the population level.

One of the wide ranges of topics the respondents were asked about was whether they had credit defaults now or if they had had them before. From 2162 respondents who answered that question, 105 reported that they had credit defaults at the moment, 96 that they had had them before but not currently. In order not to confuse the explanations of getting rid of the overindebtedness in the analysis (see previous chapter), persons that have moved away from overindebtedness and do not have credit defaults any more will be excluded from the analysis. There was also a fairly big share of persons who did not know whether they had financial defaults (125 cases) who are also excluded from the analysis. Although this limits the amount of cases in the analysed data, in this way it is easier to make sure that the possible results refer as clearly as possible to the difference between those who do not have credit defaults and never have had and those who have now. It is not known which one really is the status of those who claim that they do not know. In the case of those who have had defaults before but not currently, it is not known whether their characteristics have changed in the process of getting rid of the debt problems or whether the characteristics existed prior to that.

Because only the economically active population is important for the analysis, persons over 62<sup>27</sup> years old and persons living with their parents will be excluded from the analysis. Also, the analysis will be limited only to those who themselves or in whose households somebody uses credit, takes loans or other debts, or has now or previously had credit defaults. In order to simplify

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<sup>26</sup> The survey can be considered to be fairly successful; until today it has produced over twenty peer-reviewed publications and monographs concerning a wide range of topics of everyday life and consumption in Finland. From 2004 onwards, the dataset will be freely available for the use of social scientists from Finnish Social Science Data Archive, see [www.fsd.uta.fi](http://www.fsd.uta.fi).

<sup>27</sup> The usual age limit for old age pension in Finland is 63 years in the public sector and 65 in the private sector. However, there are also some ways to exit to old age pension also younger than that, although this usually means that the pension will be reduced.

the research setting, it is assumed that normally in modern societies persons would not restrict their credit using possibilities unless that is based on value-based motives. These "non-normal" cases are not the ones that are the most important for the current research question.

It was already noted that the rate of credit defaulters in the data was lower than the rate of defaulters at a national level at the time. The rate according to official figures at the time of the collection of the survey was 7.6 per cent, whereas in this data the share of credit defaulters is only 5.2 per cent from the valid respondents. However, as it was already mentioned, the measure is likely to be critical in the right direction; although all of the credit defaulters are not reached, it is not likely that in the group of defaulters in the data there would be cases that are actually not in that situation. All in all it should be expected that the advantages from this are greater than the restrictions followed from the smaller case number. Nevertheless, it should be assumed that although the amount of defaulters is high enough in order to make population-level generalisations, any special groups are hard to separate from them. Given the limitations to the analysed data mentioned above, the final analysed data will have 1232 cases after the missing cases are also excluded from the data. From these there are 88 cases currently with credit defaults, which will mean that the percentage of credit defaulters in the analysed data is 7.1.

Although the explanatory power of the activity hypothesis is the main interest here, some more traditional social-level background variables need to be included in the analysis as control variables. These measures are included because in order to properly test the desired connection, all of the relevant factors possibly interfering should be included (see Hosmer - Lemeshow 2000; also Lazarsfeld 1961). This is important in order to be able to avoid the problems of the fallacies of overindividualised explanation. Only the "passive" social-level variables that have been found to be important in previous studies will be considered. Before going into detail with the variables intended to measure activity hypothesis, the included social-economic variables will be presented.

- A. *Amount of loans.* Of course, it is impossible to be overindebted without being in debt. However, when credit defaults are used as an indicator of overindebtedness, it is possible that according to that indicator, the persons who do not have any debts at all will be considered as overindebted. In *Finland 1999* –dataset, only the amounts of loans were asked (on both household- and individual-levels), and the household-level variable will be used as an indicator of the amount of debt. The effectiveness of this measure is reduced by the fact that the loans that are already under debt recovery proceedings are not considered as loans at all, and are not thereby reported at all. Also, forms of

debt other than loans (i.e. consumer credit or debt because of usage of goods) cannot be taken into account with this measure. Because the change in odds would be very small even in the cases where it could be statistically very significant, the unit for analysis is 100,000 old Finnish markkas<sup>28</sup> (FIM). As the cases in which there are no loans reported are also wished to be kept within the analysis, those cases will be included in the analysis coded as 0.

- B. *Income*. The amount of debt is not interesting as such, if it not considered in relation to income-level. Income is coded according to the older version of OECD-standardised individual income (OECD Social Indicators 1982). This means that the possible effect of spouse or other adult members, as well as the amount of children in the household, are taken into account by counting a share of single adult from the aggregated household income: household income is divided by the ratio, where one adult gets 1, other adults are weighted 0.7 and a child under 18 weighted 0.5.<sup>29</sup> Also, the cases that do not report their income are coded as having zero income, but nonetheless not excluded from the analysis.
- C. *Marital status*. According to various studies (Holzscheck et al 1982; Wilhelmsson 1990; Graver 1997; Waller 2001; Webley - Nyhus 2001) marital status has its impact on overindebtedness. However, sudden changes in this because of the death of spouse or divorce are expected to have an especially strong impact on the phenomenon. Thereby, marital status including following groups will be used in the analysis: singles, persons in cohabitation, married, separated/divorced, widowed.
- D. *Children*. It has also been shown that the risk of being overindebted is at least associated with single-parenthood (i.e. Wilhelmsson 1990; Muttillainen 2002), but maybe the number of children as such (see Erola 2000) will also have an effect. The simplest reason for this is that having a child will have a serious, continual impact on the life costs of a family. Thus, a continuous number of children in the household, starting from 0, is included in the analysis.
- E. *Unemployment & Unemployment of spouse*. The above-mentioned studies have also indicated that unemployment in particular raises the

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<sup>28</sup> Euro will not be applied, because in 1999 the currency was still FIM. One Euro is 5.9457(3) FIM.

<sup>29</sup>The respondent's OECD scaled income could be counted with the equation  $HNI / (1 + (A-1)*0.7 + C*0.5)$ , where HNI refers to the household's net income, A to number of adults in the household and C to number of children. For example, in the case where the respondent lives in a household where there are two adults and three children, we should divide the amount of household net income by 3.2  $[1 + (2 - 1)*0.7 + 3*0.5]$ .

risk of becoming overindebted. Thereby, a variable indicating current or previous unemployment (within last 5 years) will be included in the analysis. Also, a similar variable indicating the possible unemployment of spouse will be included.

- F. *Education*. The level of education has also been found to be connected to overindebtedness. Lower education refers to the higher probability of becoming overindebted. Education is included as a three-level variable: basic or less, secondary or vocational, or higher education. However, because higher education seems to give very good protection against overindebtedness, there are no overindebted in this group. This is why education is also applied as a continuous variable.
- G. *Class position*. In previous studies it has also been found that working class status often indicates a higher risk of overindebtedness. Class-position is measured according to occupation, and coded into three major levels of Erikson-Goldthorpe-classification: working class, intermediate classes (self-employed and farmers) or service & non-manual classes. In order to restrict the number of missing cases when a person does not have an occupation of one's own, the spouse's or parents' class position will be used as an indicator of class position. Using the spouse's position can be justified with affirmative matching (i.e. persons match with persons close to their own class position) and parents' class position with typical intergenerational barriers to social mobility.
- H. *Age*. Age will be included and classified in the following way: 18-30, 31-40, 41-50, 51-62. As it was already mentioned in Chapter 3, the risk of overindebtedness is associated mostly with the active age between 30-40 years. The groups roughly refer to the different phases of life during adult age, although the main aims have been to use a similar classification of age as in the previous studies with as even an age grouping as possible.

#### 4.4 Types of activity

Next let us consider individual-level variables. The activity hypothesis consists of certain components. Firstly, it assumes that individual behaviour can overrule the effect of socially-determined conditions in a way that would show in a statistical analysis the causes of becoming overindebted. Secondly, it assumes that the processes of getting overindebted could be explained by a moral or ethical differentiation of the overindebted in such a way that they could somehow be separated from the rest of the population according to the

values and beliefs referring to the morals or ethics in question. If both assumptions were right, it should be possible to observe the signs about these types of differentiation by analysing values and attitudes.

It is assumed that it should be possible to test the explanatory power of the activity hypothesis if the patterns of behaviour or making decisions characterised by certain types of voluntary action can be separated in the data. Empirically, the activity hypothesis should be possible to be observed at least in these two forms:

- a) *The overindebted evaluate or perceive risks in consumption or risks of using loans or credit weaker than others, or*
- b) *The values the overindebted connect to economic issues are different from others in such a way that could explain why somebody becomes overindebted.*

In the survey *Finland 1999*, the respondents were asked to evaluate how much risk they felt were connected to different economic operations. The amount of risk was estimated on a Likert-scale. This meant that each economic operation had answer options ranging from 1, that the operation includes significant risk, to 5, that the operation includes no risk whatsoever. With these variables, the importance of the first type of activity explanations above can be evaluated. The economic operations in consideration were:

- *Taking a loan;*
- *Standing as security for a loan;*
- *Using consumer credit;*
- *Over-consumption;*
- *Making an impulse purchase.*

There were also various attitude questions related to economic action in the survey. It may be possible that by using these attitude variables, the differences that actualise in behaviour and selection-making would be observed in a more valid manner, because the respondents are not fully aware of the type of attitudes they are expected to agree with. Thus, expectations should direct the answers less than in the case of risk estimations. The following statements were proposed:

- *I often make impulse purchases.*
- *I wish to get enjoyment/pleasure from consumption.*
- *I think it is a duty of people to consume more during the "good times" in society.*
- *Student loans are a good way of financing one's studies.*
- *It is possible to raise one's standard of living permanently by using loans in a prudent manner.*
- *Consumer credit enables a comfortable lifestyle.*

Again, respondents were asked whether they agreed or disagreed with the statements, using a five point Likert-scale. The original question sets are shown in Appendix B.

The scales of the measures are reversed in all questions from the original, in order to make it easier to interpret the results. Thus, in the following analysis, higher values will indicate higher perceived risk or stronger agreement.

In order to extract the types of the activity hypothesis-related attitudes, the associations between the variables are studied with principal components analysis, PCA, often interpreted as a type of factor analysis (see Tabachnick - Fidell 2001, 610-612; Nummenmaa et al 1997, 232). In order to extract the most typical components, all of the available cases in the dataset will be analysed with PCA, including 2206 cases after the cases with missing values are excluded.

PCA tries to extract maximum variance from the dataset with each component. The first is a linear combination of the observed variables. This combination separates subjects as much as possible by maximising the variance of the component scores. The second component is a linear combination of the observed variables that extracts the maximum variation uncorrelated with the first component. It uses the residual correlations from the first component. All following components also use the residual correlations and are orthogonal to the previous components. However, now PCA is used with Direct Oblimin rotation, because it is assumed that the variables can be associated in more than one factor only. This oblique rotation method allows the factors to be correlated with each other. Because it may be that the same persons could have high rating in various types of activity and because the factors should be connected at least theoretically by the activity hypothesis, the possibility to allow correlation between factors is advantageous. The limit for extraction of new factors is the Eigenvalue (equal to variance) of 1. (Tabachnick - Fidell 2001, 596-602; Nummenmaa et al 1997, 229-240.)

The results of the analysis are shown in Table 2. The higher absolute value of factor loading a variable has, the greater significance it has for the factor in question. The variables having loadings less than 0.3 are considered to be unimportant for the interpretation of the factor in question. The interpretation is carried out primarily referring to the marker factors, i.e. the variables having the highest factor loadings. (See Tabachnick - Fidell 2001, 587, 625.)

Table 2. Factor analysis for the variables referring to the activity hypothesis as an explanation of overindebtedness. The component loadings, the eigenvalues for extraction and the percentage of variation explained by factor. Extraction Method: Principal Component Analysis. Rotation Method: Oblimin. (N=2206)

	<i>Factors</i>			
	<i>1: Risk- percep- tion</i>	<i>2: Over- con- sump- tion</i>	<i>3: Loan- scepti- cism</i>	<i>Com- muna- lities</i>
<i>Risks – Making impulse purchases.</i>	0.385	-0.320	-0.397	0.374
<i>Risks – Using consumer credit.</i>	0.830	-0.186	0.017	0.690
<i>Risks – Taking loans.</i>	0.747	-0.028	0.120	0.590
<i>Risks – Standing as security for a loan</i>	0.760	-0.017	0.073	0.603
<i>Risks – Over-consumption</i>	0.521	-0.301	-0.314	0.413
<i>Consumer credit enables a comfortable life- style.</i>	-0.269	0.409	-0.325	0.302
<i>I think it is a duty of people to consume more during the 'good times' in society.</i>	-0.088	0.527	-0.154	0.297
<i>I often make impulse purchases.</i>	-0.122	0.698	0.092	0.501
<i>I want to get pleasure from my consumption.</i>	0.003	0.639	-0.030	0.427
<i>Student loans are a good way of financing one's studies.</i>	-0.051	0.054	-0.716	0.516
<i>It is possible to raise one's standard of living permanently by taking loans in a prudent manner.</i>	-0.140	0.207	-0.688	0.520
<i>Eigenvalues</i>	2.441	1.458	1.334	
<i>% of variance explained</i>	22.2	13.3	12.1	

The PCA separates three factors from the variables. The first can be considered as a factor referring to how the risk of using credit or taking loans are perceived, and is thereby called a *risk-perception* factor. The factor gets high loadings on each risk evaluation variable, but low on other variables. The second factor is related to the willingness to consume and also to the willingness to use credit in consumption. It gets the highest loadings on the statements concerning impulse purchases and getting pleasure from consumption. This factor will be called an *over-consumption* factor. The third factor refers to the *scepticism* towards using loans as the means of individual financial strategy – this is because the highest absolute values in the statement concerning student

loans and using loans as a means of raising the standard of living are negative. It refers also to the scepticism of using other types of credit as well.

Together these factors cover 47.6 per cent of all of the variation between the variables. The explanatory power of each factor on overindebtedness can be tested using factor scores, here derived with the most often used scoring method, the regression method (see Tabachnick - Fidell 2001, 626-627). The regression score for the risk-perception factor varies from -4.4 to 1.9, for over-consumption from -3.0 to 3.8 and for loan-scepticism from -3.6 to 3.4.

The first factor can be understood in the context of overindebtedness quite easily. If the overindebted get low factor scores on this variable, it would indicate that the voluntary explanation of over-consumer or credit speeder could be correct. If there is no difference between the groups or if the financial defaulters are more risk-aware than the others, it is likely that weak risk-awareness connected to using credit or taking debt is not a valid explanation.

The second factor, *over-consumer*, refers mainly to over-consumption as an explanation of overindebtedness, but can also be understood in the context of credit free-riding. If the credit defaulters seem to get higher values on this factor, the voluntary action related to overindebtedness in the context of over-consumption or free-riding may be a true explanation of becoming overindebted.

The third factor, *loan-scepticism*, refers to the behaviour opposite to almost all voluntary explanations. If the financial defaulters get lower values on this factor than others, the reason to overindebtedness may be too eager loan-taking and too high expectations on the ability to manage personal economy with the means of debt and credit.

#### 4.5 Analysis of the causes of overindebtedness

Because being overindebted is understood as a simple variable having only two different outcomes, YES or NO, hierarchical logistic regression is used for analysis. The odds-ratio (or as sometimes referred, risk) of being a credit defaulter, and thereby also overindebted (see discussion about measures of overindebtedness above), is evaluated by one or more quantitative and qualitative factors. The equations used for logistic regression are presented in Appendix A. The model building strategy suggested by Hosmer & Lemeshow (2000) will be used as a guideline for the analysis.

Table 3 presents a univariate test (meaning that each explanatory factor is modelled separately) for all of the relevant background factors as well as the three factors related to the activity hypothesis. The coefficient is the value that is converted to odds with logarithmic transformation. When the odds are

Table 3. Univariate logistic regression tests for the causes of overindebtedness (variables modelled separately). Coefficient and its standard error, Odds and 95 % confidence interval for it, likelihood ratio test statistic G and its significance.

<i>Variable</i>	Coeff.	St. Err.	Odds	95% CI		G	p
				Lower	Upper		
<i>Amount of loans*</i>	-0.316	0.098	0.729	0.602	0.883	14.711	0.000
<i>(Am. of loans when no-loans excluded)</i>	-0.202	0.105	0.817	0.665	1.004	4.538	0.033
<i>Income**</i>	-0.230	0.040	0.794	0.735	0.858	38.585	0.000
<i>(Income when no-incomes excluded)</i>	-0.391	0.061	0.676	0.600	0.762	52.802	0.000
<i>Marital status (ref. single)</i>						25.199	0.000
- <i>Cohabitation</i>	0.229	0.317	1.258	0.676	2.341		
- <i>Married</i>	-0.781	0.306	0.458	0.252	0.834		
- <i>Separated/divorced</i>	0.756	0.371	2.130	1.030	4.403		
- <i>Widowed</i>	0.181	0.783	1.199	0.258	5.562		
<i>Children</i>	0.151	0.063	1.163	1.028	1.315	5.290	0.021
<i>Unemployment (ref. No)</i>						41.351	0.000
- <i>Has been within 5 years</i>	0.756	0.377	2.130	1.017	4.461		
- <i>Is now</i>	1.843	0.265	6.318	3.762	10.611		

(Table 3 continued)

<i>Variable</i>	Coeff.	St. Err.	Odds	95% CI		G	p
				Lower	Upper		
<b><i>Unemployment of spouse (ref. No)</i></b>						7.224	0.027
- <i>Has been within 5 years</i>	0.504	0.447	1.655	0.689	3.975		
- <i>Is now</i>	1.015	0.365	2.759	1.349	5.640		
<b><i>Education</i></b>							
- <i>Education</i>	-0.856	0.189	0.425	0.294	0.615	21.533	0.000
<b><i>Class position (ref. Service, non-manual)</i></b>						11.721	0.000
- <i>Self-employed, farmers</i>	0.507	0.390	1.660	0.772	3.567		
- <i>Working Class</i>	0.787	0.234	2.197	1.390	3.472		
<b><i>Age (ref. 18-30)</i></b>						13.032	0.000
- <i>31-40</i>	0.669	0.298	1.953	1.090	3.500		
- <i>41-50</i>	0.194	0.320	1.214	0.649	2.271		
- <i>51-62</i>	-0.437	0.382	0.646	0.306	1.366		
<b><i>Risk-perception</i></b>						10.633	0.001
- <i>Risk-perception</i>	0.398	0.126	1.489	1.163	1.900		
<b><i>Over-consumption</i></b>						0.087	0.768
- <i>Over-consumption</i>	0.034	0.115	1.035	0.825	1.290		
<b><i>Loan-scepticism</i></b>						8.800	0.003
- <i>Loan-scepticism</i>	0.345	0.117	1.412	1.123	1.770		

*N=1232\* per 100 000 FIM\*\* per 1 000 FIM*

higher than 1, the coefficient is positive, and when the odds are lower than one, the coefficient is negative. There is a reason why both coefficients and the odds are presented. The effect sizes of variables increasing the risk are easier to compare with the variables decreasing the risk with the coefficients, whereas the odds have a more straightforward common-sense interpretation. The standard error is estimated for the coefficients. The amount of variation in the odds can be estimated from the lower and upper limit of 95% confidence interval. According to the instructions of Hosmer and Lemeshow (2000), the likelihood ratio test statistic (G) is used as a main indicator of statistical significance<sup>30</sup>. The G-ratio refers to a variable's impact on the overall -2 log likelihood of the model and p to the statistical significance of that impact. If the variable contributes to the model, the p-value is expected to be lower than 0.05, although the more relaxed limit of 0.20 is used as a limit for including the variables from univariate tests to the multivariate model. The model likelihood ratio test statistic refers to the -2 log likelihood difference between a model including only constant and a model including all the reported terms. Along with the Nagelkerke Pseudo R<sup>2</sup> it is only reported for multivariate models. The R<sup>2</sup> estimates the proportion of the variation in the dependent variable that is explained by the model. The coefficients and odds in the table indicate the change in coefficient or probability, in the case of continuous variables when the unit is increased by one, and in the case of categorical variables when compared to the reference group.

There are no big surprises in the results when the social background variables are concerned. All of the variables have significant connections to credit defaulting, as the results of the previous studies on overindebtedness have also shown. This suggests that credit defaulting can be used as well as an indicator of overindebtedness as the more usual subjective method in the surveys. It is worth noticing, however, that the connection of the amount of loans is not such that is often assumed. On the contrary, the probability of being a credit defaulter becomes smaller as the amount of debt becomes higher – the risk of being overindebted according to amount of debt is one fourth lower, when amount of debt raises by 100,000 FIM (16,818.88€). This connection does not change too much, if the persons with no debts are excluded, although the “advantage” of having more debt becomes smaller. Now the risk is only one fifth smaller for each 100,000 FIM. The reason for the phenomenon is what has already been mentioned – often debts are no longer in loan-form once the credit default is finally acquired. Also, it may be assumed that persons with higher income can also have more loans. Thus, in fact, the observed causal connec-

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<sup>30</sup> This is why the Wald-statistics are not needed for the evaluation of significance of the model and are thereby excluded from the tables.

tion is in the opposite direction than is often assumed – in the cross-sectional data it seems to be that becoming overindebted causes a person to have a lower amount of loans.

Quite naturally, the higher income level refers to a lower risk of being overindebted. If the income is raised by 1000 FIM (168.18€), the probability of being overindebted is only one fourth of the lower income. The persons who have not reported their income seem to effect results – if the persons with no information about their income at all are excluded from the univariate test, the risk of getting overindebted becomes fifteen per cent less likely than if the group was included when the income is raised by 1000 FIM. The connection is in the same direction than that which has also been found in previous studies – higher income reduces the probability of being overindebted very significantly.

According to *marital status* it seems to be that separation/divorce in particular is connected to overindebtedness. The case of the widowed seems to be different from international comparison – the group seems to be too heterogeneous to be considered as especially likely to be overindebted. Having children seems to increase the probability of being overindebted. *Unemployment* and also the *unemployment of spouse* increase the probability of overindebtedness. Current unemployment is the strongest indicator of overindebtedness according to the univariate test. Having received more *education* raises the probability of not being overindebted. There are also indications of *class*-based differences in overindebtedness; being in service or non-manual classes seems to protect from overindebtedness. Also, the effect of age group seems to be similar to the results of most studies, 31-40 years old are at the highest risk of overindebtedness. However, the results of the univariate test should not yet be considered as fixed, as part of the effect may come through the effects of other variables not controlled in the same model.

As a final stage of the univariate test, let us consider the activity hypothesis-related variables, *risk-perception*, *over-consumption* and *loan-scepticism*. Two of these variables seem to have a significant connection with overindebtedness: *risk-perception* and *loan-scepticism*. *Over-consumption* does not have a significant connection to overindebtedness. However, also in the case of risk-perception and loan-scepticism, the connections are in the opposite direction than assumed in the activity hypothesis – those already with debt problems are also the most risk-aware as well as the most sceptical towards the possibility of managing individual economy with them.

It could be argued that this is because people with debt problems have changed their pattern of behaviour to exactly the opposite than they have had before, simply because they have “*learned their lesson*” very well. This is a possibility that cannot of course be outruled with the current data – only lon-

gitudinal data could verify or falsify that. Thus, it can be considered as a problem of the research setting applying a cross-sectional dataset. Nevertheless, it is not likely that taking exactly the opposite position has occurred. Although this kind of process would be believable in the case of risk-perception, it should not be the case in loan-sceptical values. This is because, in particular, loan-scepticism should be considered as an indirect measure. It should be relatively well guarded against the expectation people have about how they are expected to answer. On the contrary, if the assumption about adjusting behaviour would hold, the direction of the effect of loan-scepticism to credit defaulting would probably have been in the opposite direction – the loans and credit would have been seen as a possible way of “getting a good life”, although the risk associated with them would have been considered as being high.

According to the results, factor referring to over-consumption can be excluded from the multivariate analysis. Already the univariate analysis of the activity hypothesis indicates that the hypothesis does not seem to find the assumed support from the analysis of the data, unless it would be modified towards the assumption about “learning the lesson the hard way”.

Next, the variables contributing significantly to the risks of becoming overindebted are included in the same multivariate model. This multivariate model is presented in Table 4. In the combined model only one of the variables becomes non-significant – social class. This is probably due to a more straightforward way of getting the same impact through the level of education as well as with income.

The effect of the amount of loans to the probability of overindebtedness does not change much from the univariate test. Still the increase in the amount of loans by 100,000 FIM indicates one fourth lower risk of being overindebted. The significance of income seems to be reduced somewhat, although the risk of being overindebted is still one fifth lower for each 1000 FIM increase in income.

The protection of being married, compared to being single, is somewhat reduced in the multivariate model. The risk of being overindebted for the married is only half of that of the single, whereas the risk for the separated/divorced is still almost double if compared to the single, and almost four times greater than for the married. Each child increases the probability of being overindebted by one fourth. This connection is actually now more significant than in the univariate model.

Current unemployment seems to increase the probability of being overindebted when compared to the groups of employed. There is no difference between both groups being currently employed. Against the background of this result it is interesting that when it comes to the effect of the spouse's unem-

ployment, both those who have experienced unemployment within five years and who are unemployed now have a higher risk of being overindebted. However, it is worth noticing that the reference group also includes persons who do not have a spouse. Even more importantly, the result indicates the severe impact of the unemployment of any family member to the economic well-being of the whole family unit. Also, the opposite effect is worth considering: overindebtedness may also have an effect on people's willingness to work. This question will be returned to in Chapter 8.

When the level of education is raised from one level to another, the risk of overindebtedness is reduced by half. This result has not changed much from the univariate test. The age group of 31-40 years old has now three times higher risk than the youngest age group of being overindebted. The age group between 31-40 years is also the only one that can be found to have a higher risk than other age groups to overindebtedness.

Neither the connection with the activity hypothesis-related variables to overindebtedness is different from the univariate test. The connection is still towards the same direction than it was before the effect of other variables was included in the same model – the overindebted perceive the risks that can lead to overindebtedness stronger and are also more sceptical towards the positive effects provided by loan taking and using credit. Thus, it seems to be that the causality between overindebtedness and individual causes needs to be considered as being opposite to that which the activity hypothesis suggests.

Finally, let us consider the effects of interactions. Only two-way interactions will be considered. In order to test whether the interaction between two variables has any explanatory power, each interaction term is tested one at the time in the multivariate model including all of the significant one-way terms. In this way it can be seen whether there are some combinations between the variables that have explanatory power that could not be anticipated without the interaction effects. The significance levels of each possible two-way interaction term between the significant variables of the multivariate model of Table 4 are presented in Table 5. There seems to be many significant interactions. One missing interaction to be pointed out is the interaction between *Loans* and *Income*. It seems to be that the effect of both variables is sufficiently estimated even without interaction to be actually considered. In other words, the effects compound but do not interact.

Table 4. Multivariate binomial logistic regression analysis for explanation of overindebtedness. Coefficient and its standard error, Odds and 95 % confidence interval for it, likelihood ratio test statistic G and its significance.

<i>Variable</i>	<i>Coeff.</i>	<i>St. Err.</i>	<i>Odds</i>	<i>95% CI</i>		<i>G</i>	<i>p</i>
				<i>Lower</i>	<i>Upper</i>		
<i>Amount of loans*</i>	-0.271	0.108	0.762	0.617	0.942	8.093	0.004
<i>Income*</i>	-0.133	0.054	0.875	0.787	0.973	6.509	0.011
<i>Marital status (ref. single)</i>						12.589	0.013
- <i>Cohabitation</i>	0.192	0.399	1.211	0.555	2.646		
- <i>Married</i>	-0.646	0.422	0.524	0.229	1.198		
- <i>Separated/divorced</i>	0.640	0.489	1.896	0.726	4.947		
- <i>Widowed</i>	0.549	0.933	1.731	0.278	10.784		
<i>Children</i>	0.222	0.090	1.249	1.046	1.490	6.709	0.010
<i>Unemployment (ref. No)</i>						15.194	0.001
- <i>Within 5 years</i>	0.087	0.437	1.091	0.463	2.569		
- <i>Is now</i>	1.381	0.343	3.981	2.030	7.804		
<i>Unemployment of spouse (ref. No)</i>						8.361	0.015
- <i>Within 5 years</i>	1.010	0.554	2.746	0.927	8.137		
- <i>Is now</i>	1.191	0.450	3.291	1.361	7.957		

(Table 4 continued)

<i>Variable</i>	<i>Coeff.</i>	<i>St. Err.</i>	<i>Odds</i>	<i>95% CI</i>		<i>G</i>	<i>p</i>
				<i>Lower</i>	<i>Upper</i>		
<i>Education</i>	-0.765	0.240	0.465	0.291	0.745	10.504	
<i>Class position (ref. Service, non-manual)</i>							
- <i>Self-emp., farmers</i>	0.387	0.461	1.472	0.596	3.633		0.262
- <i>Working Class</i>	0.428	0.269	1.534	0.905	2.597		
<i>Age (ref. 18-30)</i>							
- <i>31-40</i>	1.193	0.386	3.296	1.546	7.026	22.169	0.000
- <i>41-50</i>	0.292	0.427	1.340	0.580	3.094		
- <i>51-62</i>	-0.575	0.523	0.563	0.202	1.567		
<i>Risk-perception</i>	0.366	0.142	1.442	1.093	1.903	7.170	0.007
<i>Loan-scepticism</i>	0.304	0.128	1.356	1.055	1.742	5.747	0.020
<i>Model G</i>	141.673	p= .000					(N=1209)
<i>Nagelkerke Pseudo R<sup>2</sup></i>	0.275						

\* per 100.000 FIM

\*\* per 1.000 FIM



Hosmer and Lemeshow (2000) suggest using higher limits for inclusion of a variable in the multivariate models than the usual limit of statistical significance of 0.05, just to make sure that any relevant factors are not left out of consideration only because of some superficial significance limit. Thus, all of the interactions having a significance level lower than 0.20 according to likelihood ratio test statistic G are entered in a model including the main effects of Table 4 simultaneously. After that the non-significant terms (using the “normal” limit of 0.05 as criteria of leaving the term in the model) are excluded in a step-wise manner. Table 6 presents the significance level of each interaction term on each step. In the final step 8, there are still five significant interactions included, which are *Loans by Unemployment*, *Loans by Age-group* and *Loans by Risk-perception*, *Marital status by Number of children* and *Marital status by Unemployment*.

Table 7 shows the parameter estimates for the main effect and interaction terms where the coefficient exceeds the standard error. This means that if the term in question is compared to the reference interaction, the difference in probability of being overindebted is assumed to be significantly different. Or to put it the other way around: the groups that are not presented do not differ significantly from the group they are compared to.

The inclusion of the interactions cancels the significant differences between the parameter estimates of the main effect terms of marital status, unemployment, number of children and risk-perception. The effects of these terms can be sufficiently taken into account with the interaction effects included in the model.

In the case of the married, the lower probability of overindebtedness is explained by the fact that having children increases the probability of overindebtedness less than in the case of singles, cohabitated or separated/divorced. Surprisingly, the case of the widowed having more children increases the risk of becoming overindebted less than in the other marital statuses. The cohabitated, then again, have the lower probability to be overindebted if they are also unemployed than is the case in the other marital status/unemployment-experiences -combinations. The result seems to be meaningful, because it may be assumed that the continuing work income of the spouse will, in some cases, protect the cohabited persons from overindebtedness. The interactions related to marital status and having more children make the main-effect coefficients related to them otherwise non-significant.

Table 6. Step-by-step elimination of non-significant interaction terms. Model of Step 0 includes all of the significant variables from the model of Table 4 and all the interaction terms under the significance limit of 0.2 according to the likelihood ratio test statistic G.

Interaction term	Step 0	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
Loans by marital status.....	0.646								
- by children.....	0.133	0.098	0.073	0.077	0.065	0.078			
- by unemployment.....	0.054	0.045	0.036	0.033	0.030	0.036	0.013	0.008	0.009
- by unemployment of spouse.....	0.020	0.009	0.011	0.010	0.011	0.010	0.003	0.006	0.006
- by risk-perception.....	0.128	0.059	0.068	0.040	0.016	0.015	0.012	0.026	0.010
- by loan-scepticism.....	0.030	0.025	0.022	0.020	0.020	0.022	0.077		
Income by marital status.....	0.491	0.433							
- by risk-perception.....	0.379	0.369	0.195	0.154					
Marital status by children.....	0.070	0.066	0.023	0.025	0.025	0.036	0.043	0.048	0.031
- by unemployment.....	0.071	0.042	0.033	0.028	0.032	0.023	0.016	0.014	0.044
- by risk-perception.....	0.165	0.182	0.150	0.123	0.064	0.064	0.063	0.072	
Education by unemployment.....	0.158	0.164	0.190	0.121	0.123				
- by risk-perception.....	0.428	0.427	0.417						

Table 7. The parameter estimates for the significant main-effect and interaction terms between the causes of overindebtedness, where the coefficient exceeds the standard error. The model likelihood ratio test statistic G and the Nagelkerke Pseudo R<sup>2</sup>.

	<i>Coeff.</i>	<i>St. err.</i>	<i>Odds</i>	<i>95 % C.I.for Odds</i>	
				<i>Lower</i>	<i>Upper</i>
<b><i>Unemployment of Spouse</i></b>					
<b><i>(ref. No)</i></b>					
<b><i>- Within 5 years</i></b>	1.126	0.549	3.083	1.050	9.051
<b><i>- Is now</i></b>	1.242	0.456	3.463	1.416	8.472
<b><i>Education</i></b>					
	-0.848	0.249	0.428	0.263	0.698
<b><i>Age group (ref. 18-30)</i></b>					
<b><i>- 31-40</i></b>	1.161	0.446	3.193	1.332	7.651
<b><i>- 51-62</i></b>	-1.006	0.603	0.366	0.112	1.193
<b><i>Risk-perception</i></b>					
	0.179	0.167	1.196	0.862	1.659
<b><i>Loan-scepticism</i></b>					
	0.298	0.134	1.347	1.035	1.753
<b><i>Loans by Has been unemployed</i></b>					
<b><i>(ref. Loans by Not unemployed)</i></b>					
	-1.264	0.994	0.282	0.040	1.982
<b><i>Loans by Currently unemployed</i></b>					
<b><i>(ref. Loans by Not unemployed)</i></b>					
	-1.580	0.926	0.206	0.034	1.265
<b><i>Loans by 31-40 years</i></b>					
<b><i>(ref. Loans by 18-30)</i></b>					
	-0.520	0.210	0.594	0.394	0.898
<b><i>Loans by 41-50 years</i></b>					
<b><i>(ref. Loans by 18-30)</i></b>					
	-1.041	0.458	0.353	0.144	0.866
<b><i>Loans by Risk-perception</i></b>					
	0.310	0.133	1.363	1.051	1.768
<b><i>Children by Married</i></b>					
<b><i>(ref. Single by Children)</i></b>					
	-0.733	0.388	0.480	0.225	1.028
<b><i>Children by Widowed</i></b>					
<b><i>(ref. Single by Children)</i></b>					
	-0.772	0.470	0.462	0.184	1.162
<b><i>Cohabitation by Currently</i></b>					
<b><i>unemployed</i></b>					
<b><i>(ref. Single by Not unemployed)</i></b>					
	-1.565	1.180	0.209	0.021	2.110
<b><i>Model G</i></b>	188.488	p= 0.000			(N=1232)
<b><i>Nagelkerke Pseudo R<sup>2</sup></i></b>	0.353				

The results presented in Table 4 (and already in Table 3) show that a higher amount of loans refers to a lower probability of being overindebted. This was explained by the fact that the causal connection between the credit defaults and the amount of loans is in fact in the opposite direction than assumed. Once the credit default is acquired, the debts are no longer in loan-form, although they would exist because of the previous loans. So in fact overindebtedness is followed by a lower probability of having loans.

When the interactions are included in the model, the connection of the higher amount of loans with the lower probability of overindebtedness is actually increased. There are three interaction terms that include the effect of the loans. The significant interaction between loans and both groups that have experienced unemployment and the fact that the coefficients are negative in the case of these interaction terms mean that the higher amount of loans is actually even a stronger sign that a person is not overindebted than among those who have not had unemployment experiences. This is because in the groups of now or formerly unemployed, debts are less likely to not be in the form of loans, although the risk of being overindebted as such in the groups having unemployment experiences is higher than for those who haven't been unemployed.

Similar explanations seem to apply to the interaction between loans and the age group of 31-40 years old. This age group has the highest risk to overindebtedness, but the results also show that higher amount of loans refers in this group to a lower probability of overindebtedness than in the case of the youngest age group and the 40-50 years old. Also, in the group of 50-62 years old, higher amount of loans is a stronger sign of not being overindebted than in the youngest age group. However, otherwise the probability to overindebtedness in this age group still seems to be lower than in other age groups.

It has already been shown that stronger risk-perception refers to a higher probability of being overindebted. The risk-perception score varies from -4.4 to 1.9. When this measure rises by one unit, approximately one sixth, the probability of being overindebted is two-fifths higher than with the lower value. Again there seems to be interaction with the amount of loans, but in this case in a positive direction. If the amount of loan becomes 100,000 FIM higher, the increase of the level of risk-perception by one is one third stronger indicator of overindebtedness. This is because risk-perception is unlikely to be high among the persons who are not indebted.

#### 4.6 The causes of overindebtedness and the seesaw-effect

In the case of the social-level causes, the results show that the picture of overindebtedness drawn through the credit defaulters is not too different from

the one drawn by previous studies with subjective measures. It would be interesting to use both measures together, even possibly combined with other more traditional objective measures of overindebtedness. Multidimensional measuring would probably benefit the research of overindebtedness in the future as a way of providing additional validity, although it is hard to imagine how the results would differ from the current even in that case. The current results are so similar to the ones before with different applications.

It also turned out that empirical support for the activity hypothesis could not be found in the current analysis. The overindebted have only become more risk-aware and sceptical about taking debts, which refers to the opposite causal direction that the activity hypothesis seemed to assume. If the results could be strengthened with different variables and datasets and would thus be found to apply to overindebtedness in general, it would mean that the activity hypothesis could only be saved with additional arguments that the overindebted have been frivolous in the past, but have learned their lesson the hard way. Thereby, although the results suggest that the version of the activity hypothesis that says the acts of the overindebted are unjustified and remain like that should be rejected, the version saying that their actions have been unjustified but they have changed remains open to future enquiry.

Inasmuch the results are not only incidental they apply to Finnish society after the worst economic depression of modern times. It may be that during the economic booms that have lasted relatively long the voluntary explanations would apply as explanations of overindebtedness in a way the activity hypothesis assumes. The similar dependency between the business-cycle and an individual-level explanation has been argued to have importance on other social problems connected to voluntary choices. For example, Atkinson & Mogenssen (1993) have argued that the disincentive effects related to higher levels of unemployment benefits may not be found during economic downturns. Although 1999 was already a time of economic boom in Finland, the debt problems created by the economic crisis were still persistent.

To conclude, the results here are not assumed to be indications of the fact that voluntary action-related individual-level explanations, such as the activity hypothesis, may not be able to explain overindebtedness at all. The results nevertheless give support to the assumption that voluntary reasons are not something that differentiates the overindebted from the rest of the population on a general level. Moreover, the results show that if one wants to sum up the most plausible explanations for the phenomenon, one should also in the future prefer social causes over voluntary explanations. There is also policy relevance to be found from the results; in order to reduce the problems of overindebtedness as efficiently as possible, one should try to tackle the origins of the

social conditions found to be the sources of it rather than speculate about the effects of the voluntary aspects, such as “bad moral”.

The case of overindebtedness has been analysed here mainly because it can be considered a good example about the problems of integrating individual-level explanations and social-level in the social sciences. There are occasions when individual-level explanations are assumed, although there is no knowledge whether these explanations apply. The same applies to various interests within the social sciences, whether it is a question about the explanation of unemployment, educational or class differences, and many other things<sup>31</sup>.

The reason for holding on to individual-level voluntary explanations is that they clearly seem to follow common sense arguments about why something happens to somebody. As it was argued in Chapter 2, this common sense originates from the in-written individualism of modern societies. It may be expected that the individualist values and doctrines in our society, as well as in the social sciences, support these assumptions so strongly that one is expected to at least propose them. When these explanations are assumed but not tested, the seesaw-effect takes care of the rest.

Basically the idea of testing individual- and social-level causes together was performed here by following the age-old principles of elaboration according to which the connection of two factors can be tested by including a third test factor in the model (see Lazarsfeld 1955; Lazarsfeld 1961). This can be considered as a basic method for applying different types of explanations in the same test also in the following parts of the book. On the other hand, one may also note that the way how the individual-level was included in the model was still not too efficient, in a sense that its application is only restricted to the debt problems. Also, the factors had a strong moral character in-written in them because it was an internal part of the activity hypothesis. It would of course be more benefiting to find a way to include the individual-level in empirical tests in a way that could be applicable to various different situations and would not include the moral character so strongly. There does not seem to be much research done on the voluntary action-related causes of indebtedness elsewhere. Thus, more research on the topic needs to be done. In order to do that, one should nevertheless try to develop less situation-dependent measures of motives of behaviour and decision-making<sup>32</sup>. The level of generality of the theory including the individual causes needs to be higher. That will be approached in the following part of the thesis.

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<sup>31</sup>There are some examples of the studies of unemployment and education in which the individual-level is included (see Chapter 9 for details).

<sup>32</sup>This same demand has also been presented for economics in general by Amartya Sen (1977).

***PART II******THE PRESCRIPTION AGAINST THE FALLACIES***



## 5 A REMEDY BY APPLYING RATIONALITIES?

### 5.1 RAT as a starting point

Like the empirical example in the previous chapter showed, individual-level information can rather easily be included in empirical analysis of the causes of a social-level phenomenon. The application of the previous chapter also showed that one would probably benefit from a more generally applicable empirical solution in order to do so. However, this alone cannot yet guarantee success. It may be argued – as the critiques of the oversocialised actor have – that in order to understand social phenomena and the mechanisms related to them correctly, proper theory concerning the relationship between individual and social structure is also needed. The same "remedy" should apply to both the fallacies of oversocialised and -individualised explanations. What is needed is a theoretical solution including individual- and social-level effects with empirical content in a form that can be relatively easily applied in various contexts.

It is often argued that the theoretical base for this could be found from the theories of rational choice (RC or RCT). These theories are attractive because they seem to provide a coherent solution or principle on how to include the singular actor in social explanation (Smelser - Swedberg 1994; Hedström - Swedberg 1996). There are, however, also some problems why these theories are often considered to be improper altogether for sociology. One of them is that RCTs apply *ad hoc* assumptions that are not considered necessary to test, because the theory is considered to be its own best explanation (see Boudon 2001b; Coleman 1994). The second problem is that they are also considered to be an unnecessary handshake towards the atomised and oversimplified understanding of individual action, usually assumed to be typical problems in classical economics (Zafirovski 1999a; Zafirovski 1999b; Sen 1977; Granovetter 1985; Kangas 1994). This critique can be considered a relatively rare example of a situation in which the problem of overindividualised explanation is paid attention to in current sociology. From the point of view of the fallacy discussion of Chapter 2, it seems as if the critiques are not wishing to give to an *overindividualised* theory too strong a status when the problems of oversocialised actor have not been fully addressed.

cialised explanations are tried to be avoided. It has even been considered whether rational choice theories should be considered as signs of the interest of economics to somehow colonise sociology (see Bourdieu 2000<sup>33</sup>).

Nevertheless, the RCTs seem to have a prominent and even growing group of proponents, especially in the empirically-oriented social sciences. The main reason for this is that it is felt that if the problems of these theories would be overcome, it would guarantee a solution to the crisis in sociology in general.

The aim of this chapter is to outline a believable theory integrating individual- and social-level explanations within the same explanatory framework. This is done mainly through a critical evaluation of the RCTs and by attempting to integrate the best parts and solutions for the main points of the criticism targeted at them as a more or less coherent theory of social interaction. The enthusiasm and the available critical discussion are also the main reasons why RCT is chosen as a starting point for outlining the general-level theory rather than some other theories. There are some other general level system theories trying to include both individual- and social-levels into the same explanatory framework, such as Luhmann's system theory, the structuration theory of Giddens or the role-based theories developed in the footsteps of Merton (see Luhmann 1984; Giddens 1984; Merton 1968). None of the other theories seem to have acquired such enthusiasm during the last decades especially among empirically-oriented social scientists. There is a rich discussion about the problems of the existing versions of the rational choice theories.<sup>34</sup>

But limiting the starting point to the RCTs is just not yet enough. It is often pointed out that RCTs cover a whole range of theories, ranging from a *wide* version, including various possible types of preferences of action, to *narrow* or *thin* versions of it, including basically only the assumption about egoistic, economic utility-related preference of action (See Goldthorpe 1996; Goldthorpe 1998; Opp 1998; Hechter - Kanazawa 1997.) How to accomplish the aim of the critical evaluation of RCT and the picking up of the best parts, then? The solution is that rather than going through a whole range of rational choice theories, the outlining of a proper version starts from John H. Goldthorpe's version – actually called Rational Action Theory (RAT) – because it can be considered one of the most advantaged or at least one of the most influential versions of the theory in sociology today. Goldthorpe posits himself somewhere between the *thick* and *thin* extremes of RC theories, which he claims is the theoretical position sociologists should apply in general. It may be argued that Goldthorpe's version is not such a complete general level theory

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<sup>33</sup>It has to be admitted that in the case of the research programme of Gary Becker, this kind of assumption is not too much exaggerated.

<sup>34</sup>It needs to be underlined that there are no any epistemological reasons to take RCT as a starting point rather than some other general level theory.

of rational choice than, for example, James S. Coleman's version is (see Coleman 1990). However, the advantage of this version over many others – also over Coleman's – is that it takes a clear stand on how the theory should be applied to hypothesis testing.<sup>35</sup> When this version is taken as a starting point, the empirical content should be easy to integrate with it.

The structure of the chapter is as follows. First, Goldthorpe's theoretical idea and motivation for it are presented (sub-chapters 5.2. and 5.3.). This review is mostly based on three articles: “*The quantitative Analysis of Large-Scale Data Sets and Rational Action Theory: For a Sociological Alliance*” published in *European Sociological Review* in 1996; “*The Integration of Sociological Research and Theory – Grounds for optimism at the end of the twentieth century*” published in *Rationality and Society* (1997); and “*Rational Action Theory for Sociology*”, published in *British Journal of Sociology* in 1998. Then the problems of Goldthorpe's RAT pointed out in criticism by other scholars, and the possible solutions to overcome them, are proposed (sub-chapters 5.4. and 5.5.). This criticism leads to the description of the legacy of both Max Weber and Emile Durkheim to rational action theory. From these, Weber's impact is to be considered more important (sub-chapter 5.6.). Finally, a suggestion as an improved version of Rational Action Theory for sociology will be proposed (sub-chapter 5.7. and sub-chapter 5.8.).

As it was already mentioned in the introduction, RCTs are referred to here as “rationality theories”. This is because it can be easily understood that often it is not the choice-making that combines these theories. Rather the theories are combined by the fact that social action is considered to be rational according to some principle. These principles may vary according to the version of the theory in question.

It is worth warning the reader that taking only one version of the theory as a starting point has some side effects on how the theory is presented. The often applied way of presenting the “evolution” of the theory in chronological order, underlining how the improved versions of the theory are derived from the work of the previous masterminds of social sciences (like applied in Chapter 2), is replaced by a more analytical way, underlining more clearly the analytical relations of the different versions of the theory. This means that, for example, the classics of sociology are considered only inasmuch they are relevant to the theoretical aims. Also, the analytical way makes some fairly influential versions of RCT, such as already mentioned Coleman's (1990) version as well as Simon's *bounded rationality* (see Simon 1983), not to mention Els-

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<sup>35</sup>Although at the same time, somehow contradictory, there are not too many empirical applications of Goldthorpe's version of RAT, mainly because of its problems (see below). On the other hand, Coleman's *Foundations of Social Theory* (1990) contains extensive number of empirical examples.

ter's extensive work on rational choice appear to have only limited importance if compared to Goldthorpe's, which of course is not the main point of argument here.<sup>36</sup>

## 5.2 Goldthorpe's motivation to rational theory

Goldthorpe's starting point for developing RAT is the crisis of sociology, which was already discussed at some length in Chapters 1 and 2. According to Goldthorpe, the “scandal” of current sociology is that the theoretical and empirical branches often seem to have no relationship whatsoever to each other. Empirically-oriented social scientists often consider theories as more or less amateurish collections of ideas and history of philosophy. The theories can be passed by as something that cannot provide any help to the explanation of the empirically relevant findings. Theory-driven sociologists, on their part, assume that it is enough to handle theories on the discursive level only. It may even be assumed that using theory as a means of explanation is merely a relic of positivist understanding of the social sciences. Some abstract theoretical phenomena are actually considered as impossible to study with empirical applications altogether. (Goldthorpe 1996; 1997; 1998; 2000; for examples see Giddens 1984; Alexander 1988; Ritzer 1992; Noro 2000.)

It is not surprising that Goldthorpe defends empirical sociological research. His merits in that branch of study are well known and thus do not need to be listed here. In general, the idea of denial of empirical applications concerning theoretical ideas that some sociologists seem to share is indeed quite odd, because it practically means denying the most common-sense definition of any science, that of finding explanations to observations<sup>37</sup>. However, it is more surprising to find out that the need for theory in empirical studies has become evident to Goldthorpe from the field of empirical research also.

First, the need for a proper theory has become apparent to Goldthorpe as the longitudinal large-scale datasets have become more common and empirically more reliable. With good quality data more demanding theoretical hypotheses have become easier to test – and simple descriptive “*variable sociology*” less interesting. Secondly, the development in the field of empirical methods has made the need for theory more evident. Loglinear modelling and event history analysis, which according to Goldthorpe are the two most promising methodological developments in the field of empirical research, are practically

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<sup>36</sup>On the contrary, it is quite obvious that Goldthorpe's version is built extensively on Coleman's work.

<sup>37</sup>This is, of course, an oversimplification. It is not the intention to argue that science always needs to be based solely on empirical observations, but merely that in practice also theoretical hypothesis testing needs to be in some relation to real world experiences (see Popper [1935]2003).

impossible to apply without reference to theory, because they do not include traditional pre-assumptions about the dependent and independent factors<sup>38</sup>. (Goldthorpe 1996.)

According to Goldthorpe, one of the reasons why some of the empirically-oriented sociologists have abandoned theories was that the methods applied in their studies were originally developed in other fields of science (presumably in psychology and economics) in which the sociological way of providing explanations was not connected to directly. This led those scientists to assume that the causal relationships between the studied phenomena could be concluded only based on the empirical analysis. Criticism against this kind of empiricism is fair and has actually been confirmed by statisticians. It is not plausible to derive explanation from results that merely reflect the interaction of the observed social factors. It seems to be that the *description* is often confused with the *explanation* within empirically-oriented social sciences. (Ibid.)

To conclude, empirically-oriented sociology should not be allowed to forget its theoretical basis. On the contrary, what is needed is a fruitful way of combining theory and empirical evidence as mutually important parts of sociology. The theory that Goldthorpe suggests to apply in this task is rational action theory (RAT). (Ibid. 1996; 1997; 1998.)

### 5.3 Goldthorpe's Rational Action Theory

Methodological individualism is a starting point to Goldthorpe for choosing the best fitting theory. The version of MI Goldthorpe suggests is the one with almost maximal social reference (see Lukes on MI in Chapter 2). He also distinguishes ontological individualism from his version of MI. Referring to Max Weber; he assumes that social groups, organisations and other related phenomena are fundamentally dependent on individual actions. As a starting point of the sociological analysis of social phenomena is the understanding of the intended and unintended consequences of individual actions/actors. (Goldthorpe 1996.) Thereby the RCT suitable for sociology needs be based on a thicker version of the theory than most of the current versions of it.

However, the ability to provide an explanation to a social phenomenon without very *thick* knowledge about a singular individual is, according to Goldthorpe, an advantage of RAT. It is assumed that RCT requires that a person applying it knows about the individual just as much as is necessary to link the micro (=individual) level to the macro (=social) level of phenomena. The “greedy” psychological and phenomenological theories requiring data about

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<sup>38</sup>To be more precise, in event history models there is one dependent factor: time.

individual characteristics are not needed. For example, the information included in large-scale datasets is supposed to be detailed enough, because they nevertheless include individual-level information, as the respondents usually are individuals. (Ibid.)

Also according to Goldthorpe, one of the major advantages of RAT is that it seems to be able to provide strong, almost deterministic, explanations about the occurrence of social phenomena. Just like in a good story, RAT explains phenomena like a narrative in which each occurrence seems to follow from another necessarily. According to Goldthorpe, this is what is often wanted from the analysis of the large-scale datasets when one is searching (obviously law-like) generalisations explaining observed phenomena. So, in the case of large-scale datasets, the level of abstraction of the provided information is what makes RAT a particularly good theoretical starting point. (Ibid. 1996; 1998.)

Goldthorpe does not accept the strong versions of RCTs because of the (ontological) individual utilitarianism they often assume. He, like many opponents of that kind of version of rationality theories, considers it too unrealistic for the purposes of sociological analysis. It is just too easy to come up with interaction situations in which the decisions of individuals are not motivated by the egoistic calculation of individual advantages. Further, according to Goldthorpe, RAT should leave room for interpretation and conceptual variation of what each person in each situation considers rational. Thus, the definition of rationality in question has to be subjective in character (Ibid. 1996; 1998).

However, even if rationality can only be defined subjectively, the starting point of the interpretation of rational action should be that it is always in relation to its ends or based on some sort of cost-benefit calculation. Beliefs, values and ideologies should be taken into account, but mostly as external variables explaining the variation. It follows from this that value-oriented action is irrational in character or to be reduced to rational individual consequences (ibid. 1998). Thus, the variation of rationality is basically based on the variation of other exogenous factors, not the variation of rationality itself.

Sociological RAT should also consider rationality as a situation, not as process dependent. This is argued to be a result of the general character of sociological information or knowledge; information provided by research is not capable of giving the picture of the whole process affecting on decision-making. Research should be able to provide information about the social conditions of action and decision-making. This kind of point of view is also influenced by

the fact that the rationality of a given action is practically always considered only as *ex post actu*. (Ibid 1998.)<sup>39</sup>

According to sociological RAT, action should always be considered as primarily rational or meaningful if compared to irrational action. This follows from the subjective character of rationality, which is dependent on the assumption of the meaningful individuals being able to explain their actions. Here, like above, when demanding a subjective understanding of rational behaviour, Goldthorpe is following Weber, to whom he is referring to with the terms *Verstehen* and *Erklären*. (Ibid. 1998.)

The whole concept of rationality in Goldthorpe's articles seems to be based on a strong belief that if treated this way, one should be able to interpret also those processes that so-called "variable sociology"<sup>40</sup> fails to explain, apparently on individual-level causes. There is a danger, however, of doing circular assumptions here. This is because rationality is in turn supposed to be possible to be returned back to the factors about the social conditions and on the other hand to the variation of values, beliefs and affections, which in turn are believed to be irrational in character.

There are several aspects in RAT that make it attractive. The problems it argues to be able to tackle are so important for sociology that any promise of fixing them is worthwhile considering. The subjective emphasis, which denies the egoistic utilitarian starting point, fits well for sociology. Goldthorpe takes the pragmatic limitations of the quality of the datasets into account. However, Goldthorpe's programme on RAT has also been criticised by some sociologists. In the following, the two published parts of this criticism will be evaluated.

#### 5.4 Criticism of Goldthorpe's RAT I

After Goldthorpe published the first article in ESR concerning the combination of RAT and large-scale datasets (Goldthorpe 1996), the popularity of the theory seems to have grown bigger in the field of the applied social sciences. However, Goldthorpe's "programme" has since been critically reviewed on two occasions in the same journal. The first occasion was in 2000 when a critical comment of Carl Edling (2000) was published. The criticism was directed at Goldthorpe's first article. The main arguments of this criticism are the following:

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<sup>39</sup>A critical argument can be presented here: it is unsure how this is different from any type of collection of information depending on human senses.

<sup>40</sup>The term refers to empirical quantitative sociology with minimal or no theoretical reference. It should not be confused with "variable language" proposed by Lazarsfeld (see Mäkelä 1996, 103-112).

1. Contrary to Goldthorpe's claims, empirical studies in sociology are usually theory driven.
2. Taking the individual-level into account is not sufficient in order to explain, for example, institutions, norms or culture.
3. The selection of rational choice theory over other theories cannot be based on "deterministic narrativity" and the substantiality of a choice cannot be assumed beforehand. For example, behaviourism is often more easy to apply than RAT and less controversial when used in the explanation of the individual level of action.
4. Because Goldthorpe claims that his definition of rationality is fundamentally subjective, it is in contradiction with the argument that the application of RAT with large scale datasets can be best defended with the argument that those explanations turn out to be most common, strong, etc...
5. RAT can be applied to quantitative analysis as much as any other theory. However, in that case the starting point should be that the theory is already in mind when the data is gathered.
6. According to RAT, different goals and beliefs explain individual action in different situations. However, large-scale datasets rarely cover these topics explicitly.
7. RAT is only a normative definition of decision-making turned into a descriptive one.

(See Edling 2000.)

The first of Edling's arguments is probably the weakest. The allegation that Goldthorpe makes about forgetting the theory is probably purposefully provocative and subjectively biased. However, on the basis of experiences in social science in Finland, it seems that this statement could be right. If theories are used at all, they are used as very general-level heuristic arguments (like "the theoretical discussion about the current risk-society") that often are merely "glued" to the empirical results (that could, for example, concern empirical regularities in the contemporary discussion about insecurity). Almost certainly the theories are not presented in the form of research hypotheses, like Goldthorpe suggests (see Goldthorpe 2000, 151-160). Empirical research seems to remain on the descriptive level, although this probably is not because of lack of theories, but because of lack of abilities to turn theories into the form of empirical testable theoretical statements<sup>41</sup>. This is emphasised with

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<sup>41</sup> For example, Hannu Uusitalo discussed this phenomenon in his plenary speech at the Westermarck Society's yearly conference in Helsinki, 28.3.2003. Uusitalo believes that the reason for the demise of sociology in Finland is the lack of ability to analyse especially quantitative data. However, it should be noted that even those who have these abilities, are not usually able to combine – or to test either –

other tendencies that underline the possibilities of remaining only on the discursive theoretical level without analytical attempts or even with the assumption that theories can be derived solely from empirical observations. An example of the previous kind of phenomenon in Finland has been, for example, the wide range acceptance of a view of sociology so called *zeitgeist diagnoze*, according to which part of sociology ought to stay completely on the theoretical level of analysis of *contemporary* social phenomena (see Noro 2000; see also discussion concerning *zeitgeist* individualisation in Chapter 2).

The second argument in the critique of Edling (2000) about the limitations of the individual level of explanation has also flaws. It cannot be argued that there are no individual actors behind norms, institutions or even cultures. A completely different thing is whether it is necessary to always bring sociological processes back to the individual-level. It may be easy to come up with a plausible research setting in which this is not required. Typical examples of this kind of studies are Esping-Andersen's research on welfare regimes (see Esping-Andersen 1990<sup>42</sup>) or Castells' research on network society (see Castells 1996). However, the choice made is dependent on the research questions and research settings, not whether it is ontologically impossible to understand these phenomena on the basis of individual action.

On the contrary, there are also versions of RAT that are able to take into account values, beliefs and norms quite plausibly. One is Jon Elster's (see Elster 1989a; Elster 1989b) version; another is Raymond Boudon's (Boudon [1990]1994; 235-257; 2000) (or more correctly, Max Weber's) version, of which the latter will be analysed further later. At the same time, it is nevertheless true that Goldthorpe's version has no means of dealing with such components. It actually is not even meant to be able to take them into account, because it is stated that the "greedy" theories of individual action are to be avoided.

The third critical point, the lack of evidence of the theory's superiority over other theories, is one of the hardest to overcome. RAT is chosen as a theory to explain the micro-macro-linkage because it is considered as the best fitting theory for such a task. However, any test for its pre-eminence over other theories is not provided. Goldthorpe seems to be dependent on other authorities already applying RC theory, such as Gary Becker or James Coleman (see Goldthorpe 1998).

At first glance the fourth point, the incoherence of the subjective starting point and the general character of information provided by the large-scale

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theoretical ideas inasmuch as they should. The result is, it is believed here, exactly what Goldthorpe has pointed out: the polarisation of empirical and theoretical studies.

<sup>42</sup> For empirical application see Härkönen & Kosonen 2003.

datasets, also seems to hit its target. If we consider rationality to be always dependent on the individual context, it sounds rather absurd to consider rationality at the same time as a theory that can be generalised for any social phenomenon.

It is, however, possible to defend Goldthorpe's view with a small extra-argument. This requires that prioritising the means-to-ends-rationality (same as *instrumental rationality*; see below on Weber's legacy on RAT) be seen as a result of the development of modernity, that this kind of rationality is something that is historically proved to be the most common type of behaviour, although in principle open to variation. This has been argued to be Weber's view about the connection of rationality and historical development (i.e. Bottomore 1985). If this kind of assumption is accepted, the subjectivity can still be accepted, even if only the ideal type is taken into account, because individuals living at the same time in same society act inter-subjectively in a more or less similar manner. Goldthorpe does not seem to promote this kind of understanding of rationality openly, so it can be that the assumption made here is too far from his view. However, he seems to accept Weber's assumptions elsewhere, for example, when he refers to rationality as a means-to-ends type and when he refers to *Verstehende* (~ understanding).

The fifth point in critique about the necessity to always know the theory that will be applied in the final research when the data is being gathered seems to be based on misinterpretation. One of Goldthorpe's original motives was that the applied theory should be so general that it could be applied also to datasets not specifically collected for the purposes underlined by the theoretical assumptions within the theory in question. It is hard to understand why the original motives of the data gatherer should always be completely known – it can help to maintain the validity of the analysis of data, but is hardly something that automatically would guarantee that anyway. It is also research economically an unbearable prerequisite. Nonetheless, it is neither valid to claim that, for example, large-scale datasets would include fitting information automatically.

The sixth point about the lack of proper variables in datasets is partially acceptable. Large-scale datasets can easily be seen as kind of “boring” sociology. The amount of comparable variables is often rather limited, consisting usually of rather “simple” social-level variables, such as income, education, place of living or occupation<sup>43</sup>. Even if the variables are in principle similar to each other, suspicions about the comparability of the data still cannot be cleared. However, there are often other datasets that can be used in order to

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<sup>43</sup>Of course, given the "battles" over the best occupational classifications, for example, shows that even these variables are not so simple that it on the first sight seems to be.

validate the connection of the certain values, norms and ideologies to the combinations of the typical socio-economic variables. In principle, this information can be combined with information provided by such datasets that do not include such information, but which have wider population coverage. It remains problematic that it is hard to combine the statistical testing of both kinds of information at the same time as well as that it is possible to perform the analysis only on the aggregate level.<sup>44</sup>

The seventh and the last point of the normatively assumed authority of Goldthorpe's RAT is rather easy to accept. The reason is obvious; the proposed theory has only one-dimensional criteria of meaningfulness of behaviour. In order to differentiate, combine, compare and eventually explain things, one necessarily needs some information about "the other", referring to what the analysed thing itself is not. Also, even if the normative legitimating of one particular type of rationality as the explanation of individual action is accepted, one needs to define the non-normative in order to make the normative understandable.

If the principle of staying within the theoretical scope of having an objective criterion of rationality is accepted, the definition of irrationality or non-rationality of action or decisions does make comparisons and differentiations possible (i.e. Elster 1989a, 30-41). However, if one wishes to apply the subjective concept of rationality, different types or forms of rational action taking place in different contexts needs to be considered. Even if Goldthorpe claims to accept the subjective starting point of rationality, he nevertheless explicitly denies the possibility of multiple rationalities or the possibility that rationality itself can have variation. A dead end follows; according to Occam's principle, a theory that explains everything in every context in a similar manner (without any variation) is actually not needed at all.

It is true that sociology often has to manage without too detailed individual-level information. In that kind of situation it is, however, richness not homogeneousness of the applicable theory that is needed: not to include everything but nevertheless *typical* range of different possibilities of explanations. So even if Goldthorpe's version of the theory seems on some points to be vague, it may still be, that RAT, if defined with sufficient criteria, has this kind of possibilities to include variation of explanation.

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<sup>44</sup>As a rare example, see Charles 2003.

## 5.5 Criticism of Goldthorpe's RAT II

After Goldthorpe published his book, “*On Sociology...*” (2000), in which two of the central articles that has been referred to above were reprinted, his version of RAT was again evaluated in *European Sociological Review*. This time the journal arranged a review symposium, in which four major scholars took part. Although the book had many interesting themes, the reviews concentrated on Goldthorpe's RAT.

According to first discussant, Raymond Boudon, the theories belonging to the RAT family vary according to the level of generality of the applied arguments. However, the level of complexity of its definition becomes actually lower when the level of generality is extended. The different versions of RAT apply to at least eight different postulates. The one with least postulates has only three of them: individualism, *verstehen* and rationality. Individualism refers to sociological explanations relying on the attitudes, actions or beliefs of individuals. *Verstehen* refers to the observer can in principle find out – understand – what these individual-level explanations are. Rationality refers to explanations are what they are because actors have strong reasons, instrumental or axiological, to believe in them. These three postulates form also the definition of methodological individualism in the sense of Max Weber and were the core of his version of RAT. (Boudon 2001b; see also Weber [1920]1978, 13-22.)

Nevertheless, RAT is often assumed to include at least three additional postulates: *consequentialism*, *egoism* and *cost-benefit balance*. Consequentialism refers to the assumption that the reasons behind the motives of action are always assumed to deal with the consequences of actions. When this postulate is added to the three previous, one gets an instrumental version of RAT, understood in a similar manner that the instrumental rationality of Weber. Egoism refers to actors being primarily interested in the consequences that action has towards oneself. Cost-benefit balance refers to the best of available alternatives of action are selected on the basis of the evaluation of the most favourable cost-benefit balance, similarly as, for example, one compares prices in the shops. However, if all three additional postulates are also accepted, one defines the usual (thin) version of RCT. One can also add two additional postulates, that maximisation is carried out in respect to 'will to power' (Nietzschean postulate) or in respect of class interests (Marxian postulate). (Boudon 2001b.)

According to Boudon, any version of RAT requiring more postulates than the three first ones cannot be general, but arbitrary. Boudon has named RAT including only the three postulates *cognitive rationality*. It is basically a re-named version of Max Weber's theory of rational action, and differs from the

others mentioned above in that it identifies also action that is based on the values that are considered as good reasons. (Ibid.) This version of RAT is considered further later (see below about the impact of the Weberian tradition on rationality).

David B. Grusky and Matthew Di Carlo, whose review is the second part of the symposium, concentrate on Goldthorpe's definition of rational action. Like it was already mentioned in Boudon's critique, Goldthorpe assumes action to be outcome-oriented and, at some level, cost-benefit evaluative. This kind of starting point makes, however, even norm-based action non-rational, unless utilities are gained from positive or negative sanctions or internal psychic costs. According to Grusky & Di Carlo, Goldthorpe nevertheless does not assume this kind of understanding of normative action. (Grusky - DiCarlo 2001.)

The third part of the review is written by Wout Ultee, who has criticised the over-enthusiasm connected to rationality theories also before (see Ultee 1996; Ultee 1998). Ultee is the most sceptical towards the programme of Goldthorpe. He does not see how Goldthorpe's RAT would lead sociological analysis any further than where Weber left it. Actually, when claiming to be following Weber and considering this as opposite to Durkheim's research programme, Goldthorpe is missing the important group of network effects. A more purposeful starting point would be to take the one of Lazarsfeld (for example, see Lazarsfeld - Menzel 1961) and distinguish the properties of individuals and the properties of collective. For example, Weber missed the collective properties of religion, whereas Durkheim missed most of the individual-level causes of it. This is something that one should be able to overcome with the theoretical applications of today. (Ultee 2001.)

## 5.6 Strengthening the weak points

The main finding to be concluded from the critique is that in spite of the general and often confessed enthusiasm connected to it, the version of RAT as proposed by Goldthorpe has many weak points that many sociologists find hard to accept.

The critique seems to be best targeted when it questions the priority of RAT over other theories and the rather normative way it is defined. In order to ascertain the purposefulness of some type of RAT one needs to show its ability not only to make some things understandable but also that it can make something better understood than the other provided "general" theories. This is an empirical task, however, and cannot be decided on a theoretical basis only. In fact, Ultee has elsewhere shown that RAT is not so general that it is wished to

be, when applied to some empirically observed social phenomena (see Ultee 1996; 1998).

The second problem is even more crucial: how Goldthorpe's RAT needs to be reformulated in order to be able to propose a non-normative definition for it – and at the same time to acquire an ability to explain also normative behaviour? This means that the principles of RAT need to be “fine tuned”, as Boudon suggests.

What is called for is a version of RAT that would, in addition to the aspects of Goldthorpe's version, also include *axiological (value)* rationality of Weber ([1920]1978), and if possible, a dimension that would somehow refer to the collective properties of action, suggested by Ultee (2001; also 1996;1998) in the footsteps of Durkheim ([1895]1977) and Paul Lazarsfeld (see Lazarsfeld - Menzel 1961). Next these ideas from the tradition in sociology that could fit RAT are considered further.

### 5.6.1 RAT in the context of Weberian tradition

Goldthorpe, like many contemporary proponents of the rationality theories, is not too detailed with how rationality itself should actually be defined. Max Weber's case was quite different. Weber is usually associated as the forefather of the application of rationality in sociology. According to Weber's classical theory of the rationality of social action (Weber [1920]1978), there is not only one type of it, but actually two. These types are *instrumental rationality (zweckrationalitet)*, which closely resembles the version of Goldthorpe (as well as the version that Parsons provides, see Parsons 1937, 731-737), and *value rationality (wertrationalitet)*, which Boudon (2001a; 2001b) has renamed the axiological type of rationality. Action is instrumentally rational, when the agent is

*“...employing appropriate means to a given end: that is the agent may use his expectations of the behaviour of external objects and other human beings as “conditions” and “means” to achieve as the outcome his own rationally pursued and calculated purposes”.*

It is value rational, when action is

*“...an attempt to realize some absolute value (...): that is, the agent may consciously believe in the unconditional intrinsic value, whether ethical, aesthetic, religious or any other, of a particular sort of behaviour, purely for its own sake and regardless of consequences.”*

(Weber [1920]1978, 24-25.)

The types of rational action are *ideal types*. This means that the types in their “pure” form occur only rarely in reality. The types should rather be un-

derstood as similar to the laws in the natural sciences (Weber [1920]1978, 9), “*the meaning appropriate to a scientifically formulated pure type*”. It could be argued that the application of the method of defining the ideal types of rational action is advantageous for the current task of fine-tuning RAT also.

Apart from the types of rationality, according to Weber, it is also possible to distinguish two other types of social action, namely those of *affectual* and *traditional* action. The former is based on emotions or feelings, or considered as a reaction to them. However, it includes also the opposite type of action, *sublimation*, which means that an action is a result of a conscious discharge of an emotion. The latter is based on customs or habits or a reaction to them. Most of the habitual routines belong to this group of action. These types of action are combined by the aspect that they often seem to be simply meaningless responses to particular types of stimulus. (Ibid., 25.)

Affectual action can be separated from value rational action by the fact that in the latter case the agent consciously decides the ultimate goal and organises his actions to achieve it. They both have in common the aspect that the meaning of action lays not in consequences, but in the nature of action itself. (Ibid., 25.)

Action is rational in the *means-ends* sense when it takes into account not only the means and the ends, but also the secondary consequences and relationships of the various different ends. If the ends and the secondary consequences are in conflict or competing, one may make the decision according to value rationality, and apply instrumental rationality only in the selection of means. In the situation of competing ends this is not the only possibility. The ends can be considered as needs and thus ordered according to their relative urgency, like it is done in the case of applying marginal utility. (Ibid., 25-26.) Thereby it becomes clear that the utilitarian action assumed in most RCTs is, according to Weber, only one special case of instrumental rationality.

It should be noted that even if *instrumental* rationality can have a close relationship to value rationality, the other type of rationality is always considered as irrational from the point of view of the other, with growing certainty more it underlines the absolute character of values. However, purely *instrumental* rationality is rare and is actually a limited and artificial type of action. The same applies to all types of action; they are seldom observed separately like assumed in the pure types, but rather often compounded to each other. (Ibid., 26.)

It seems to be that the ideal types of rationality can be separated from the other two ideal types of action by the fact that a rational act simply refers to a meaningful social act of an individual, whereas traditional and affectual behaviour are only boundary cases of meaningful, social action (Ibid., 25). It

may be interpreted that if one is interested explicitly in the ideal types of rationality, one could basically ignore traditional and effectual behaviour.

It is also important to notice that Weber did not think that his types are exhaustive, but only purposeful for his use. With this he explicitly underlined the possibility that also other ideal types may be needed. (Weber [1920]1978) Also, Boudon is uncertain whether the two ideal types Weber proposes are enough. According to Boudon, there are at least five “actual” types of rationality; that of utilitarian, instrumental, value-based, traditional and also cognitive (see Boudon [1990]1994, 256). Whereas other types are already familiar from Weber (utilitarian action being a special case on instrumentality and traditional action a special case of value-oriented action), cognitive rationality refers to the type of action that has some kind of theory guiding it. It refers to action that actually has a system of reason backing it up. However, cognitive rationality can be understood as a special case of value rationality, just as utilitarian rationality was understood as a special case of instrumental rationality (Ibid. 2001b, 152).<sup>45</sup>

Although Goldthorpe’s version of rationality is close to that of Weber’s, it does not include the axiomatic angle at all. Why is that? It is argued here that it can be understood as a consequence of the impact of the earlier followers of Weber in Anglo-Saxon countries, such as Parsons and Coleman, that probably has had an effect on Goldthorpe’s version of the theory.

Talcott Parsons was the key sociologists to transfer Weber’s theory of rationality to sociology in English-speaking countries (i.e. Heiskala 1997). Parsons’ interpretation was that Weber defined the concept of an ideal type only through negation, what an ideal type is not (Parsons 1937, 602; see also Heiskala 1997, 60). This applied also to the distinction of the rationality types from each other. In order to avoid the problem, rationality should be defined according to its necessary parts.

According to Parsons, action cannot be understood as meaningful without a reference to the ends, means, conditions and norms. Personality is the unifying aspect between all these parts. Norms are the *necessary* value content of rational action. However, norms are not considered as axiological, but teleological aspect in action. (Parsons 1937, 737-748.) This means that, as action cannot be non-consequential, that the purely value-oriented action of Weber is an unnecessary part of rational action. It seems to be that there is no place for the absolute values orienting the action itself. Thereby action is always considered as primarily means-rational, and only secondarily value-oriented. Also, the as-

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<sup>45</sup> Also, Weber’s original text has been interpreted in a way that it actually includes more than two distinguishable types of rationality. For example, Heiskala (1997) has proposed that one should be able to distinguish as many as seven different types of action from Weber’s text.

pects of action are not something that should be empirically tested: '*...the distinction between the action frame of reference and the data is vital*'. This is why data about situational aspects should only be enough to be able to apply the action frame of reference as the "grand theory". (See *ibid.*, 737.) The impact of the teleological assumption can be found also in Goldthorpe's RAT, as Boudon (2001a) also notes.<sup>46</sup>

Coleman's ideas about the micro-base of social action quite clearly come close to the version of Parsons. However, references to Weber's theory about rational action are quite effectively blurred in Coleman's proposal for the theory of action, although Weber otherwise is referred to extensively. Parsons is not mentioned. Again rational action is, in principal, possible to be reduced to instrumental rationality, but even further, to instrumental rationality with a general goal of economic utility, applying principles of *maximation* and *optimization* (Coleman 1990, 13-19; Coleman 1994). Similarly to Goldthorpe, values and norms are presented as external sources of variation.<sup>47</sup> The solution comes close to that of Parsons, although probably due to similarities between Merton's role theory (Merton 1968, 422-434) and Parsons' action model. If compared to the version of Parsons, the advantages of Coleman's version of RAT are mostly in the formalisation of it, not so much in raising the accuracy and applicability of it.

According to Boudon, the major difference between the rationality types of Weber and the versions of the followers is the ability of the former to take into account also the type of action that is not motivated by its consequences. This is the case, for example, in value-rational action – sometimes action may be considered, for example, as morally necessary despite its possible outcomes. However, Boudon finds it necessary in order to define non-consequential rationality that this type of action is defined not only as value-conformation, but as rational in the sense that actors assume it to be based on strong, valid reasons and as likely to be assumed to be valid also by others. (Boudon 2001b, 199; see also Boudon 1998.)

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<sup>46</sup>According to Heiskala (1997, 63-64), one of the goals Parsons had when proposing his action frame of reference was to improve sociology's scientific status, closer to that of, for example, physics. The cost of this was probably too high, as the original idea of the action frame of reference was given up. Especially later during Parsons' career, action was to be analysed depending on the external normative level and internal psyche. In this kind of a situation, action can be analysed without any reference to meaning – thus, the frame of rational action escapes the analysis altogether. It also turned out that in the end the Parsonian programme of rational behaviour was not too influential in the field of empirical studies, but actually severely criticised because of its atomised actor (see Chapter 2 about the oversocialised concept of man).

<sup>47</sup> This leads Coleman to quite an odd interpretation on Weber's protestant ethics; Coleman does not seem to see the strong value-oriented behaviour continues to be crucial element of behaviour of Calvinist, even when they began to apply economic principles as part of their religious acts (see Coleman 1990, 6-10; Weber [1904-05]1990).

In Parsons' and Coleman's versions, Weber's multidimensional understanding of rationality is forgotten. If Weber's programme is taken seriously and the problems of Goldthorpe's RAT, also present in both Parsons' and Coleman's theories of social action, are wished to be overcome, at least two aspects should be added to RAT. The first is to allow rationality to have other ideal forms than the instrumental one, the second is to further define this as a possibility of axiological – that is value-based – rationality. Also, it should be noted that the possibility of other rationality types may be advantageous to consider, too.

### 5.6.2 From Durkheim to Lazarsfeld and Menzel

It can be argued that most of the sociologists working on RCT (or RAT) are somewhat indebted to Weber. The Weberian “school” of sociology can easily be differentiated from Durkheimian in respect of its relation to rationality. In the latter, the whole concept of rational action is missing. If referred to at all, rationality was considered an impossible or empty concept (see Durkheim 1972, 215-218; 257). This “hostility”, however, is more clearly directed against the term itself rather than the understanding in the sense that Weber did. For example, in “*Les Règles de la méthode sociologique*” Durkheim ([1895]1977) notes that individual action is necessary in order for social facts to be realised, and that actually wants, needs and wishes can also have an effect on social reality. Durkheim does not seem to follow this path any further, although, for example, Boudon notes that Durkheim used explanations very similar to those usually understood as referring to current rational choice theories (see Boudon [1990]1994; 243-246).

The lack of the concept of rationality is also evident in the work of Durkheim's followers. Merton, who obviously is more indebted to Durkheim than Weber, excludes rationality by using the concepts of roles and norms instead. Social action is primarily to be understood through social reference groups and different role sets applied in relation to them. However, even roles are interpreted – consciously or not – as being affectual in character. (Merton 1968, 422-434.) This is where the weakness of role-based social theory lies; just as means-to-ends -rationality was a necessary part of Parsons' action theory, the affectual action is the necessary part of Merton's. Lazarsfeld noted this problem, like Ultee (2001) points out, but could not provide a truly effective solution for this defect. However, from the point of view of methodological individualism, roles can be understood as the ideal types of action that are more likely to be connected to some social context rather than to another, but that lack the generalised character of rationality types of Weber.

So how to import the *collective* to RAT with the smallest possible violation of the analytic principles of it? The crucial factor for Merton seems to be in knowledge, which is necessarily held by individuals, but used in a social context. Information used as knowledge is useless without proper social context. (Merton 1968, 511-514.) Another aspect is the time-bound character of rationality, which, however, makes sense only if time-bounding is connected to situational effects on rationality. Both of these aspects are valuable to be included also in RAT in order to improve its generality.

Time-bounding can be taken into account by separating the causes and effects of rationality when it is used in order to explain social phenomena. In Chapter 3, this was simply done by applying the principles of elaboration, which basically tests the causal connection between any social phenomena in the light of a third test factor (see Lazarsfeld 1955; Lazarsfeld 1961). However, the inclusion of individual and social factors within the same theoretical framework requires something else. Like it was already mentioned, according to Ultee (2001), the key to finding a way to theoretically combine individual and structural explanations could also be found from the ideas of Paul Lazarsfeld.

According to the article of Lazarsfeld and Menzel (1961), the collective may be used as an element of proposition. Collective is a group of members that all share some same properties. These shared properties can be used in order to describe the group in question. Members themselves do not have to be individuals, but other collectives as well. Thus, in order to describe a collective, one does not need to know the individuals, but only the members of it, like it is the case in, for example, studies of welfare state regimes. This is usually missed by proponents of methodological individualism.

According to Lazarsfeld and Menzel, *three properties of collective* can be distinguished. The first is the *analytical* property. It is a property of a collective obtained by a mathematical operation upon some property of each single member. The examples of analytical properties are average, standard deviation and correlation. The second is the *structural* property. This property can be obtained by performing some operation on data about the relationship of each member to some or all of the others. An example of this kind of property is a friendship network in a school class. The third property of a collective is *global*. It refers to properties that are not based on the information about individual members only. Such are the types of language or monetary systems. It should also be noted that in order to make any statements about collective properties one needs to know what combines its members. Also, it is important to note that a collective analytical property may be parallel to a property of a member. (Ibid.) An example of this kind of property is dictatorship – the pro-

perty may be a collective analytical property of a state, but not a property of most of its members.

Also, *four properties of the members* can be distinguished. *Absolute characteristics* are those that are obtained without using any information about the characteristics of the collective or the relationships to other members. Most commonly these refer to individual characteristics. An example of these may, for example, be the colour of eyes. *Relational properties* are those that can be computed from the information about the substantive relationships between the member described and the others. The difference between the relational properties of members or individuals and structural properties of collectives is that the former refers to the relations of members of collectives to each other, the latter to the aggregates over the relational properties of their members. (Ibid.) This difference and connection between the individual members and collective is a crucial point to be remembered later.

*Comparative properties* of members can be characterised by comparing the values of members to each other or its distribution over the entire collective. For example, the values of the young in a collective are often considered to be deviating from the average or majority. Although this finding would be based on the analytical properties, the values of a single young person would be a comparative one. *Contextual properties* of members describe them by the properties of a collective. For example, a professor can be characterised by the membership of an academic community. Because it is the characteristics of the community that are important here, collective properties could actually also be considered as a subdivision of a contextual properties of individual member. It is also meaningful to speak about comparative or contextual properties only if the objects of study are members of different collectives. (Ibid.)<sup>48</sup>

Lazarsfeld and Menzel note that even if the collective properties are considered in empirical social analysis, this does not exclude the possibility of methodological individualism; that all collective propositions are, in principle, constituted by their members. (Ibid.) This is exactly the idea why the distinction between methodological individualism and collectivism does not need to be considered as ontological but simply as pragmatic and as something related to both types of the applied data and research questions. In fact, making this kind of assumption makes the whole problem of the crisis of sociology appear rather more a methodological than ontological one. The crisis followed from the inability to integrate the levels of individual and social explanations seems to be less mystical and easier to solve than it has been this far.

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<sup>48</sup>Lazarsfeld's and Menzel's system of individual and collective properties have astonishing similarity to Popper's ([1935]2003) individual and universal concepts. However, Popper's terms refer to different parts of any theory, not only to special case of the individual and collective properties of human action.

What makes the properties listed above really interesting are the combinations of them. Often one proposition can use various types of the properties; even combine both member and collective properties. Also, one property can be constructed from others by compounding them. By doing that it is sometimes possible to distinguish various collective properties based on the properties of members.

What Lazarsfeld's and Menzel's notes on the aspects of a collective provide to the theory of rational action, then? It basically means that if rationality is understood as an individual or member property, it is, according to Goldthorpe's assumption, an absolute property. It cannot be relational, because it is a statement about an individual *an sich*. It is not comparative or contextual either, because according to Goldthorpe all individuals should be considered as the members of the same collective – collective of rational actors. However, if this is accepted, how is the information about rationality obtained, then? Is it just assumed? This would make a rather weak starting point for any theory that is assumed to cover micro-level theoretical arguments.

If Lazarsfeld's and Menzel's ideas are studied against the properties that Boudon considered as the necessary parts of rationality, it can be seen that from the three postulates of RAT, one should actually be able to exclude individualism from the model as unimportant. This can be done if it is accepted that the problem of the connection of the individuals and collectives are rather methodological than ontological. Thus, the simplest version of RAT should only consist of the postulates of *verstehen* and rationality. The exclusion of methodological individualism as the necessary part of the theory should lower the probability to the fallacies of both overindividualised and -socialised explanations – MI can be understood as one of the aspects making it easier to accept individual-level theories even if there was no real reasons for that, which may result in the described see-saw effect (see Chapter 2).

## 5.7 The missing part of rationality

The previous part of the chapter suggested that in order to improve RAT one should take into account some aspects of Weber's theory. More importantly, it was suggested that in order to overcome the individual-social-dilemma, the problem should be assumed simply as a methodological rather than an ontological problem that can be overcome, if the connection of the properties of the collective and members were understood and the necessity of MI is forgotten.

In order to be described by any other types of properties of members than with the absolute one, the very definition of rationality should be changed

from the version that Goldthorpe applies. This opens some additional questions. Most importantly, if rationality is needed at all, it should have the possibility to vary. How can variation in rationality be observed? Is it based on the variation of one type of rationality, or should it be based on variation of combinations of various rationality types? At least Boudon's critique, as well as Weber's texts, seem to suggest the latter direction. If this is accepted, how many types of rationality are enough, then? Should Weber's two ideal types be considered as sufficient in order for the theory to contain the relevant dimensions of rational behaviour in everyday life? Or is there something that is clearly lacking from Weber's definition of rationality?

It is not too easy to find proper suggestions about what may be lacking from Weber's ideal types of rationality in order to consider the theory of rational behaviour as sufficient. It is known that Weber was not yet able to see the revolution from Aristotelian to probabilistic explanation occurred at the turn of the 20<sup>th</sup> century (Lazarsfeld - Oberschall 1965; Goldthorpe 2000; Ultee 2001). According to Ultee, that was the reason why Weber was not able to understand the need to distinguish collective properties (see Ultee 2001). It is now considered whether the lack of this kind of information also caused the lack of one important type of rationality.

An addition to the ideal types of Weber is found from a rather controversial direction, namely the text of Ulrich Beck ([1988]1990)<sup>49</sup>. According to Beck, in the reflexive late modernity we are living today, instrumental rationality is re-formulated into *risk rationality* by absorbing value rationality as an internal part of itself. This becomes possible because instrumental rationality eventually becomes its own opposition.

According to Beck, risks are the key to understand this. The victorious path of instrumental rationality during modernity has been based on its denial of value rationality. In the societies of late modernity, risks are no longer agreed upon, but have become open to the battle over the rights to define them. In the cases of nuclear power, gene technology or aids, the experts of law, technology, medicine, etc., all in turn want to gain or maintain the right to define the limits of the risks associated with them. This eventually leads to a situation in which every expert group tries to dig the ground of reliability under other groups' feet. The result is eventually the weakening of the trust in expert knowledge – and eventually in knowledge in general. (Ibid., 131-138.)

According to Beck, when a danger becomes a political topic "*risk is colonising morality's last fortress*" (ibid., 135-136). This refers to the fact that of-

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<sup>49</sup> The controversy is connected especially with his theory of risk society (Beck [1986]1992), mainly because it lacks much of the empirical evidence supporting its arguments, and to the recent writings that was in Chapter 2 labelled as arguments supporting an idea of *zeitgeist* individualisation.

ten morality in modern societies is camouflaged in the clothes of instrumental reason. Risks seem to be dependent on the different interests of actors, which makes the ways to calculate risks “*multiply like rabbits*” (ibid. 136). This multiplicity of the ways of calculation forces instrumental rationality to stretch itself too far. The implicit values inside instrumentality become too obvious. The paradox is that using better means in order to get desired outcomes seems to lead to even more parallel beliefs about the correct results. Instrumental rationality needs its horizon of decisions, whereas risk rationality means that the horizon is lost – the connection between means and ends is lost. In order to survive, individuals are forced to turn themselves to common sense decision-making with rationality of praxis. (Ibid., 135-136.)

The mixing up of instrumentality and value-orientation is not exactly a novelty finding, but something that already Weber felt to be present in the break through of the protestant ethic (Weber [1904-05]1990) or what Tönnies even earlier considered to be happening when the *gemeinschaftlich* societies turned into *gesellschaftlich* societies (see Töttö 1996). Rather than arguing risk rationality to be a novelty feature of western societies, it may be worthwhile to consider it as one of the permanent features of modernity, having actually much more broader social-historical impact in western societies than Beck puts it. The awareness about risks is then something that is always opposite to strong bonding than to desired outcomes.

So, what does risk rationality mean if compared to instrumental rationality or value rationality? Obviously it does not refer to neither of those ideal types as such. The end loses its connection to the means. The means lose their connection to knowledge. Even values hidden behind instrumentality lose their absoluteness. However, what Beck is lacking is a positive definition – what risk rationality is as such and what does it have that other types of rationality do not? In order to try to define risk rationality as its own ideal type, let us try to outline a more detailed definition of it.

First of all, in risk rationality there is no knowledge in a strong sense, but merely very weakly internalised information, because “truth” as such is under dispute. This means that “Knowledge” with a capital letter is understood similar to Popper's ([1935]2003) *axiological universal statements* or *depth information* according to Hintikka (1970), whereas information could be referred to as *individual statements*, if Popper's term was used, or *surface information*, if Hintikka's terms were applied. Thus, the first differentiating character of risk rationality would be the reliance on surface information. Secondly, there are no absolute values, merely preferences evaluated according to situation and life experience. There are no means as it is understood within RCTs, although one is expected to choose and make decisions. However, because of being a rational actor, one cannot comprehend only reacting or

obeying. One is forced to the endless calculation combined with continuous action. Thus, action is not meaningless, but endless – without any meaningful reference to future.

It somehow makes sense that one could be in this kind of state in ones life. So what would be such situations? At least it is a circumstance, in which there does not seem to be obvious continuity. One cannot or does not dare to think what comes next. One cannot relate to the past as a source of absolute values, because they are proved to be wrong. It is assumed here that this kind of situation needs a little more than just the lack of trust in certain experts in order to realise. It needs a real social crisis – like a deep recession, war or natural disaster – but it is likely that an individual crisis, such as sickness, divorce, or death of a family member, have at least as straightforward an impact on the likelihood of becoming risk-rational. This actually seems to make risk rationality not as a *zeitgeist* phenomenon of the last decades, as Beck represents it, but a possible condition of human behaviour that is not so much dependent on the historical phase in society.

Should risk rationality be considered as completely ahistorical, then? There are reasons to believe that risk rationality has been possible for the whole period of modernity. According to Luhmann, the concept of risk itself was invented with the modern time (see Luhmann [1991]1993, 8-14). Risk calculation became modernity's secular counterpart to repentance-minimising – thus it can be considered as a replacement of the religious value-rationality in secular societies. By the calculation of risks, persons became able to somehow take into account possible future loss – whether or not this ever occurs. The connection of rationality and time becomes obsolete, because the calculation of risks makes us realise that enough information about the future cannot ever be gained, not even about the outcomes of our own actions. However, according to Luhmann, the concept of risk does not open a window to insecurity, but actually ascertains security, in the sense that risk makes it possible that if things go wrong, one may still have acted properly. With the concept of risk decision-making is immunised against failure. (Ibid., 1-31.)

The existence of risk rationality can also be justified with the help of other theories. Risk rationality can be considered similar to the Hobbesian idea<sup>50</sup> about humans in the natural state of war, although experienced on the individual-level in the context of the existing society. As there is no society in the “natural state”, there is no knowledge available in the form it is usually understood. However, in these conditions, action cannot be considered as pointless. It can be seen that (as it was pointed out in Chapter 2) that according to

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<sup>50</sup>As it can be remembered from Chapter 2, this was not so much an epistemological assumption of Hobbes himself, although *Leviathan* is often interpreted like this.

Hobbes, persons in these conditions are not maximisers of utilities but security. The idea can also be found from the texts of various contemporary social scientists, especially from those influenced by Simon's idea of rationality as a procedural rather than substantive phenomenon. According to it, persons act inasmuch instrumentally rationally as possible, but nevertheless being aware that their knowledge is not complete. However, completely rational action is never possible, like neoclassical economics seem to assume. (Simon 1983; Simon 1986.)

Kahneman & Tversky (1979; 1991; also Kahneman - Lovallo 1993) have extended these principles to the argument that risk-aversion is a far more important principle of human behaviour than the maximisation of utilities. Recently, Breen and Goldthorpe (Breen - Goldthorpe 1997) have applied this principle to educational and career choices. According to them, these choices are likely to be made primarily based on risk-aversion, by trying to avoid social downward mobility, and only secondarily based on the achievement of a better position, although both principles should apply. Risk-aversion can basically be explained by utilitarian motives – maximisation of security, avoiding loss – but if seen as a reference to the denial of attaching oneself to future outcomes of action, it cannot be positioned within the realm of means-ends efficient instrumentality.

If one wishes to stick with the uniform one-ideal type rationality, one would probably consider surface information vs. Knowledge -parallel merely as an epistemological problem, which has nothing to do with rationality as such. One is always forced to make a kind of pragmatic limitation in order to behave in the first place. However, it is argued here that this difference is crucial in order to understand rationality in the first place. One needs to remember that when following Weber's method, rationalities are something that very rarely or never exists in reality in pure form. They are ideal types, abstract and pure points of reference of thought rather than existing reality. As an ideal type, instrumental rationality assumes absolute knowledge, although it is not assumed that this kind of knowledge can necessary be found in practice. The ideal type of value rationality has no relation to knowledge other than through values or authority. However, this is exactly why the ideal type of no knowledge should at least be considered.

What is important to the current purposes is that risk-awareness creates the type of action that is not usually considered being rational in rationality theories. This is because it does not require sufficient information for rational instrumental or value-based decision-making. However, if outlined as above, it is possible to consider the type of action as rational and is even more advantageous than other types of rationalities in certain contexts. For example, it re-

moves the necessary time gap followed from considering the time limits of action by eradicating commitment of oneself to the future.<sup>51</sup>

It appears that in fact contrary to its most obvious definition, risk rationality is not so much about the concept of risk itself. Risk is merely understood as a reference to the type of society in which this rationality type can become especially important. In such a society, the concept of risk also becomes important in a way that Luhmann ([1991]1993) described. This has been possible since the probabilistic revolution, so that in this sense it is not a phenomenon followed from the post-modern turn of the society, but a permanent sign of modernity.

The probability of risk rationality may become stronger because of the effect of the expansion of information or mass media society. In contemporary modern societies, people are provided with a “*constant flux*” of competing truths by the mass media. The effect of the traditional mass media is multiplied by the inventions of modern information technology. Thus, the actual change in this respect is that sources of information are not scarce any more, but the exact opposite. The difficulty related to knowledge is to pick up the important parts from the flow of information. For example, the raised awareness of insecurity because of crimes in western societies can be much more easily explained by the raising awareness of the acts of crime because of crime news than actual raising rates of crimes (see Young 1999). It may be argued that the mass hysteria related to the modern “super-dangers”, such as SARS or Creutzfeldt-Jacoby disease, is not so much born of the actual diseases in question, but of the “danger-hype” attached to them in news-coverage.

The main question related to risk rationality is quite fundamental in character; does Knowledge in the strong sense, referring to the infinite or absolute truth, exist at all? If the actor believes it does not, one is likely to be risk-rational.<sup>52</sup> Risk rationality assumes, to put it simply, that any information is good, or at least better information. This makes it possible that in the simplest mode, risk rationality refers to simple binary decision-making, and can basically be based on only single facts (or something that is wished to be a fact). Even this should not be understood too strictly. Even if an actor makes decisions according to the best available information, one may still be fully aware that the chosen decision may turn out to be false in the end. This makes risk rationality an extremely temporal type of action – the actor is not bound to the

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<sup>51</sup>This was in principle one of the reasons why Simon argued *pro* bounded rationality in contrast to substantive rationality (see Simon 1986).

<sup>52</sup>This idea, as such, is an ahistorical state of mind that can be followed back to, for example, relativists of antique.

outcomes of the action or does not feel any strong obligations to what is realised from his actions.

When the “*constant flux*” of information provides various *truths* about almost any possible decision made in everyday life, it makes the actor eventually believe that whatever one chooses to do, there is always opposing information suggesting making different decisions. In this kind of situation, instrumental rationality becomes extremely hard and practically impossible. Simply the time-bound limits of decision-making and action make it impossible.

## 5.8 Theory of multiple ideal types of rationality

The aim of this chapter has been to modify a believable version of rational action theory that could overcome the problems found in Goldthorpe’s (1996; 1997; 1998) version. In order to do this, rationality is allowed to have multiple ideal types. If multiple rationality types are assumed, rationality can be analysed not only as an absolute individual-level property but also as a collective phenomenon, with collective properties (Lazarsfeld - Menzel 1961). Thus, in fact, this will remove the gap between individual and social explanations – rationality will refer to individual action, but can be applied as a social-level phenomenon tested as a collective property. It can be argued that this rather simple solution is in fact the answer to the problem usually considered almost an epistemological one, the double paradigm creating the seesaw-effect. Lazarsfeld applied it to mid-range theories, but there is no reason why it could not be applied to more general-level theories also.

Two of the proposed ideal types can be derived from Max Weber’s ([1920]1978) classic theory of rational action. Those are instrumental and value rational action. However, it is also considered, whether one should separate additional ideal types that may have remained unnoticed by Weber. Above the possibility of the third ideal type was considered. This third type was called risk rationality according to Beck’s suggestion ([1988]1990).

Risk rationality and instrumental rationality can be differentiated by two aspects, according to the relation to the knowledge and according to the relation to the ends of the action. For risk rational actor there is only surface information and the ends of action are of only secondary importance. The third difference would be the relation to time; instrumentality is future-oriented, whereas risk rationality is bound to the present. However, the third difference can be seen as the necessary outcome of the two previous, and does not need to be considered as necessary in order to distinguish risk rationality from the other types under analysis.

The easiest way to distinguish value rational action from both instrumental and risk rationality is to evaluate if action is effected by absolute or axiological values or any absolute authority. Instrumental rationality can be presented as depending on the authorities also, but in its case authority is not absolute, but dependent on other aspects, such as expert knowledge, etc. For risk rationality, value-dependent orientation is impossible – if there is no absolute knowledge, there cannot be absolute values or any authority provided with that kind of knowledge. Value rationality is not inherently bound to the end(s), although it nevertheless probably can be. This is what differentiates it from risk rationality – the latter cannot be bounded to future outcomes of action or it is just considered meaningless. For value rationality there can be knowledge, although it is value driven knowledge. Nevertheless, knowledge is not relative in any way, and the question is as such often irrelevant for his type of rationality.

Decision table related to these three dimensions of rationality can be described as follows:

	Type of rationality		
	Value	Instrumental	Risk
Accepts the possibility of knowledge	(+)	+	-
Action is bound to the present	(-)	(+)	+
Actor is bound to the end	(-)	+	-
Action is oriented according to values or authority	+	(-)	-

+ accepts    - cannot accept    ( ) possible, but not necessary

The table seems to be rather surprising. Opposite to the belief of Parsons, on the contrary it seems to be possible that value and instrumental rationality can quite easily be differentiated with positive definitions. The table also shows why an actor's relation to knowledge and future were unimportant factors for Weber in relation to his rationality types. His types are easier to distinguish using the factors concerning means- to-end relation and importance of absolute values. Nevertheless, it seems to be that risk rationality is always to be understood as a rather limited case of the types of action. In its “pure” form it seems to be made possible only in a rather restricted and temporarily prevailing condition, during which the trust to social structures is severely questioned.

It may very well be that risk rationality cannot be found as a collective property in some modern societies for a long period of time, especially if the society has reached modernity only recently, although some individual members would occasionally be considered as risk-rational. If that is the case, it may be worthwhile to consider inasmuch risk rationality can be considered, it's own ideal type of rationality. As an individual absolute, relational or comparative property, it could probably be found even in that case, but defining it as a contextual property could be difficult. However, as a collective property it

could be found in all forms, as analytical and structural, as well as global. Thus, it could be argued that as an ideal type it could be found, although it would not necessarily be understood, as a relevant ideal type in order to understand action in a social context.

Lastly, what has this kind of multidimensional understanding in answer to the criticism targeted at Goldthorpe's version of RAT? If the singular aspects are considered, the types can be differentiated from each other with relative and comparative, as well as complex means. This makes it possible to test the interaction effects between individual-level causes and social-structural causes on the collective level.

One of the goals of this inquiry is to provide analytical tools for using rationalities as an *explanandum* of social phenomena. In this chapter, the theoretical basis of this kind of tool has been suggested. However, as it has also already been argued, it is not enough to consider the types of rationality only on a theoretical level. The theoretical basis seems to suggest that assuming multiple ideal types would benefit RAT. The theoretical discussion above also seems to suggest that one needs to consider at least three ideal types of rationality: instrumental, axiological and even risk rationality. However, it is also felt that one should be very careful about the validity of these assumptions: before accepting, both of them should be tested empirically. In the next chapter, the definition of rationality is reconsidered in an empirical context.



## **6 RATIONALITY OR RATIONALITIES? EMPIRICAL TEST OF THE DIMENSIONALITY OF RATIONAL DECISIONS**

### **6.1 Multiple rationalities as a starting point of analysis**

It was argued in the previous chapter that rationality should be considered as a phenomenon possibly having multiple ideal types. A classical example of this kind of point of view is Max Weber's division of rational social action into instrumental and value rationality. Weber's two ideal types of rationality was felt to be a better starting point than to assume only one ideal type from which all action would more or less deviate from. It was also suggested in the previous chapter that it might be worth considering additional ideal types, because not even Weber considered his ideal types to be fixed. The suggested additional ideal was risk rationality. If the assumption about multiple ideal types was accepted, it means that the theory about rational action can be used in comparison of individuals as groups as well, because the types of rationality can be interpreted as collective as well as individual properties (see Lazarsfeld - Menzel 1961). This is something that cannot be done if the type and form of rationality was assumed to be equal conditions of each individual actor.

However, it is not known whether human behaviour truly has the characteristics assumed above. It may be that these assumptions were somehow false or that although considered as logically valid, human rational behaviour has a simpler pattern when measured on the generalised population level. It may, for example, be that the assumption about one type of rationality or even only a fraction of it, for example, economic instrumental rationality, is sufficient for the description of the most general principles of social behaviour, selection or decision-making. That is why the empirical validity of the theoretical assumptions of the previous chapter needs to be analysed empirically.

One of the suggested ways to analyse rationality empirically is to use survey-based attitude questions reflecting possible patterns of rational action and choice-making (Opp 1998; Friedrichs - Opp 2002; see also Sen 1977). This is also the strategy that will be used here. The attitude questions designed in order to cover different aspects of rationality of action were included in the survey dataset "Finland 1999" (see Erola - Räsänen 2000). These variables will

be used as a primary source for the analysis. It should also be considered highly advantageous if the theory of rational action could also be operationalised with other datasets covering attitude questions that were not originally targeted at the estimation of rationality. In order to try this, a set of work-related attitude variables from European Values Survey 1999/2000, the European part of the World Values survey (European Values Survey 2001; see also Inglehart et al 2000) is used as a secondary dataset. Although the data is huge in size, the topics that this data covers are much more restricted than the areas of everyday life covered by “Finland 1999” dataset. Therefore, only the work-related question pattern from the latter dataset will be used.

The outline of this chapter will be as follows. First some existing tests applying RAT will be described. Then the idea of measuring rationality will be discussed at a more detailed level. Finally, a “reality” test of rationality theory is performed by applying multidimensional scaling (MDS) on the chosen variables from both Finland 1999 and European Values Survey 1999/2000 -datasets.

## 6.2 How rationality has been applied in previous studies?

There are numerous occasions in which rationality theories are used as a theoretical frame of reference for the interpretation of observed empirical regularities, whereas the occasions in which the assumptions of the theories are tested first are relatively rare.

For example, Breen and Goldthorpe (1997) applied RAT to educational selection in a formalised manner, but did not include an empirical analysis of the phenomenon with it. They proposed a logical model how persons are likely to make decisions without explicit testing of the assumptions with empirical data. Based on the results of previous studies, they assumed that three factors have an impact on educational selection: the cost of remaining in education, the probability of success if the students continued in education and the valuation of educational outcomes. The most important single factor affecting all three would be avoiding the worsening of social status, thus risk-aversion in relation to social status.

Later, Need & de Jong (2000) applied the same assumptions to the empirical analysis of class-based education differentials in the Netherlands with a two-wave panel survey performed on the students. The assumptions were analysed by measuring the level of parents’ education, the degree the students wanted to complete when asked during the first panel collected before final exams, their educational success based on the grades of final exams and collected during the second panel, the expectations of the level they felt they

could complete as well as net monthly family income. The results support the model of Breen and Goldthorpe. The expectations of success are higher in the families in which parents are better educated. The income of the parents has an effect on continuing to university level. The principle of risk-aversion, as a tendency to avoid downward mobility, seemed to be the most crucial factor in the explanation of educational selection. However, the theory failed to give an explanation for gender differences that seemed to remain even after all of the other effects were controlled. Need and de Jong conclude that in the future the theory should be adjusted in such a manner that cultural or normative explanations do not need to be included in the models in order to describe the differences correctly. (Need - de Jong 2000.)

Although Goldthorpe's version of RAT is meant to be different from usual egoistic RCTs (see previous chapter), both formal and empirical analysis reveals that when applied to research, the actual mechanisms assumed to be at work are risk-aversion as well as cost-benefit calculation. Cost-benefit calculation can easily be considered as referring to the typical utilitarian version of RCT. However, in the previous chapter it was pointed out that risk-aversion could also be interpreted in a utilitarian manner as well (i.e. Friedman et al 1994, see also previous chapter). Basically, Need & de Jong would like to take one step further, and extend these types of rationality to cover also value rationality. This cannot be considered as a logically consistent requirement as such unless the fallacies of norm- or culture-based assumptions are proved or accepted for other reasons. Actually, rather than supporting the idea of integration, Need's and de Jong's empirical results seem to support the idea of separating value-orientation from instrumentality, as they nevertheless show the lack of fit of the model including only the idea of risk-aversion and cost-benefit calculus.

As Opp (1998) has noted, the method of measuring only behavioural implications is one of the most often applied ways of avoiding the measuring of utilities and beliefs in the empirical application of RCTs. The actual preferences of the actors are then not estimated. Need & de Jong asked about the expectations, but not in a way that would reveal a preference structure, and thus the variation of rational motives. In a sense, their research setting gave an opportunity to do only half the job – it is not known why educational preferences were like they were. The second method is to assume that all actors have the same preferences, the preferences are stable over time and only external constraints explain behaviour. This was roughly Goldthorpe's motivation to argue that RAT is especially suitable for the analysis of the large-scale datasets. The third way to avoid measuring rationality itself is to assume that preferences can be inferred from actions. An example of this situation would be to conclude that getting better paid work, rather than lower paid, would be a

sign that better salary is the reason for choosing better paid work. In reality, there may be other reasons as well and the salary would not in certain cases make a difference at all. The fourth way is to assume that reality is correctly perceived. If this is the case it is basically assumed that all actors are able to estimate, without error, the long-term outcome of their actions and are always able to choose the best option for decisions based on these observations. The fifth way is to assume that the costs and the benefits are always linked to the observed stimuli. The *egoistic utilitarian* version applies to the last one. That would be to take for granted that all of the changes in the occupational career of a person can always be explained with lowered costs or improved benefits. (See Opp 1998, 221-227.)

Need's & de Jong's study is a good example of how rational action may be differentiated from the rationality of an individual. It may be argued that educational expectations are signs of the rationality of action. By asking why expectations were as they were, one should be able to outline a preference structure some (for example, see Hechter 1994; Opp 1998) are asking for. However, when educational expectation was analysed only in relation to educational success and social background, one is actually asking how rational the expectations were or, or to put it more correctly, how rational the actors are in the light of their abilities and resources. The "stupid" choices and expectations, which are easily interpreted as irrationality of a person, can be due to the fact that the expectations and choices are what they are, for example, because of the strong values promoting certain choices and decisions that would contradict a choice that is made instrumentally. Thus, it needs to be underlined that the question about the "level" of the rationality of action is only meaningful in relation to the preference structure a person applies in selection-making. The decisions and choices of a person can produce error ("stupidity", wrong choices) to rationality of action only in relation to a certain fixed preference structure.

Although many proponents of RCT argue in favour of using value and attitude-related measures as a means for validating the assumptions of the theory in use (Hechter - Kanazawa 1997; Opp 1999; Sen 1977; Hechter 1992; Hechter 1994; for an opposite argument see Stigler - Becker 1977), there doesn't seem to be too many studies actually applying such methods. Not even if, for example, Opp (1999) has noted that the selection of behaviour-related assumptions within theory should be primarily an empirical question and if these empirical means would be applied and the behavioural assumptions would be tested, the whole question about thin and thick versions of rational choice could be overcome. Opp's approach will be followed here. However, before describing in detail the value and attitude variables that will be used in the test, the problem of measuring rationality needs to be discussed further.

### 6.3 Impossible task of measuring the abstract point of reference

It is likely that those researchers who only have little experience in measuring any social phenomena but who are nevertheless well acquainted with Weber's texts would argue that the idea of measuring rationality (or the behavioural basis of rationality) in the first place is outrageous and, to put it even more clearly, simply impossible, violating Weber's original idea of considering rationalities as ideal types. This is because, like it was referred in the previous chapter, ideal types are not assumed to exist in reality, but being abstract and pure points of reference for thinking. So how can we measure something that does not exist in reality?

Like Popper already pointed out almost seventy years ago, this question is something that any scientist applying concepts on different levels of abstraction and especially those applying empirical data are always forced to deal with. A theoretical statement can always only refer to the certain perceived empirical statuses – the connection can never be taken for granted. Nor can any theoretical assumption be justified with empirical findings only. (See Popper [1935]2003, 21-22, 75-76.) Furthermore, as the analysis below will be based on quantitative survey data and thereby on the generalisations based on the expected actions of populations, it is not actually rationality as an absolute individual property of certain individual members, but the collective properties of the populations that will be studied here – which in their turn are nonetheless of course based on the compounded observations of member properties (see previous chapter and Lazarsfeld - Menzel 1961).

How can the “non-existing” can be measured, then? For those familiar with measuring latent structures these principles are well-known, whereas for more theoretically-oriented readers the ideas need to be clarified. The easiest way to exemplify the strategy is to start from the assumption of a single ideal type of rationality. Consider Figure 3a. Point R is the pure point of reference, the ideal type of rational action that in reality cannot be found. Let us consider this, for example, as an ideal way for a person to maximise economic utility and that for a person called Joe, as well as for his friends, this ideal way is working. The criteria of this rational action is known (working), thereby its value is in principle known (maximise the time of work). By measuring to what extent the individual or group deviates from this criterion (inasmuch they maximise time of work) the level of rationality can be estimated. In the figure this is presented as point  $X_1$  on line D, which in turn refers to the level of deviation from the ideal type. Also, other individuals or groups can be put in order according to how much they deviate from the ideal type R. They are presented in Figure 3a as points  $X_2$  and  $X_3$ .

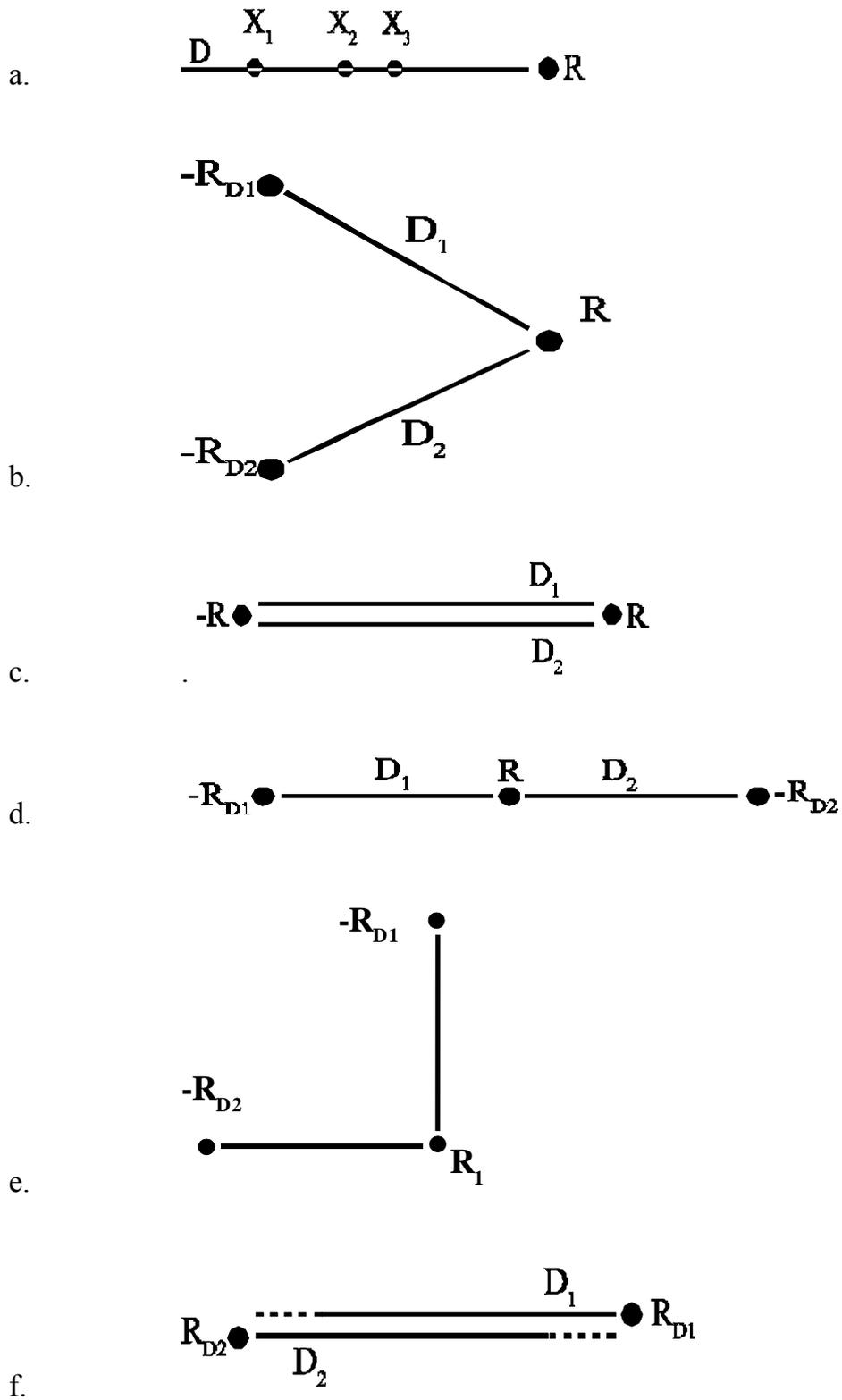


Figure 3. How the latent structure of rationality can be estimated.

One can never be sure inasmuch a single individual is actually applying this kind of a rational choice or selection. Observations about successful selection-making of a single individual may be only due to luck, guessing or simple imitation, as well as following because of meaningful, rational decisions. For example, in the case of working, one may imitate others by spending much time doing it, although the ultimate goal of working was not the maximum economic utility. When applying quantitative data, one may assume that the tendency of luck is distributed evenly over different populations. The cognitive abilities, involving the capabilities for more successful guessing and successful imitation are in turn likely to be dependent on various socio-demographic factors. Thereby the different socio-demographic sub-populations can be compared, for example, by comparing the average levels of rationality of these populations, as any analytical properties of the collective.

One may now start to consider what is at the other end of line D? Should it be considered as its own ideal type? Clearly it does not have to be so; it could be considered simply as the negation of R, -R, which in itself does not need additional definition. This means that from the point of view of the ideal type R, the opposite end of the variation is ultimately irrationality, because it is as far from the considered type of rationality as possible. Still, in the terms of distinguishing an individual or a group from others, the opposite ends of D are easily reversible – in order to distinguish individuals and groups, one can as easily test the deviation from irrationality. In the case of the work-example, it could be achieved by measuring the inasmuch time used for working is minimised by Joe and his friends.

Things get more complicated, if it is accepted that there are various criteria of rationality, and thereby also various ways to deviate from point R. This situation becomes apparent if there were multiple criteria of an ideal type, such as in the case of instrumental rationality, which was defined as meaningfulness both in relation to means and outcome. Figure 3b presents the situation with two criteria of an ideal type. Points on the lines  $D_1$  and  $D_2$  show how much action deviates from the ideal type according to separate criteria. Although the ideal type R combines both Ds, it may be wondered what combines the opposite ends  $-R_{D1}$  and  $-R_{D2}$  to each other? Automatically, nothing other than the assumed ideal type R. For example, the wanted outcome of Joe and his friends is to maximise economic utility, and one way to reach that goal is to work. However, there may be other ways to do this apart from working, for example, stealing. Both means can be used in order to achieve the goal of maximum economic utilities, but otherwise they do not have too clear positive correlation. On the contrary, time used in working cannot usually be used in stealing.

In order to know whether  $-R_{D_1}$  and  $-R_{D_2}$  actually are equal and could thereby be simplified to the form of  $-R$  (see Figure 3c), one should compare how the deviation of individuals or groups varies on both  $D_s$ . If the amount of deviation matches, it can be accepted that  $-R_{D_1}$  of Figure 3b equals  $-R_{D_2}$ , and could thereby be simplified as  $-R$ , like in Figure 3c. However, if the variations do not match, one needs to consider other options.

If the smaller deviation of  $D_1$  equals the bigger deviation of  $D_2$ , one ends up with the situation presented in Figure 3d; it is actually the points  $-R_{D_1}$  and  $-R_{D_2}$  that are the opposite ends of the deviation,  $R$  being the centre point on this line. This means that one should consider another of the points  $-R_{D_1}$  or  $-R_{D_2}$  as the true ideal type, the pure, abstract point of reference in question, and consider the other end point as its reversible negation. Also, it follows that the assumed point  $R$  should not be considered as the ideal type at all, but merely a point of generalisation of action on the average.

If the deviations of values on the dimensions are completely independent of each other, one should accept the fact that  $D_1$  and  $D_2$  in Figure 3b present two separate dimensions of the phenomena. In that case, the original idea of the ideal type becomes less important as an abstract point of reference than it would be to only concern the ideal dimensions of the deviation of action. Then, the ideal type can only be properly understood as a certain kind of combination of the dimensions of rational behaviour, like presented in Figure 3e.

The fact that the ideal dimensions of rational behaviour are actually more important than the ideal types may be pointed out with other examples also. Consider Figure 3f. In this case it is assumed that there are two assumed ideal types of action,  $R_{D_1}$  and  $R_{D_2}$ , which can be estimated by using two different criteria. Let us, for example, assume that inasmuch Joe and his friends believe working to be a good way of getting economic utilities, working can be considered as a reference to instrumental rationality. At the same time, the denial of the possibility to use stealing for this purpose may be considered a reference to value rationality. However, if it turns out that the higher deviation according to the first criteria, the assumption about working as a means of getting economic utilities, equals lower deviation according to the second criteria, the denial of using stealing as a way to getting utilities. This means that the assumed ideal types, instrumentality and value rationality, are actually opposite ends of the same dimension of rationality. The other type is to be considered as irrational according to the “logic” of another ideal type. This makes the ideal type and its rationality only subordinate to the more important question about how the combined dimension should be defined. However, in order to test the level of rationality according to either of these ideal types only, another is needed.

So, although it is possible to estimate the level of rationality, the assumption about various ideal types and their possible identification by knowing the criteria of them is only half of the job to understand rationality. It is more crucial to find out how these criteria and thereby the assumed ideal types are arranged as the ideal dimensions of rational behaviour. This dimensionality of rationality is what is wanted to be defined with the empirical analysis in this chapter.

#### 6.4 Attitude questions for the estimation of rationality in *Finland 1999* dataset

In order to test how many ideal-types or dimensions of rationality are actually needed, one needs to set the criteria to the ideal type of rationality in question. The criteria used were presented in the decision table in the previous chapter. These criteria, except the one concerning whether action is bound to the present, were converted into a special question pattern that was included in the national level survey *Finland 1999* (see details of the data in Chapter 1).<sup>53</sup>

Because it has been shown that there are sometimes serious problems in the survey measurement of attitudes and values (Fischhoff 1991), the usage of this approach needs to be described throughout. As a starting point, it was assumed that in order to study rationality in its whole range, action has to be considered in several contexts typical to individual life course. The situations covered in the attitude questions were selected and formulated in such a way that most people can have opinions about them or position themselves in them, even if not experienced by the respondents themselves. In addition to this, the questions were designed in order to be applicable to various decisions made in the given situation, in order to make it easier for the respondents to position themselves within it. For example, taking a big loan may as well refer to taking a student loan in order to finance ones education as to taking a house mortgage. When the measurement of rationality is operationalised in this way, one gets an indirect rather than straightforward measure about the type of action a person is likely to apply if making a decision or selection, etc.

Four hypothetical interaction situations were to be considered: making a decision about taking a big loan (in order to buy a car or a house), making an important decision concerning family (such as moving to another location), making an important decision in work, and making an important decision con-

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<sup>53</sup>In 1999, when the questionnaire was designed, the criteria that were used in order to estimate were drawn from the theory of rational action of Max Weber and from the ideas of Beck concerning risk rationality. Because these cover the final criteria used here also, in practice the questions have been used like they were originally intended.

sidering a relationship. Basically, the aim was that if only the chosen criteria are valid, the coverage of the questions would be so wide that the pattern of rationality that can be extracted with the questions should not be context-specific but applicable to almost any social topic. The loan taking was assumed to be the most clearly economically motivated area of the questions, whereas the decisions concerning family or relationships were assumed to be least like that. The decisions made in work were assumed to be economically motivated only depending on the characteristics of each job.

There were also similar questions concerning buying things necessary for everyday life and choosing the way of payment in a shop. These questions are, however, excluded from the current analysis, as it turned out that the tasks were conducted routinely and could not be considered as rational decision-making in a similar manner to the other variables. It has also been found elsewhere that the standardised questionnaires poorly apply to routine decision-making in everyday life (Friedrichs - Opp 2002)<sup>54</sup>. Also, routine behaviour would not be considered as rational social behaviour according to Weber's "classical" definition (see Weber [1920]1978).

Five types of statements were assumed to be able to cover the aspects that were felt to be needed in order to differentiate the important dimensions of rationality. The respondents were asked if they agreed or disagreed with the statements presented. The level of agreement was estimated with a five-item Likert-scale: 1 – agrees strongly, 2 – agrees, 3 – does not agree or disagree, 4 – disagrees, 5 – disagrees strongly. Because there was not a "don't know" option, in such cases the respondents chose option 3, or did not answer at all. In this way, the respondents that were reluctant to choose were also forced to make a selection. In order to make the results more easily interpreted, the scales here are reversed, in the way that a higher value will always refer to a stronger agreement with the statement in question.

The first statement in each hypothetical situation was formulated similarly:

*"Before making a decision I have to consider if x (taking loan, making the decision about family, work or a relationship) is right or wrong according to some important principle."*

The question was targeted at the evaluation of value-based choices.

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<sup>54</sup> Friedrichs & Opp (2002) discovered that a standardised survey method for inquiring about a decision-making system in everyday life worked out poorly, and that only after applying non-standardised methods of solving the chains of decision leading from one to another was the test successful. However, the obvious side effect of this was that the results had only a very limited level of generality; the study was conducted only with students. Also, it may be argued that everyday behaviour that is defined simply as "behaviour that individuals engage in regularly" is still too restricting for generalised RAT, because the important 'big' decisions should also be considered, too, having considerably effects on the relevancy of each type of rationality in question.

The second type of statement was supposed to take risk rationality into account. The inability to optimise the outcomes of actions was the main target of these questions. The main problem in this case was that optimality should be presented as a more general case than only economic optimum. In the case of work, the formulation was mildly:

*“Each decision has to be considered separately.”*

In the case of taking a big loan, an alternative way applied was to underline the insecurity that it was supposed to create in future. Thus, the statement in the case of taking a loan was:

*“Taking loan creates serious insecurity in the future.”*

The decisions concerning family or a relationship obviously lacked the speculative aspect typical to strictly economy-related decisions. In its case the formulation was simply:

*“The outcome of big decisions considering (life of family, a relationship) is impossible to see in advance.”*

Basically, it could be that anyone with pragmatic sense would more or less agree with this statement. However, it is the differences in what extent the statement is agreed with that count here.

The third type of statement was supposed to refer to whether the respondent believes that there is at least someone who can have enough knowledge to provide recommendations about the decisions in a given interaction situation. The formulation is in the case of work:

*“I can trust what somebody else recommends as the best option when an important decision is to be made.”*

The recommendations were not assumed to have too strong an influence in the case of taking a loan. Even if such instances could be found, the recommendations would quite likely be based on economic evidence, not on the roles or the authority of such actors. Thus, this kind of question for taking loans was not included in the survey.

In the case of the decisions concerning family and relationships, the differentiation between traditional and expert authority was wanted to be made clear. Thus, the statements were more heavily biased on expert knowledge. The statements were:

*“When making a decision considering (family, a relationship) the advice of expert or other outsider is important.”*

The fourth type of question was meant to refer to the possibility of gaining knowledge beforehand about any interaction situation. In the case of family, work and relationships, the formulation was:

*“While making the decision I can rely on the previously gained knowledge.”*

In the case of taking a loan, the formulation was without the word “previously”, because it was felt that in order to be able to be an instrumentally rational actor in this case, information cannot be too old (for example, because of the changing interest rates, etc.).

The last type of variable was the question that was meant to estimate the lack of trust in the future outcomes of action. The variable was formulated similarly in all cases:

*“I somehow take into account that my choice might turn out to be failure in the end.”*

One could probably argue that this is simply something that a wise person does – take possible failure into account. However, this is exactly what is supposed to make risk rationality its own type of action. It refers that neither knowledge nor the means are considered as efficient enough to gain the outcome.

The selected attitude variables are collected in Table 8 (for details, see Erola – Räsänen, 2000). It is expected that value-rational persons would agree more likely with the questions under the heading of value-orientation.

Uncertainty is expected to be related to risk rationality, trust to knowledge to instrumental rationality and in some extent to value rationality, previous knowledge also to instrumentality and preparing oneself for failure again to risk rationality. Thereby, there are actually 19 empirical criteria of rational behaviour, which are all understood as referring to the deviation from the three assumable different ideal types of rationality<sup>55</sup>.

## 6.5 The test of dimensionality of rationality

There are four different hypotheses to be considered in the analysis of the dimensions of rational action. The first is:

***Hypothesis A:*** *There are multiple dimensions of rationality, which each refers to a separate ideal type: instrumental, value, and risk rationality.*

This was what the theoretical assumptions at the end of the previous chapter seemed to suggest. It was assumed basically that the ideal types equal the different ends of separate dimensions.

The second hypothesis is the following:

***Hypothesis B:*** *There is only one dimension in action that changes according to the strength of instrumental, possibly economic rationality of action, and that all motives of action can in principle be arranged in*

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<sup>55</sup>The original translated question pattern is presented in Appendix B.

*relation to others according to the variation on that one dimension only.*

This result would be the same as was assumed in Figure 3c. It is also the assumption of the “thin” versions of RCT. Goldthorpe’s original formulation of RAT seems to have this kind of presumption, or at least one that runs very close to it.

Table 8. Description and abbreviations of attitude variables used in the estimation of the dimensionality of rationality.

<b><i>Questions</i></b>		<b><i>Abbreviation</i></b>
Value-orientation,	...taking a big loan.	VALULOAN
	...making an important decision concerning family.	VALUFAMI
	...making an important decision concerning a job.	VALUJOB
	...making an important decision concerning a relationship.	VALUCOUP
Uncertainty	...related to taking a big loan.	UNCELOAN
	...related to making an important decision concerning family.	UNCEFAMI
	...related to making an important decision concerning a job.	UNCEJOB
	...related to making an important decision concerning a relationship.	UNCECOUP
Trust in	...experts, making an important decision concerning family.	EXPEFAMI
	...recommendations, making an important decision concerning a job.	RECOJOB
	...experts, making an important decision concerning a relationship.	EXPECOUP
Previous knowledge	...can help to make the decision concerning taking a big loan.	KNOWLOAN
	...can help to make the decision concerning family.	KNOWFAMI
	...can help to make the decision concerning a job.	KNOWJOB
	...can help to make the decision concerning a relationship.	KNOWCOUP
Prepare oneself for	...failure of decision concerning taking a big loan.	FAILLOAN
	...failure of decision concerning family.	FAILFAMI
	...failure of decision concerning a job.	FAILJOB
	...failure of decision concerning a relationship.	FAILCOUP

The third hypothesis argues the following:

**Hypothesis C:** *Action needs more than just one ideal type of rationality to be described properly, but that some of the proposed ideal types are positioned as opposite ends of the same dimension of rational action.*

That means that (some of) the assumed ideal types would only be subordinate to the ideal dimensionality of rationality because it was claimed that in this kind of situation the dimensionality of action is more crucial than the ideal types of it that would only be the parallel ends of the dimensions. In this case, one should expect to find evidence of the situations either like in Figures 3f or 3e. It is also possible that the hypotheses B and C are both found to be valid. Then, the rest of the assumed ideal types are positioned at the same end opposite to instrumental rationality.

Weber's point of view could actually support any of the three first hypotheses, because it is not clear whether he considered value and instrumental rationality as opposite ends of the same dimension or as two different dimensions.

The fourth hypothesis is that the test and the measures of rationality fail altogether and that the optimal dimensionality refers, for example, to the types of hypothetical interaction situations, not to the types of rationality. Thereby the hypothesis is:

**Hypothesis D:** *The latent structure of action is not arranged according to the scales that can be understood as referring to the rationality as meaningfulness.*

Basically the hypotheses should cover all of the logical outcomes of the test to be done.

In order to test which of the hypotheses are valid, the relevant amount of dimension of rational behaviour needs to be extracted from the attitude variables with an explorative method of extracting the latent structure of the data. In order to do this, it is customary to apply factor analysis (or principal component analysis, like in Chapter 4). However, preliminary analysis of the variables already shows that the correlations between the variables are rather weak – only a few correlations between a few items exceed the often suggested lower limit of 0.3. Then again, if the chi-squared tests are run between the variables, it shows significant associations in each case. Thus, a method based on correlation is probably not optimal for finding the latent structure of this variation.

That is why multidimensional scaling (MDS) will be used as the primary method of analysis, and factor analysis (to be exact, principal component analysis, PCA) as the secondary method. Whereas factor analysis is based on vectors, MDS is based on the distances between points. It does not assume a linear connection between the analysed variables. Not even the assumption

about the multinormality of variation assumed in factor analysis limits MDS, because there are no limitations of the level of measurement of the analysed variables in MDS.<sup>56</sup> (Schiffman et al 1981, 13; Davidson 1983, 213; Ludlow 1999, 962-975.)

Although applied rarely in sociology, MDS has been rather widely used in social psychology and the research of education. If compared to factor analysis, the dimensionality of data is usually more efficiently reduced with MDS (Brazill - Grofman 2002; Maslovaty et al 2001).

A recent study by Brazil & Grofman (2002), even argues that in the case of the analysis of binary choice data, factor analysis has even led some researchers to fallacious assumptions about the latent structure of the data. They tested binary choice data on US Congress voting, and found out that factor analysis created at least one “bogus” dimension. The authors speculate whether this may also be the case with other types of data. In order to avoid this kind of problem, they suggest using MDS, although MDS easily puts too much weight on the first dimension. (Brazill - Grofman 2002.)

The principal component analysis for the same items that are used here is reported in Appendix C.

### 6.5.1 Rationality dimensions of Finland 1999-data

In MDS, data is analysed as proximities. In this case it means that the distance between each pair of variables meant to measure rationality is collected in a proximity table (similar to, for example, a distance table between train stations). The equation how the proximities are computed can be found from Appendix A. The proximities are then fitted into n-dimensional space, in a way that the distance between points in that space should be equal to a proximity matrix. How equal the real proximities and the fitted geometrical distances are is referred to with Stress-measures. Different fitting algorithms try to minimise different types of Stress. Despite the differences of these measures of “badness of fit”, the interpretations are always the same – Stress always gets smaller when more dimensions are assumed.

The most usual method for determining the best fitting dimensional solution is the deepest descent (or to look for the elbow), which means that one chooses the amount of dimensions as optimal where the descent in Stress from the previous number of dimensions to the next is relatively the largest, and after which the reduction in Stress is subsequently smaller. (Kruskal - Wish 1978, 7-30.) There are also some “rules of thumb” related to fit measures in

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<sup>56</sup>Already the usage of nominal scale in principle excludes the normality.

order to interpret the results. For example, one should not accept any model having Stress-I over 0.15 and the Congruence should be expected to be over the limit of 0.90. There has also been development for finding the upper Stress limits of acceptable dimensionality with the Monte Carlo -simulation, which should give the interpretation of dimensionality a more objective basis (Sturrock - Rocha 2000, see also Schiffman et al 1981, 11). Based on these simulations the researchers have constructed stress evaluation tables, such as the one by Sturrock & Rocha (2000). In a fitting model Stress-1 (Kruskal's "classic" Stress) should be under the upper stress limit given in the stress evaluation table. However, the most important principle for choosing the right dimensionality is the theoretical fit of the solution (Kruskal - Wish 1978, Schiffman et al 1981, Borgatti 1997, Sturrock - Rocha 2000).

Table 9 presents the fit statistics according to the dimensionality between the variables, the stress measures for each additional dimension assumed to be found in the data, according to both Normalised Raw Stress and Stress-I, and Tucker's coefficient of Congruence. Normalised Raw Stress is presented because the PROXSCAL-program used here applies an algorithm that tries to minimise it. The table also shows upper limits for Stress-I according to the stress evaluation table of Sturrock & Rocha for nineteen items.

Table 9. Stress and Fit Measures for rationality variables of Finland 1999 dataset in the test of dimensionality with Multidimensional Scaling. 1-4 dimensions; Normalised Raw Stress, Kruskal's Stress-1, and Tucker's Coefficient of Congruence.

	<i>Dimensionality</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Normalised Raw Stress</i>	0.110	0.020	0.008	0.005
<i>Stress-I</i>	0.331	0.141	0.091	0.070
<i>(Sturrock's &amp; Rocha's Upper limits for Stress-I with 19 items)</i>	<i>0.441</i>	<i>0.269</i>	<i>0.189</i>	<i>(not reported)</i>
<i>Tucker's Coefficient of Congruence</i>	0.944	0.990	0.996	0.998

Based on the hypotheses, the preliminary assumption is that optimal dimensionality is between 1 and 4 dimensions. One dimension would support the thin version of rationality, four is to test if even the assumed maximum number of ideal dimensions, three, is not enough. The deepest descent seems to position itself on the solution with two dimensions, because Stress-I reduced

most in relation to the previous number of dimensions when two dimensions are assumed.

The stress of 0.141 is well under the upper limit of 0.269 for 19-item two-dimensional solution in the Stress evaluation table (see Sturrock - Rocha 2000), and can thereby be accepted as sufficient. However, a solution assuming only one dimension already has Stress under the limit provided by Sturrock & Rocha. Also, Tucker's coefficient of Congruence is on the high level already with one dimension. On the other hand, Stress-I is clearly over the limit of 0.15, which means that accepting the one-dimensional solution is not recommended. Given that the stress on four dimensions gives some reference to the amount of error in the case that should fit "perfectly" (see Borgatti 1997), it can be argued that the fit does not improve very significantly if more than two dimensions are assumed. Thus, it can be interpreted that the fit statistics suggest accepting the two-dimensional solution.

The result needs to be ascertained with a theoretical interpretation of the dimensions. The dimensionality coordinates for each solution are shown in Table 10. The one-dimensional solution differentiates mainly in the variation between *value-orientation* and *trust on knowledge and expertise*. The two-dimensional solution, however, differentiates the variation between *uncertainty* and *failure* -variables and *knowledge*- and *expertise* -variables. The assumption about higher dimensionality does not provide an interpretation that could be supported by the hypotheses. Thereby it may be argued that the theoretical step also supports the two-dimensional solution.

The positions of the original variables of the two dimensions of rationality that MDS produced are presented in Figure 4. The variables related to the uncertainty of action are positioned in a down-centre position, the variables related to trust to knowledge and experts to up-centre, while the value-related variables are positioned to right-centre. The dimensions of the MDS can thereby be named means-to-values -dimension (dimension 1) of rationality and risks (or failures)-to-outcomes dimension of rationality (dimension 2). In MDS, the axes could also be rotated freely, if felt necessary, in order to get better theoretical fit. However, because the original interpretation of the dimensions fits the theory, the rotation is not needed.

Table 10. Dimensionality coordinates from Multidimensional Scaling of the rationality variables from *Finland 1999* -dataset.

<i>Dimensionality</i>	<i>2</i>			<i>3</i>			<i>4</i>			
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	
<i>Dimension</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	
<i>VALULOAN</i>	1.845	1.324	0.358	1.250	0.320	-0.177	1.201	0.203	-0.205	0.022
<i>VALUFAMI</i>	0.781	0.823	0.175	0.811	0.109	-0.162	0.806	-0.006	-0.135	-0.192
<i>VALUJOB</i>	0.356	0.287	0.010	0.298	0.011	-0.087	0.298	-0.055	-0.084	-0.154
<i>VALUCOUP</i>	0.585	0.550	0.102	0.523	0.057	-0.117	0.525	-0.070	-0.087	-0.197
<i>UNCELOAN</i>	0.516	0.470	-0.475	0.382	-0.495	0.251	0.292	-0.372	0.179	0.466
<i>UNCEFAMI</i>	-0.239	-0.234	-0.478	-0.177	-0.344	0.441	-0.158	-0.348	0.402	-0.252
<i>UNCEJOB</i>	-0.152	-0.084	-0.032	-0.097	-0.016	-0.134	-0.101	-0.059	-0.146	-0.083
<i>UNCECOUP</i>	-0.388	-0.405	-0.535	-0.446	-0.422	0.239	-0.388	-0.386	0.159	-0.336
<i>EXPEFAMI</i>	0.192	0.052	0.854	0.035	0.600	0.630	0.084	0.656	0.567	-0.028
<i>RECOJOB</i>	-0.554	-0.390	0.448	-0.464	0.270	0.419	-0.458	0.382	0.373	0.014
<i>EXPECOUP</i>	-0.134	-0.189	0.885	-0.141	0.804	0.394	-0.061	0.803	0.348	0.207

(Table 10 continued.)

<i>Dimensionality</i>	<u>2</u>		<u>3</u>			<u>4</u>			
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>KNOWLOAN</i>	-0.578	-0.502	-0.467	0.138	-0.197	-0.375	0.108	-0.222	-0.369
<i>KNOWFAMI</i>	-0.636	-0.554	-0.415	0.082	-0.400	-0.409	0.099	-0.411	-0.069
<i>KNOWJOB</i>	-0.376	-0.287	-0.286	0.061	-0.175	-0.288	0.073	-0.188	0.011
<i>KNOWCOUP</i>	-1.297	-1.065	-0.574	0.547	-0.723	-0.447	0.501	-0.733	0.264
<i>FAILLOAN</i>	0.263	0.253	0.142	-0.642	-0.078	-0.011	-0.509	0.060	0.441
<i>FAILFAMI</i>	0.027	0.044	-0.018	-0.345	0.006	-0.050	-0.331	0.094	0.030
<i>FAILJOB</i>	-0.011	-0.038	-0.117	-0.214	0.000	-0.146	-0.190	0.053	0.097
<i>FAILCOUP</i>	-0.201	-0.054	-0.240	-0.519	-0.128	-0.314	-0.501	-0.025	0.128

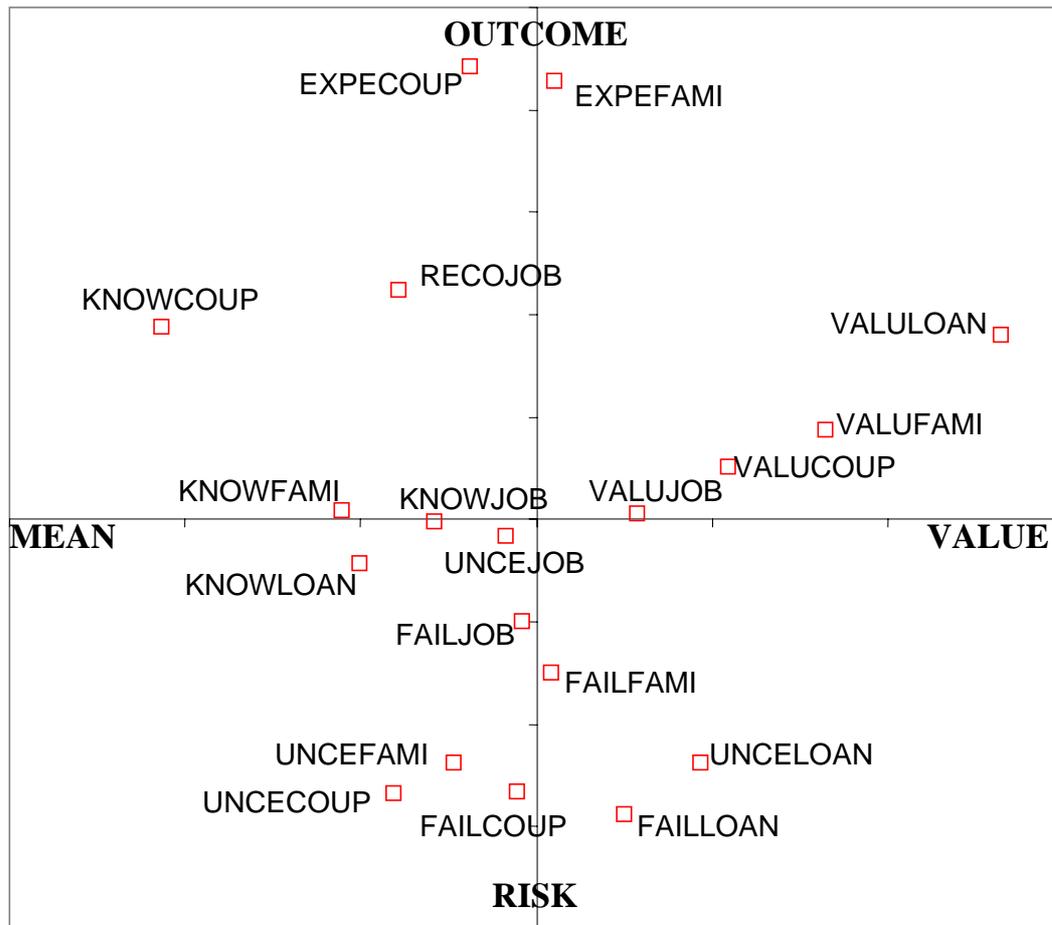


Figure 4. Rationality variables of Finland 1999 dataset in two-dimensional space according to results of MDS.

Figure 4 can be interpreted in such a way that Weber's (1920[1978]) two criteria about different ideal types of rationality, means- and value-orientation, are located at the opposite ends of Dimension 1. If it would have turned out that the second dimension would not have improved the fit or that the interpretation of it would have been theoretically in contradiction with the assumptions, one could have accepted the one-dimensional solution similar to Figure 3e, where there is only two ideal types, of which only the other would be necessary in order to cover the variation of rationality. However, contrary to the assumptions of, for example, Parsons as well as most of the utilitarians, value-orientation cannot be considered as being independent of instrumentality, but actually parallel to the means-criteria of it.

The results indicate, in the spirit of the critiques of RC theories, that assuming only a single dimension to rationality is not yet sufficient, but that one needs to distinguish the dimension varying from risk-orientation to outcome-orientation as well. Weber did not distinguish the variation between risk-awareness to outcome-orientation explicitly. He limited his types of rationality

to the upper-part of dimension, while concerning the outcome-orientation in respect to instrumentally rational action only. This is often considered as the problem of Weber's rationality types (i.e. Parsons 1937). The risk-rational behaviour (see previous chapter), or risk-sensitive decision-making, pointed out by i.e. Tversky & Kahneman (1979; 1991), Kahneman & Lovallo (1993), Luhmann ([1991]1993) and Breen & Goldthorpe (1997), is assumed to be located in the lower-part of the figure. The variation of the different dimensions is independent of the other dimension.

The results support the third hypothesis with a configuration similar to the one presented in Figure 3f. Because the two-dimensional solution is also theoretically supported, it is selected as an optimal starting point when *Finland 1999* –dataset is being analysed. The results suggest that the dimensionality of rationality should be considered as being a more important aspect than the ideal types. However, ideal types have certain intuitive strength because they can be rather easily understood in the light of the classical interpretations of rational action. Thus, it seems to be advantageous to give the dimensions also the interpretation according to the ideal types of action.

In the footsteps of Weber, economic rationality that RCT usually applies is assumed to be part of the left-hand part of the figure, although all of the action in that area of the figure cannot be considered economical, but instrumentally rational in general. It was already suggested in the previous chapter that one should distinguish risk rationality as its own ideal type, according to which action, as such, is more important than its outcome, but according to which the actor cannot also be tied to values, either. Thus, the lower-left part of the figure is named risk rationality, as it seems to come closer to the theoretical definition of risk rationality.

If the interpretation of the ideal types as the logical combinations of rationality dimensions is followed, and the parts of Figure 4 on the left-side are named instrumental and risk rationality, how should the two other parts be named in order to follow the same logic? The left-side seems to cover two ideal types of action referring to value-oriented types of behaviour. If it is assumed that Weber mainly concerned the upper-half of the figure, the part in the top-right is referred to from this as value rationality<sup>57</sup>.

How about the last part of the dimensional table, then? If the interpretation about the dimensions is correct, it would mean that action is value-oriented, but that the outcomes of action are less important factors. The results suggest that also this kind of type of rationality needs to be taken into account, although it was not considered explicitly as its own ideal type in the theoretical analysis of the previous chapter – at least it is just as justified to call this an

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<sup>57</sup>Although it is likely that Weber would have referred to them both as value rationality.

ideal type as it is for any of the three other parts. It can be seen that some of the variables intended to measure risk-sensitiveness are positioned in this area also. The reason for this is that strong value-orientation can also be a way to compensate for uncertainty. Naturally, it is not completely a novelty type of rationality. As it can be remembered, Boudon (2001a, 93-94) has noted that in principle Weber already considered this kind of action when he assumed that it could be possible to distinguish action which is only motivated by axiomatic beliefs, but that nevertheless is not itself a routine or a tradition. According to the example of Boudon, this area of the figure is named axiological rationality. Although in the previous chapter axiological rationality was simply considered as a new name of value rationality, the results here refer to value- and axiological rationality as different ideal types of social behaviour.

### 6.5.2 The dimensionality of rationality in European Values Survey

Are the results from *Finland 1999* -dataset only particularistic consequence of the way of measuring the phenomena? In order to evaluate this the dimensionality of rationality is tested with another dataset also. As mentioned in the introduction and at the beginning of this chapter, *European Values Survey 1999/2000* (European Values Survey 2001) will be used in this task. The comparison of the results from the two different datasets is, of course, unproblematic. Although *EVS1999/2000* is a very impressive dataset, both in respect of the coverage of European population (33 countries<sup>58</sup>) as well as of the range of the aspects of daily life that are studied, the aim of the collection of the dataset has been very different from *Finland 1999* -dataset. It can be seen from the questionnaires of *EVS1999/2000* that the interests of the collectors have been wide-ranging and the ways of measuring different topics are very heterogeneous. There are no standardised attitude question patterns that would be repeated in *various* different contexts of daily life, but the questionnaire patterns vary from topic to topic. The aim of the questions has been to separate the traditional vs. individualistic values and the population level changes between these types of values. (See Inglehart 1997.)

The consequence from this is that a similar measurement of “general” pattern of rational action applied in everyday life as was constructed from *Finland 1999* -dataset cannot be achieved with *EVS1999/2000*. The analysis has to be restricted to one topic at a time. Because a fairly big part of the question-

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<sup>58</sup>The countries included are Austria, Belarus, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Northern Ireland, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, Spain, Sweden, Turkey and Ukraine.

naire concerns working and work-related attitudes, the pattern of rationality of action related to work will be analysed here. It follows that the analysed cases have to be limited to those who currently have a job. The final number of cases to be analysed is 21,598.

Table 11 shows the selected variables from *EVS1999/2000*. The “*good pay*” and “*good job security*” are likely to refer to the outcomes of work, whereas it seems hard to anticipate the level of outcome-orientation to create differences between the other variables, except in the case of “*chances of promotion*”. All of the questions lack the risk-awareness aspect of *Finland 1999* -data, and thus the variation on this dimension should be expected to refer only to the variation from stronger to less outcome-orientation. The other variables should be expected to be arranged mainly in a means-to-values-dimension. Value-orientation seems to be anticipated in the variables “*useful for society*”, “*respected job*” and “*responsible job*”, whereas means-orientation seems to be connected especially to the variables “*meeting abilities*” as well as to “*use initiative*”, “*achieving something*” and “*interesting job*”.

Table 11. Variables used from European Values Survey 1999/2000.

***“Here are some aspects of a job that people say are important. Please look at them and tell me which ones you personally think are important in a job?”  
(0=mentioned, 1=not mentioned.)***

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Q.13A	Good pay
Q.13D	Good job security
Q.13E	Good chances for promotion
Q.13F	A job respected by people in general
Q.13H	An opportunity to use initiative
Q.13I	A useful job for society
Q.13L	A job in which you feel you can achieve something
Q.13M	A responsible job
Q.13N	A job that is interesting
Q.13O	A job that meets one's abilities

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Table 12 shows the fit statistics of the MDS analysis of the variables. The results show that similarly to *Finland 1999* -data, the descent in Stress-I is clearest in the change from a one- to two-dimensional solution. However, the one-dimensional solution could also be considered as being sufficient in order to describe the essential variation between the variables. Stress-I is under the limit of 0.15, and also under the upper limit of ten items of Sturrock's &

Rocha's Stress-evaluation table. Thereby the second dimension does not have to be considered as necessary, unless it fits the theoretical assumptions.

Table 12. Fit measures of the MDS-analysis of the European Values Survey 1999/2000.

	<i>Dimensionality</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Normalised Raw Stress</i>	0.020	0.004	0.000	0.000
<i>Stress-I</i>	0.143	0.067	0.021	0.017
<i>(Sturrock's &amp; Rocha's upper limits)</i>	<i>0.286</i>	<i>0.133</i>	<i>0.058</i>	<i>(not rep.)</i>
<i>Tucker's Coefficient of Congruence</i>	0.990	0.998	1.000	1.000

Table 13 shows the dimensionality coordinates. From the point of view of the previously extracted rationality dimensions of the Finnish data they show a somewhat similar pattern. Dimension 1 seems to vary from value- and lack of outcome-orientation (usefulness for the society, responsible job) to means- and outcome-orientation (good pay, job security, interesting job). If the one-dimensional solution was considered as sufficient and no additional theoretical support could be found for the second dimension, the action could be considered as varying from instrumental rationality to axiological rationality only. However, when another dimension is extracted, it varies from outcome- and value-orientation (job security, respected job) to means- and less outcome-oriented action (achievement, interesting job, meeting abilities), and thus fits the theoretical assumptions about the need for the second dimension nicely.

Table 13. Dimensionality coordinates for different dimensional solutions for variables from EVS1999/2000. Rotated coordinates for two-dimensional solution reported also.

<i>Dimensionality</i>	<i>1</i>				<i>2</i>				<i>Rotated</i>				<i>3</i>				<i>4</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>good pay (Q13A)</i>	-1.221	-1.056	0.161	-0.440	-0.440	-0.002	1.042	-0.178	0.034	-1.017	0.192	-0.027	-0.140							
<i>job security (Q13D)</i>	-0.906	-0.644	0.577	-0.658	0.369	0.618	-0.548	-0.018	-0.625	0.522	0.007	0.148								
<i>chances for promotion (Q13E)</i>	0.678	0.563	0.273	-0.281	-0.214	-0.516	-0.245	0.350	0.516	0.251	-0.341	0.060								
<i>respected job (Q13F)</i>	0.551	0.470	0.364	-0.025	-0.346	-0.485	-0.375	-0.101	0.474	0.371	0.100	-0.076								
<i>use initiative (Q13H)</i>	0.287	0.278	-0.208	0.180	-0.510	-0.293	0.272	0.042	0.301	-0.289	-0.043	0.027								
<i>useful for society (Q13I)</i>	0.745	0.737	0.035	0.427	-0.601	-0.612	-0.122	-0.304	0.595	0.135	0.308	-0.070								
<i>achieving something (Q13L)</i>	0.063	0.028	-0.352	-0.435	0.976	-0.028	0.324	0.100	0.034	-0.305	-0.101	0.173								
<i>responsible job (Q13M)</i>	0.558	0.526	-0.124	0.534	-0.327	-0.537	0.155	0.109	0.521	-0.152	-0.105	-0.125								
<i>interesting job (Q13N)</i>	-0.596	-0.666	-0.354	0.561	-0.199	0.606	0.414	0.097	-0.590	-0.421	-0.092	-0.127								
<i>meeting abilities (Q13O)</i>	-0.159	-0.236	-0.372	0.138	0.854	0.205	0.305	-0.309	-0.209	-0.305	0.295	0.131								

The dimensions of MDS can always be rotated freely in order to improve theoretical fit of the interpretation. In order to interpret the results similarly to Figure 4 from “*Finland 1999*” –dataset, the diagonals of the original dimensions need to be interpreted as the main angles of the variables. This means that the dimensions need to be rotated 45 degrees clockwise. The rotated values of the two-dimensional solution are also shown in Table 13. Figure 5 shows the variables as a two-dimensional plot. It can be seen that rotation posits variables “*good pay*” and “*job security*” as having the highest values on outcome-orientation, and positions the “*meet abilities*” variable as close to zero as possible in that dimension, as it lacks the outcome-aspect and considers only the ability to the right means. Most of the variation can be observed as the variation from means- to value-orientation, like it was anticipated, because the dataset lacked the variables that could have been used in order to differentiate risk-orientation. The only surprise is the position of “*chances to promotion*” -variable, which seems to be placed at the value-end of means-to-values-dimension. It suggests that the expectations about career-mobility may be surprisingly strongly motivated by status-expectations, which in turn refer to value-rational decisions.

It seems to be that the main dimensions extracted from “*Finland 1999*”-dataset are not arbitrary. The rotated dimensions drawn from *EVS1999/2000* are similar to the dimensions of the Finnish data. The ideal-typical groups of means, outcomes and value-oriented action seem possible to be outlined even with this data. Of course, *EVS1999/2000* -dataset is far from being optimal for the current task of testing the most typical outcomes rational behaviour, but it nevertheless gives more support than contradicts the previous result with *Finland 1999* -dataset.

What if only one-dimension of the variables would have been considered as sufficient, how would the conclusion have changed? If one would have accepted only the first dimension and not the other, the arrangement of the variables would have seemed to be somewhat similar to the one pointed out by Boudon – that action is derived from instrumental towards something that could be labelled as axiological rationality – that is value-rational action without the necessity of an actor to bind oneself to the outcomes of it. However, as the critiques of the thin versions of RCT have often pointed out, the multi-dimensional approach gives freedom to interpretation. In particular, this seems to be the case when the estimates of rationality in empirical analysis are far from being optimal. In the case of *EVS1999/2000* –dataset, the empirically optimal solution lacked the ability to take rational risk-sensitive action into account.

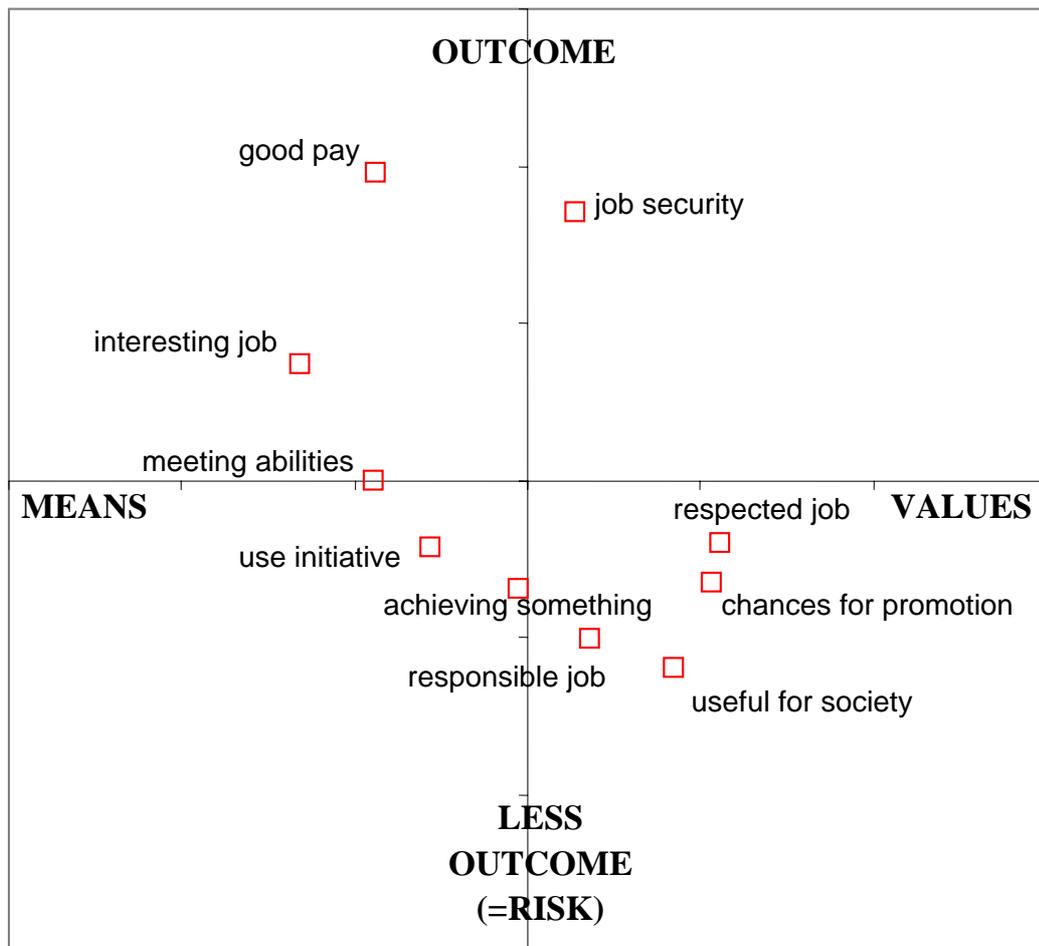


Figure 5. Rotated two-dimensional plot for the MDS-scale coordinates of the variables from EVS1999/2000.

## 6.6 The dual-dimensional character of rational action

The analysis in this chapter empirically validates the meaningfulness of the selected theoretical research setting, as well as draws a somewhat more detailed picture than was obvious according to the theoretical analysis only. In Chapter 2, it was argued that in order to avoid fallacies of both overindividualised as well as the oversocialised actor, social scientists should seek a way to integrate them. Theoretical analysis in Chapter 5 suggested that this might be best done with a version of rational action theory, in which rationality is allowed to have variation that can be assumed to have both individual (member-) and collective properties. It was also assumed that rationality should be based on the principle of a subjective understanding of meaningfulness. Ideal

types that one should expect to be distinguished were instrumental, value and risk rationality. Value rationality was assumed to be the same as axiological rationality.

The analysis in this chapter confirmed some of the assumptions of the previous chapters. It turned out that the way to define the concept of rationality as having only one ideal type, as assumed often in thin versions of RCT, is not necessarily sufficient. The two-dimensional solution theoretically better fitted the cases of both datasets, although according to fit statistics, having only one dimension would have been also sufficient for the adequate presentation of dimensionality of the variables analysed from *European Values Survey*.

The results of this chapter suggest that some of the assumed ideal types of rationality should be considered as opposite ends of the same dimension of the rationality of action. As value- and means-orientation are positioned at the opposite ends of the same dimension, risk-orientation is assumed to be located as opposite to outcome-oriented action. This explains some of the complications that some theorists have felt is present in Weber's original typology of ideal types; instrumental rationality has been presented as being based on both means- as well as outcome-orientation, whereas value rationality is seen only as being based on value-orientation.

The empirical analysis suggested that the ideal types are only subordinate to the dimensionality of rationality. This is because one dimension can always have two different ends, but the variation from only one end is necessary to know. However, a method applying the titles of the combinations of the parts of the dimensional space as the ideal types seems to better fit the context of sociological tradition.

If the naming strategy used by Weber in the case of instrumental rationality – the combination of two aspects of rationality, outcome-orientation and means-orientation, under the same title – is followed, each ideal type is considered as consisting of two dimensions of rational behaviour. Furthermore, if both ends of the dimensions are assumed to be included in the different ideal types, one necessarily ends up with an even number of ideal types of rationality. One may now ask whether it is impossible to have an odd number of ideal types of rationality with the current method of analysis, and if this is the case, whether the result is only a side effect of the method used? However, one should remember that ideal types were in principle understood as abstract pure types from which action can deviate with a greater or lesser extent. In order to estimate one dimension of rational action one only needs to know the criteria according to which action derives towards the other end. The situation would have been different if the analysis would have suggested that rational action has three dimensions that equal the assumed three rationality types. Even in that case, one would have been forced to ask what the opposite ends of the di-

mensions are. However, it is worth underlining, that the ideality of the extracted dimensions is in a sense more important than the ideality of the types of action.

The results apply to the theoretical assumptions made in the previous chapter quite well. In Weber's original text, the ideal type of instrumental rationality was considered as a combination of means- and outcome-oriented behaviour, whereas within value-orientation, the ideal type was assumed to be based on a singular principle (Weber [1920]1978, 24-26; see also Heiskala 1997, 46-55). The ideal type of value rationality was restricted here to refer only to value- and outcome-oriented action. Just as well as the ideal type of risk rationality can be presented as the combination of means- and risk-orientation, also axiological rationality can be considered as its own ideal type, covering value-orientation without the outcome-expectations.

The irrationality of behaviour also now receives a more detailed interpretation. If irrationality is considered as the deviation from the ideal type according to the criteria of it, this means that according to instrumental rationality, axiological rationality would be as irrational behaviour as possible, and that value rationality as irrational as possible according to risk-rational behaviour. Irrationality is defined simply as a type of behaviour not based on the ideal type in question. Empirically, one could probably try to take irrationality into account by defining the areas close to origo on the dimensional space as the area of non-rational action. This, however, has no obvious analytic advantage, but then again possible empirical disadvantage as it limits the cases that can be considered rational in some manner in an unnecessary way.

It is also important to note that even these four ideal types do not extend rationality to cover routine, traditional or emotional behaviour, which all still remain outside the analysis of typical forms of rational action. This is a practical limitation of the theory, but also possibly its weakest point – it may be that certain social phenomena cannot be considered as a result of such meaningful action that the idea of rationality requires. One of the ways to get around that problem is to argue that there is always a possibility to rationalise ones' actions afterwards, which makes this deficiency less important. On the other hand, it may also be argued that routinesation, traditionality and emotional behaviour may be considered as consisting additional dimensions to action, which in that case can in fact vary independently of the variation of the action on the rational dimensions of it. Whether this is the case cannot be tested here at the moment, but would require a dataset that could take those aspects of behaviour also into account.

How can these results help social scientists overcome the individual-social dilemma? Rationality can be understood as depending on individual decisions and individual, subjective interpretations of them. However, the interpretation

is nevertheless always a collective-dependent feature, which can be seen in the fact that a systematic, two-dimensional pattern of rationality can be found as an analytical property on the population level study of individual-level properties. This could not be done without accepting the principle of the fundamental interrelatedness of individual and collective phenomena. The ideal dimensions of rationality are only to be understood as a collective property, whereas the level of deviation from an ideal type can be understood as both individual as well as collective property. The dimensions could not be found unless one also has individual-level information.

In the following chapters, the measurement of rationality will be based on the results of Multi-Dimensional Scaling of *Finland 1999* -dataset carried out in this chapter. That is why a pragmatic conceptual distinction needs to be underlined between ideal dimensionality, orientation and ideal types of rational action. In the following, when rationality is referred to in general meaning, the question is about the two necessary ideal dimensions separated in empirical analysis. These will be referred to as means-to-value rationality (or -orientation) and risks-to-outcomes-rationality (or -orientation). The opposite ends of these dimensions are referred to as means – or value-orientation, or risk (-awareness, -sensitiveness)- or outcome-orientation of rational behaviour. The ideal types will refer to each of the four possible combinations of rationality dimensions. The combination of means- and outcome-orientation is the ideal type of instrumental rationality, the combination of outcome- and value-orientation is the ideal type of value rationality, the combination of means- and risk-orientation is the ideal type of risk rationality, and finally, the combination of value-orientation and risk-orientation is called the ideal type of axiological rationality.

Although the analysis in this part of the thesis supports the idea that the assumed dimensions of rationality can be derived from both theory and data, the advantages of applying this kind of RAT are not yet tested. In order to argue that RAT can indeed help sociology to recover from its crisis, this has to be applied successfully in the explanation of social phenomena. In the next and final part of the thesis, the assumption about the advantages of applying these rationality-angles will be analysed more explicitly.

***PART III******THE CURE FOR THE FALLACIES***



## 7 CAUSES OF RATIONALITY AND JUSTIFICATION OF AD HOC EXPLANATIONS

### 7.1 The explanations and the applications

This third part of the thesis will target the analysis of the causes as well as the effects of rational action on other social phenomena. It has been suggested that a proper theory applying both the individual and collective properties of action would benefit the social sciences. And even more so; by providing a solution to overcome the fallacies of overindividualised and -socialised actor, it should be possible to overcome the argued crisis in sociology, following from the inability to combine these parts in the analysis of social phenomena. The benefits of this kind of theory can only be based on the successful application of such a theory. In Part II of this thesis a version of RAT that could cover these points of view was first constructed theoretically. Then its validity was tested empirically. Now the advantageousness of the proposed version of RAT will be tested in a more thorough manner.

Based on the theoretical and empirical analysis of Part II, it can be argued that rationality should be considered possible to have multiple forms – the ideal dimensions or ideal types – that can, if the researcher is provided with a proper dataset, also be measured empirically. The optimal solution according to the analysis of the *Finland 1999* -dataset in the previous chapter, seemed to be the one in which two dimensions of rationality are separated. These dimensions are *means-to-values* and *risks-to-outcome* -orientation of rationality. The opposite ends of the dimension cannot, or at least do not, seem to coexist. However, the dimensions can have variation independently of each other. If the dimensions are dichotomised, they can be combined into four ideal types: instrumental rationality, which means that actions are primarily guided by means- and outcome-orientation; value rationality, which means that outcomes are derived from strong value principles; axiological rationality, which means that the outcomes of action are unimportant as long as the strong values of behaviour are followed; and risk rationality, which means that one wishes to act according to the best available means in order to get the desired outcome, but cannot be too strongly tied to the possible outcomes of action because of the uncertainty connected to actions.

In this chapter, the aim is two-fold: first, to describe the connection of rationality, as understood as a double-dimensional phenomenon, to typical social background variables, and second, to discuss more explicitly the problems followed from the assumption that RAT could be applied in an *ad hoc* manner in the explanation of social phenomena. Both of these tasks will be addressed by dividing the discovered dimensions of rationality into the four ideal types described above. These ideal types are operationalised using the results of the MDS analysis of the previous chapter. The connection of socio-economic background variables to these ideal types of rationality is then analysed with multinomial logistic regression.

However, before going into analysis, the connection of *ad hoc* usage of rational explanation and the connection of ideal types of rationality and social background variables needs to be discussed further.

## 7.2 Ad hoc and background variables

The problem of the *ad hoc* usage of rationality theories has already been discussed at some length in Chapters 2 and 5 in relation to the typical fallacies of overindividualised and -socialised concept of action, as well as to the assumptions made in rationality theories. In these theories, “*ad hoc*” usually refers to a situation in which action varies according to a single or few characteristics of social action without concerning the level of generalisability or the explanatory power of these principles in reality. A usual example from this kind of assumption is the principle to apply economic utility as the main criteria of human action in the thin versions of rationality theories. For example, Opp (1998) has pointed out the ways how rationality theorists often manage to apply the theory without any measures of rationality (see previous chapter).

*Ad hoc* -application of any theory is of course a bad custom in a scientific enterprise. In practice, however, a situation in which a theory could be applied in that kind of manner without a high risk of applying a fallacious explanation would be highly advantageous, at least research economically. Currently many of the available large-scale datasets do not include proper information revealing preference structure for the evaluation of the rationality of action in a manner that was performed in previous chapter. If the *ad hoc* -way of application were possible, it would mean that already available datasets consisting of only the typical set of social-economic (structural) background variables, and not having explicit variables in order to measure variation of rationality, would be sufficient in order to apply a rationality theory. For example, Goldthorpe has argued that this is one of the main reasons for applying RAT in the studies

applying large-scale datasets (see Goldthorpe 1996). In order to accept this kind of usage of rationality theories, it should be possible to show that the connection between rationality and the typical background variables is such that the type of rational action or the criteria of it can easily be derived back to background variables. Basically this would mean that if one knows how the most general principles of social action are connected to different social-economic positions, it should also be easy to use these positions in order to estimate the rationality type of action.

This is the case, for example, with certain very general level theories that are applied in everyday life. Consider, for example, the law of gravitation – the principles of this law are applied in everyday life all the time, although hardly anyone even notices the theory explicitly while applying it. However, if needed, this could be done without measuring the gravitation itself on most occasions. For example, it is easy to explain that when throwing a ball it can be known that gravity will eventually force it to land without being in a risk of performing fallacious generalisation.

Of course, in order to accept an *ad hoc*-application of rationality theory, even in completely known conditions, it is required that it can be shown that rationality has a relatively stable socio-demographic basis. The law of gravitation has a stable core, because one can trust its explanatory power to be, in practice, as anticipated in all occasions of normal life on earth. The principles of rationality theories cannot be as strong as the laws of nature. In the case of rationality, it is also required that one is ready to accept the almost probabilistic basis of these assumptions – one is likely counter cases and situations in which rationality theories do not seem to apply, although in general these theories would be supported.

Is an *ad hoc* application possible with the theory of rationality of action that was proposed in Part II? This question can be studied when the connection of the typical background variables to the types of rationality is analysed. The problem leads to the following hypotheses concerning the relationship of the topics:

**Hypothesis A:** *By knowing a combination of social background variables, one is very likely to be able to deduce the most typical ideal type of rational behaviour applied. Most of the variance between the types can be explained with background variables.*

**Hypothesis B:** *Most of the explainable variation between the ideal types that can be predicted with typical background variables can be explained by the difference between instrumental rationality and other ideal types. The three other ideal types cannot be separated from each other with the typical set of background variables, but are dependent on more particularistic explanations. This makes also the assumption*

*about economic utilitarian action as a justifiable general principle of social behaviour.*

If either of the two first hypotheses were supported by empirical analysis, this would justify *ad hoc* application of rational action theory. The second hypothesis is actually relevant only if the first one is supported. If the latter hypothesis turned out to be supported by the analysis, one could also argue that despite the results of the previous chapter that indicated that rationality should be understood as a dual-dimensional phenomenon, as a social scientific phenomenon rationality could be safely simplified as concerning only a single ideal type of rationality and how much action deviates from it. The dual-dimensional character could be argued to be an extra social scientific phenomenon, for example, because of some individual psychological characteristics that are not the primary interest of sociology (see Goldthorpe 1996).

Also, two additional hypotheses can be constructed concerning the analytic relationship of the ideal types and the background variables:

**Hypothesis C:** *Various background variables have significant effect on the variation between the ideal types, but although the effects compound when modelled together, they do not interact.*

**Hypothesis D:** *Various background variables have significant effect on the variation between the ideal types, but the effects are always equal between two of the ideal types in a way that actually the dimensions are only needed to be separated from each other in order to outline the variation, not the ideal types as combinations of them.*

Hypotheses C & D are not a necessary connection for making the *ad hoc* assumptions, but merely help one to justify previous theoretical assumptions. Also, they can both apply at the same time. However, if Hypothesis C were supported when also the previous Hypothesis A applied, it would justify *ad hoc* usage even when only a limited amount of background variables are known. The latter hypothesis is in a more obvious connection to the selected research setting. If Hypothesis D were supported, the result would suggest that the assumption about the ideal types does not improve understanding of rational behaviour. For example, it may turn out that value rationality and axiological rationality have similar parameters and instrumental and risk rationality also similar, which would indicate that only the variation on the means-to-values dimension of rationality is effected by the background variable in question. Thus, despite the familiarity to sociologists, the application of the ideal types would not guarantee any empirical advantages.

Finally, a fifth hypothesis can be presented:

**Hypothesis E:** *Ideal types do not have connections to the typical background variables.*

This hypothesis can also be considered as a “zero-hypothesis”. If Hypothesis E were supported, that would suggest that the whole task of finding an empirical application for RAT would have been unsuccessful. One could argue that the tested version of rationality theories with the current operationalisation has only a limited importance for the social sciences, because it is not in connection with the typical distinctions it should apply to.

### 7.3 The analysis of the connection of background variables to ideal types

The results of multidimensional scaling of the attitude variables of *Finland 1999* -dataset from the previous chapter will be used in the operationalisation of the ideal types. Very often background variables are simply included in the MDS analysis itself. Then it is observed how the dimensionality of the data changes because of the extra variables included. Now MDS is used similarly to how the results of factor analysis could be applied – by creating the scales that can be applied to the analysis of ideal types. The variable level scale coordinates are brought back to the individual-level data by using them as the weightings when the original RAT-variables are aggregated. For example, in the case of means-to-values -dimension, an individual-level scale position is aggregated simply by multiplying the individual answer, varying from 1 to 5, with the matching scale coordinate and then by summing up all of the weight-multiplied answers of one individual answerer from all nineteen rationality variables together. In this way, all of the variables can be used in the construction of both scales, thus a minimum loss of important information is accomplished without the fear of risking scale validity<sup>59</sup>.

The aggregated scales are then split into two groups having an equal number of cases that can be understood as referring to the probability of different types of orientation of action: the groups being likely to be means- or value-oriented and the groups being likely to be risk- or outcome-oriented. After that the groups are combined into the four groups of persons being likely to act according to the ideal types of rational action according to the combinations that were explained at the beginning of this chapter. In this way, one gets an empirical application of theoretical ideal types. Although the ideal type is in prin-

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<sup>59</sup>Similar scales have previously been constructed simply by aggregating the ordinal variables that, according to principal component analysis, get high loadings in the same component (see Erola 2001). In that kind of solution there is, however, always the problem of how much information is actually missed. Here the similar method was tested by aggregating the nine strongest variables according to their absolute values in both dimensions. The follow up is that due to the robustness of this method, the dimensionality of the data is simplified as one-dimensional, which can be considered as an empirical but also analytical setback. (For scatter-plots see Appendix D.)

principle a theoretical concept, from here on, the term will also be used simply in order to refer to the empirically operationalised groupings of persons likely to act according to them. Also, because the ideal types are basically all of the possible combinations of the dichotomised ideal dimensions of rationality, the results can be interpreted referring to the connections of dimensions of rationality and the background variables if needed.<sup>60</sup>

The background variables that will be tested are the same that were presented previously in Chapter 4 and applied in the analysis of the explanations of overindebtedness. In addition to those variables, gender and a variable for the place of residence in an urban or rural environment, is included. Thus, there will be 11 background variables to be considered. Just like in Chapter 4, the analysis begins with univariate tests of the connection of ideal types and each background variable. The ideal type to which other types are compared to is instrumental rationality.

Table 14 shows the univariate likelihood ratio tests for each considered background variable. All of the background variables except *Unemployment of spouse* have statistically significant connections to ideal types. The impact of gender is insignificant on the usual level of 0.05, but it will nevertheless be kept along with the analysis. Already Table 14 shows that Hypothesis E is not supported – rationality varies according to background variables.

The parameters for the univariate tests are skipped here. For those who are interested they are reported in Appendix E. Instead a multivariate test including all of the significant background variables from the univariate tests is presented in Table 15. *Model G* refers again to the model fit change if compared to the likelihood ratio of independence of the ideal types and background variables (the model including only constant). Although the G-value is used as primary criteria of the model fit here, like in Chapter 4, *Pearson's Chi<sup>2</sup>* and *Nagelkerke Pseudo R<sup>2</sup>* are also presented in the table in order to estimate the model fit. The *G-value* is assumed to have a statistical significance under 0.05 if the model fits, but in the case of *Pearson Chi<sup>2</sup>*, the fit statistic should be interpreted in the opposite direction – the fitting model should have a value of over 0.05. *Pseudo R<sup>2</sup>* can be interpreted in a similar way, referring roughly to the overall amount of variation the model is able to cover.

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<sup>60</sup> Also, another solution was tested. In that case the scales were split into three equal-sized groups and the opposite ends were combined as the ideal types similarly as above. The areas in the middle of the scales were combined in the same group of “non-rational” cases. Then the differences between the groups were tested with a similar model that will be considered as being “final” in this chapter. There was some significant growth in the differences between the parameters referring to rationality, but the model fit was about the same as in the final model here. This was because the standard errors also grew bigger when the rationality groups became smaller. If a clearly bigger dataset could be used this could nonetheless be an advantageous method to categorise rationality, or at least something that would be worth testing, because the contrasts between the ideal-typical groups would be greater.

Table 14. Explanations of rationality types. Univariate Likelihood Ratio tests for background variables in multinomial logistic regression. The test statistic G stands for the model -2 log likelihood change if the variable is excluded from the model, P for the statistical significance of the change.

<i>Effect</i>	<i>G</i>	<i>p</i>
<i>Amount of loans</i>	33.570	0.000
<i>Income</i>	33.957	0.000
<i>Marital Status</i>	43.367	0.000
<i>Children</i>	17.342	0.001
<i>Unemployment</i>	12.942	0.044
<i>Unemployment of Spouse</i>	2.410	0.878
<i>Age</i>	71.501	0.000
<i>Class position</i>	19.726	0.003
<i>Education</i>	17.22	0.001
<i>Gender</i>	7.484	0.058
<i>Place of residence</i>	22.224	0.000

Table 15. Explanations of rationality types. Multivariate Likelihood Ratio test for background variables in multinomial logistic regression. G-ratios for variables, their statistical significance, Model G, Pearson's goodness-of-fit, and Nagelkerke Pseudo R<sup>2</sup>.

<i>Effect</i>	<i>G</i>	<i>p</i>
<i>Amount of loans</i>	11.257	0.010
<i>Income</i>	14.807	0.002
<i>Marital Status</i>	21.127	0.049
<i>Children</i>	2.107	0.550
<i>Unemployment</i>	5.407	0.493
<i>Age</i>	28.628	0.004
<i>Class position</i>	13.136	0.041
<i>Education</i>	4.969	0.174
<i>Gender</i>	6.109	0.106
<i>Place of residence</i>	10.891	0.012
<i>Model G</i>	179.872	p = 0.000
<i>Pearson Chi<sup>2</sup></i>	5530.342	p = 0.240
<i>Nagelkerke Pseudo R<sup>2</sup></i>	0.096	
<i>N</i>	1906	

Although  $G$  and  $Chi^2$  both suggest that the model is as such well fitting,  $R$ -squared remains under 10%. This suggests that Hypothesis A cannot be considered to be supported – by knowing a typical set of background variables connected to the ideal types, one is able to predict only one tenth of the variation between the rationality types. The major part of the causes for the variance between the ideal types cannot be known if the combination of the background variables is known. Table 15 shows that there are significant differences in the probabilities of belonging to the different ideal type groups between the different background variables, excluding *number of children, unemployment, education and gender*. In principle, it may be that some of these variables still have significant effects through the interactions. The interactions will be analysed a little later.

Hypothesis B can be tested by repeating the multivariate test above however, by excluding the instrumental rationality from the analysis, and having value rationality as the reference group of the other two ideal types. If the variation from the ideal form of instrumentality would be sufficient requirement for the application of rationality in the social sciences, there should not be significant differences between the other types of rationality when instrumental rationality is excluded from the analysis. Table 16 shows the results for this analysis. It can be seen that only the effects of marital status and class become non-significant in addition to the already non-significant effects of the previous multivariate test, whereas, for example, the effect of gender becomes more significant. If the change in  $G$ -value is considered, it turns out that in fact the model fit seems improve, as the  $G$  is reduced by 35.489 with 18 degrees of freedom, suggesting a significant improvement in model fit. The *Nagelkerke  $R^2$*  is also slightly improved. However, *Pearson's  $Chi^2$*  -test suggests that fit is worse in this test if compared to the previous in which instrumentality was included, although the test is still statistically non-significant.

The results do not indicate clear-cut changes to the fit statistics between the models. The fact that the goodness-of-fit is worse in the latter model can simply be due to the dependent variable having now one less possible outcome. However, according to Hypothesis B, this model should not have been fitting at all, or at least the results should have been very different if compared to the previous analysis. Thereby Hypothesis B, about the usage of only one reference point of instrumental rationality, does not find support from the test.

Table 16. Explanations of the rationality types. Multivariate Likelihood Ratio test for background variables, when instrumentality is excluded. G-ratios for variables, their statistical significance, Model G, Pearson's goodness-of-fit, and Nagelkerke Pseudo  $R^2$ .

<i>Effect</i>	<i>G</i>	<i>p</i>
<i>Amount of loans</i>	5.997	0.050
<i>Income</i>	12.674	0.002
<i>Marital Status</i>	8.712	0.367
<i>Children</i>	2.165	0.339
<i>Unemployment</i>	3.489	0.480
<i>Age</i>	26.707	0.001
<i>Class position</i>	9.109	0.058
<i>Education</i>	4.879	0.087
<i>Gender</i>	6.689	0.035
<i>Place of residence</i>	11.399	0.003
<i>Model G</i>	144.38	P = 0.000
<i>Pearson Chi<sup>2</sup></i>	2800.75	P = 0.169
<i>Nagelkerke Pseudo R<sup>2</sup></i>	0.109	
<i>N</i>	1420	

Hypothesis D is to be considered next. In order to analyse whether the differences between the ideal types follow only the dimensional differences, a multivariate model with all of the ideal types included needs to be reconsidered. Table 17 shows the parameter estimates for all of the background variables that were found to have the significant connection to the ideal types of rationality. The results show that although the variables *Amount of loans* and *Income* are connected to the differences that occur only in the means-to-values dimension of rationality (the probability of both axiological- and value rationality becomes lower as the amount of loans or incomes grows in comparison to instrumental and risk rationality, which in turn cannot be separated according to the effects), in the rest of the cases the differences do not follow this pair-wise pattern. Thus, both dimensions seem to be needed, and Hypothesis D does not seem to acquire support of the analysis.

Table 17. Parameter estimates for the multivariate model of Table 16. Only parameters for statistically significant background variables are shown. Coefficient and its standard error, Odds and 95 % confidence interval for it.

		<i>Ideal types</i>	<i>Coeff.</i>	<i>Std. Error</i>	<i>Odds</i>	<i>CI</i>	
						<i>Lower</i>	<i>Upper</i>
<i>Amount of loans</i>	<i>Risk</i>		-0.021	0.039	0.979	0.907	1.057
	<i>Axiological</i>		-0.124	0.046	0.884	0.808	0.967
	<i>Value</i>		-0.11	0.046	0.896	0.82	0.98
<i>Income</i>	<i>Risk</i>		-0.003	0.145	0.997	0.75	1.326
	<i>Axiological</i>		-0.638	0.211	0.528	0.35	0.798
	<i>Value</i>		-0.479	0.203	0.619	0.416	0.922
<i>Marital status (ref. Married)</i>	<i>Single</i>	<i>Risk</i>	-0.06	0.21	0.942	0.624	1.423
		<i>Axiological</i>	-0.081	0.214	0.922	0.606	1.402
		<i>Value</i>	-0.328	0.224	0.72	0.464	1.117
	<i>Co-habitation</i>	<i>Risk</i>	0.451	0.202	1.57	1.056	2.335
		<i>Axiological</i>	0.391	0.209	1.479	0.982	2.227
		<i>Value</i>	0.181	0.216	1.198	0.785	1.828
	<i>Separ./ Div.</i>	<i>Risk</i>	0.705	0.28	2.025	1.171	3.502
		<i>Axiological</i>	0.09	0.301	1.094	0.606	1.973
		<i>Value</i>	0.447	0.281	1.563	0.901	2.711
<i>Widow</i>	<i>Risk</i>	-0.507	0.474	0.602	0.238	1.527	
	<i>Axiological</i>	-0.485	0.408	0.616	0.277	1.369	
	<i>Value</i>	-0.237	0.368	0.789	0.384	1.623	
<i>Age (ref. &gt; 62)</i>	<i>&gt; 62</i>	<i>Risk</i>	-0.779	0.322	0.459	0.244	0.863
		<i>Axiological</i>	-0.028	0.294	0.973	0.547	1.731
		<i>Value</i>	0.526	0.286	1.692	0.966	2.964
	<i>51-62</i>	<i>Risk</i>	-0.479	0.243	0.62	0.385	0.997
		<i>Axiological</i>	-0.169	0.246	0.844	0.521	1.368
		<i>Value</i>	0.119	0.25	1.127	0.69	1.838
	<i>41-50</i>	<i>Risk</i>	-0.351	0.22	0.704	0.457	1.084
		<i>Axiological</i>	-0.154	0.225	0.857	0.551	1.332
		<i>Value</i>	-0.13	0.235	0.878	0.554	1.393
	<i>31-40</i>	<i>Risk</i>	-0.088	0.206	0.916	0.611	1.373
		<i>Axiological</i>	-0.053	0.217	0.948	0.62	1.45
		<i>Value</i>	-0.116	0.23	0.891	0.568	1.398

(Table 17 continued)

		<i>Ideal types</i>	<i>Coeff.</i>	<i>Std. Error</i>	<i>Odds</i>	<i>CI</i>	
						<i>Lower</i>	<i>Upper</i>
<i>Class (ref. Working)</i>	<i>Service</i>	<i>Risk</i>	0.042	0.07	0.552	1.072	0.852
		<i>Axiological</i>	0.007	0.042	0.781	1.043	0.777
		<i>Value</i>	-0.322	0.152	0.725	0.538	0.976
	<i>Self-empl., farm.</i>	<i>Risk</i>	0.551	0.242	1.736	1.079	2.791
		<i>Axiological</i>	0.328	0.238	1.388	0.87	2.214
		<i>Value</i>	0.042	0.243	1.043	0.648	1.679
<i>Area (ref. Rural)</i>	<i>Urban</i>	<i>Risk</i>	0.32	0.172	1.377	0.984	1.929
		<i>Axiological</i>	-0.227	0.16	0.797	0.583	1.089
		<i>Value</i>	0.066	0.164	1.068	0.775	1.472

The parameters show that each time the amount of loans rises by 100,000 FIM (16,818.88 €), the probability to be value- or axiologically-rational becomes lower. The same rule applies to income, because when income rises by 10,000 FIM, means-orientation of action becomes more likely both in the forms of instrumental and risk rational types. This result partially explains why only instrumentality is often assumed in the analysis of economic phenomena – economic differences and thus also economic activity seem to be more clearly linked to means-orientation than to the other dimension of rationality. However, the results here suggest that while instrumental rationality would also assume outcome-orientation, the risk-rational type of action easily remains forgotten from utilitarian thinking. However, if one would be interested only in clearly economic phenomena, such as loans and income and their connection to rationality, taking only the means-to-values-orientation into account would probably be sufficient.

The connection of the ideal types to different marital statuses is quite complex. Being single refers only to a lower probability of value rationality, if compared to married persons. However, even in this case, the error of the estimate is so high that the difference is very modest. The cohabiting but not married persons seem to be more likely of risk-oriented than the married, as they have higher probability of both risk- and axiological-rationality. For the divorced or separated persons, instrumental action is the least likely ideal type of behaviour, whereas risk-orientation seems to be the most typical direction of behaviour. Even the probability of value rationality is higher than the probability of instrumentality. The widowed are less likely to be risk- or

axiologically-oriented than the married, although the differences just barely exceed the standard errors.

According to age, the effects are surprisingly linear. The probability of risk rationality becomes lower as people get older, although the difference is not yet significant between the youngest age group between 18-30 years old and the age group between 31-40 years old. The probabilities of axiological rationality do not seem to be dependent on age. The oldest age group over 62 years old is different from all of the younger age groups because of their stronger tendency to value-oriented behaviour.

Service class differs from working class – quite surprisingly – only because of the smaller probability of value-orientation. Contemporary discussion would probably consider the service class to be more likely, for example, value-conservative. However, it may be worth noticing that strong principles of value rationality may very well be due to any values, not only because of, for example, religious or ideological ones. For self-employed and farmers risk-orientation, like both in the forms of risk rationality and axiological rationality, is a more likely type of rationality than for the other two classes. The reason for this may be that risk-sensitiveness is “written into” the characteristics of entrepreneurial work. Also, as the class of farmers was still in the nineties probably the most clearly diminishing occupational social class (see Erola - Moision 2002), it may be argued that risk rationality refers to lack of the prospects of continuing in this kind of work.

Place of residence has an impact on city-dwellers as a higher probability of risk rationality than those living in rural areas. Axiological rationality is much more likely to occur in rural areas than in urban ones. It may be argued that in rural areas, insecurity is more likely to be compensated with value-oriented behaviour (such as in the form of adhering to religious values) than in cities, as there are no differences in value rationality if compared to instrumentality.

Finally, only Hypothesis C concerning the interactions between background variables needs to be considered. In order to test the hypothesis, a model with all of the significant interaction terms needs to be constructed. In order to do that, all two-way interactions are first tested separately with the multivariate model including all significant background variables from the multivariate model presented in Table 15. The model will include the effects of number of children, unemployment, education and gender.

Table 18 shows the significance of each interaction if added to the model including all one-way effects. Just like in Chapter 4, a relaxed significance limit of 0.2, suggested by Hosmer & Lemeshow (2000), is also used here. It turns out that there are 11 interaction terms that seem to be significant when this limit is used. Three of these are excluded from further analysis, as the number of zero-case cells is too high for the estimation of maximum

Table 18. Statistical significance of G-ratio for each tested interaction term when the term is included in the multivariate model individually.

<i>Likelihood Ratio Tests</i>	<i>Income</i>	<i>Marital Status</i>	<i>Children</i>	<i>Unemployment</i>	<i>Age</i>	<i>Class position</i>	<i>Education</i>	<i>Gender</i>	<i>Place of residence</i>
<i>Loans</i>	<b>0.180</b>	0.798	0.312	0.685	<b>0.164</b>	0.894	0.514	0.563	0.303
<i>Income</i>		<b>0.029</b>	0.990	0.925	<b>0.145</b>	<b>0.153</b>	<b>0.119</b>	0.274	<b>0.110</b>
<i>Marital Status</i>			0.734	0.559	0.394	0.747	0.514	<b>0.042</b>	<b>0.103</b>
<i>Children</i>				0.545	0.883	0.707	0.757	<b>0.193</b>	0.873
<i>Unemployment</i>					0.619	0.390	<b>0.066</b>	0.977	0.823
<i>Age</i>						0.387	0.821	0.702	0.590
<i>Class position</i>							0.966	0.614	0.683
<i>Education</i>								0.663	0.727
<i>Gender</i>									0.357
<i>Age*Income*loans</i>	<b>0.046</b>								

likelihood: *marital status* by *age*, *marital status* by *gender* and *unemployment* by *class*. The two-way interactions that are kept seem to suggest the possibility of one significant three-way interaction term between age, income and amount of loans. This term also turns out to be significant and is thus included in the model that is analysed further.

Next a combined model for the variables and their interaction effects is tested. The parameter estimates are shown in Table 19 under the columns of Model A.<sup>61</sup> The interaction term between number of children and gender fails to meet even the relaxed limit of 0.2 of significance. Because these variables were non-significant also in the multivariate test without interactions, the main effects can also be excluded from the final model. The second clearly non-significant interaction term is the one between income and education, which is also excluded from further analysis. The results of the test without these variables are presented in Table 19 in the columns under the heading Model B. This model can be considered as “final”, because it consists of the maximum amount of at least fairly significant interaction terms. One may nevertheless note that in this final model, also the interaction term between unemployment and education fails to meet the usual significance limit of  $p < 0.05$ .

Pseudo  $R^2$  for Model B is 14.9 per cent. If the  $R^2$ s from the original univariate tests are aggregated, the percentage would be 14.2. Thus, in the end, the multivariate model reaches the same level when interactions are taken into account, although some of the non-significant variables were excluded. It seems to be that the effects do not compound but they truly interact.

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<sup>61</sup>Note that SPSS NOMREG used here does not estimate Gs for the continuous variables included in the higher order interaction terms also, but seems to include the effects of the continuous variables in the G-value of the higher-order term. This, however, does not have an affect on the parameter estimates, which nonetheless can also be estimated for all of the main effects included in the model.

Table 19. Models including the main effects and interactions. Model A consists of all terms, Final Model B only statistically significant ones. G-ratios for variables, their statistical significance, Model G, Pearson's goodness-of-fit, and Nagelkerke Pseudo R<sup>2</sup>.

<i>Effect</i>	<i>Model A</i>		<i>Model B</i>	
	<i>G</i>	<i>p</i>	<i>G</i>	<i>p</i>
<i>Intercept</i>	A		a	
<i>Amount of loans</i>	A		a	
<i>Income</i>	A		a	
<i>Marital Status</i>	17.354	0.137	19.189	0.084
<i>Children</i>	A		b	
<i>Unemployment</i>	12.569	0.050	12.271	0.056
<i>Age</i>	8.106	0.777	9.230	0.683
<i>Class position</i>	14.613	0.023	15.883	0.014
<i>Education</i>	A		a	
<i>Gender</i>	2.077	0.557	b	
<i>Place of residence</i>	0.724	0.868	0.936	0.817
<i>Loans by income</i>	A		a	
<i>Marital status by In-</i> <i>come</i>	26.664	0.009	28.552	0.005
<i>Age by Income</i>	17.448	0.134	18.457	0.102
<i>Class by income</i>	11.720	0.069	13.021	0.043
<i>Education by Income</i>	0.802	0.849	b	
<i>Place by Income</i>	7.285	0.063	7.838	0.049
<i>Age by Loans</i>	16.596	0.165	16.302	0.178
<i>Gender by Child</i>	4.395	0.222	b	
<i>Unempl. by Educ.</i>	11.030	0.087	10.711	0.098
<i>Age by Loans by Inc.</i>	23.416	0.024	23.286	0.025
<i>Model G</i>	300.919	P= 0.000	290.766	P= 0.000
<i>Pearson's Chi<sup>2</sup></i>	5498.868	P= 0.137	5207.556	P= 0.124
<i>Nagelkerke Pseudo R<sup>2</sup></i>	0.156		0.149	
<i>N</i>	1904		1931	

*a* – G of the continuous variables included in the effects of interactions

*b* – excluded from the final model as non-significant

Table 20 presents the parameter estimates for the main effects and interaction terms from the combined multivariate-interaction model. The parameter estimates for the main effects are reported in Appendix F. Suffice to say that except for the higher probability of risk- and axiological-rational with higher income, lower probability of risk rationality among the singles and divorced/separated, lower probability of risk rationality among the service class, higher probability of risk rationality and lower probability of axiological rationality among the self-employed and farmers, the main effect parameter estimates can be sufficiently modelled with the interactions included in the model.

Table 20. Parameter Estimates for the interactions of the multivariate model with interaction terms. Coefficient and its standard error, Odds and 95 % confidence interval for it.

	<i>Ideal types</i>	<i>Coeff.</i>	<i>Std. Error</i>	<i>Odds</i>	<i>95% CI</i>	
					<i>Lower</i>	<i>Upper</i>
<i>Loans*Income<sup>a</sup></i>	<i>Risk</i>	-0.396	0.306	0.673	0.370	1.226
	<i>Axiological</i>	-0.769	0.410	0.464	0.207	1.036
	<i>Value</i>	-0.939	0.429	0.391	0.169	0.906
<i>Singles*Income<sup>a</sup></i>	<i>Risk</i>	-1.714	0.607	0.180	0.055	0.591
	<i>Axiological</i>	-1.278	0.608	0.279	0.085	0.917
	<i>Value</i>	-1.773	0.699	0.170	0.043	0.668
<i>Cohabitation*Income<sup>a</sup></i>	<i>Risk</i>	0.458	0.553	1.580	0.534	4.676
	<i>Axiological</i>	0.317	0.652	1.373	0.383	4.924
	<i>Value</i>	1.529	0.569	4.612	1.512	14.068
<i>Divorced/separated*Income<sup>a</sup></i>	<i>Risk</i>	-0.937	0.962	0.392	0.059	2.579
	<i>Axiological</i>	-0.312	1.050	0.732	0.093	5.737
	<i>Value</i>	-0.201	0.976	0.818	0.121	5.539
<i>Widowed*Income<sup>a</sup></i>	<i>Risk</i>	-1.833	1.582	0.160	0.007	3.550
	<i>Axiological</i>	-0.218	1.296	0.804	0.063	10.195
	<i>Value</i>	-1.085	1.188	0.338	0.033	3.467
<i>&gt;62*Income<sup>b</sup></i>	<i>Risk</i>	-0.271	1.052	0.762	0.097	5.997
	<i>Axiological</i>	-0.466	0.977	0.628	0.092	4.258
	<i>Value</i>	0.928	0.983	2.529	0.368	17.378
<i>51-62*Income<sup>b</sup></i>	<i>Risk</i>	-1.595	0.767	0.203	0.045	0.911
	<i>Axiological</i>	-1.568	0.768	0.209	0.046	0.939
	<i>Value</i>	-0.710	0.830	0.491	0.097	2.500
<i>41-50*Income<sup>b</sup></i>	<i>Risk</i>	-1.431	0.770	0.239	0.053	1.083
	<i>Axiological</i>	-1.811	0.829	0.163	0.032	0.830
	<i>Value</i>	-0.807	0.846	0.446	0.085	2.344
<i>31-40*Income<sup>b</sup></i>	<i>Risk</i>	-0.415	0.836	0.660	0.128	3.395
	<i>Axiological</i>	-0.845	0.879	0.429	0.077	2.404
	<i>Value</i>	-1.518	0.967	0.219	0.033	1.460
<i>Service*Income<sup>c</sup></i>	<i>Risk</i>	-1.581	0.471	0.206	0.082	0.518
	<i>Axiological</i>	-0.735	0.458	0.479	0.195	1.177
	<i>Value</i>	-0.955	0.464	0.385	0.155	0.955
<i>Self-employed, farmers*Income<sup>c</sup></i>	<i>Risk</i>	-1.459	0.680	0.232	0.061	0.881
	<i>Axiological</i>	-1.159	0.703	0.314	0.079	1.244
	<i>Value</i>	-1.032	0.679	0.356	0.094	1.347
<i>Urban*Income<sup>d</sup></i>	<i>Risk</i>	0.145	0.506	1.156	0.429	3.118
	<i>Axiological</i>	-1.063	0.436	0.345	0.147	0.812
	<i>Value</i>	-0.309	0.471	0.734	0.292	1.847

*Ref. groups:* <sup>a</sup> *Married\*Income*, <sup>b</sup> *18-30\*Income*, <sup>c</sup> *Working\*Income*,  
<sup>d</sup> *Rural\*income*

(Table 20 continued)

	<i>Ideal types</i>	<i>Coeff.</i>	<i>Std. Error</i>	<i>Odds</i>	<i>95% CI</i>	
					<i>Lower</i>	<i>Upper</i>
<i>&gt;62*Loans<sup>e</sup></i>	<i>Risk</i>	2.108	1.148	8.231	0.868	78.104
	<i>Axiological</i>	0.529	0.864	1.697	0.312	9.223
	<i>Value</i>	1.495	1.051	4.459	0.568	35.012
<i>51-62*Loans<sup>e</sup></i>	<i>Risk</i>	-0.370	0.292	0.691	0.390	1.224
	<i>Axiological</i>	-0.540	0.344	0.583	0.297	1.142
	<i>Value</i>	-0.629	0.377	0.533	0.255	1.116
<i>41-50*Loans<sup>e</sup></i>	<i>Risk</i>	-0.335	0.257	0.715	0.432	1.184
	<i>Axiological</i>	-0.461	0.284	0.631	0.362	1.101
	<i>Value</i>	-0.345	0.271	0.708	0.417	1.204
<i>31-40*Loans<sup>e</sup></i>	<i>Risk</i>	-0.362	0.212	0.697	0.459	1.056
	<i>Axiological</i>	-0.293	0.228	0.746	0.477	1.166
	<i>Value</i>	-0.340	0.227	0.712	0.456	1.111
<i>Not unemployed *Education<sup>f</sup></i>	<i>Risk</i>	0.170	0.500	1.185	0.445	3.156
	<i>Axiological</i>	0.296	0.450	1.345	0.557	3.247
	<i>Value</i>	-0.759	0.487	0.468	0.180	1.216
<i>Has been unemployed *Education<sup>f</sup></i>	<i>Risk</i>	-0.023	0.637	0.977	0.280	3.405
	<i>Axiological</i>	0.359	0.586	1.431	0.454	4.516
	<i>Value</i>	-0.030	0.644	0.970	0.275	3.425
<i>&gt;62*Loans*Income<sup>g</sup></i>	<i>Risk</i>	-9.468	6.659	0.000	0.000	35.988
	<i>Axiological</i>	0.137	0.869	1.147	0.209	6.303
	<i>Value</i>	-1.944	1.661	0.143	0.006	3.713
<i>51-62*Loans*Income<sup>g</sup></i>	<i>Risk</i>	0.664	0.404	1.943	0.880	4.291
	<i>Axiological</i>	0.996	0.565	2.708	0.894	8.202
	<i>Value</i>	0.660	0.657	1.935	0.534	7.015
<i>41-50*Loans*Income<sup>g</sup></i>	<i>Risk</i>	0.464	0.427	1.590	0.689	3.670
	<i>Axiological</i>	1.025	0.529	2.788	0.989	7.856
	<i>Value</i>	0.874	0.534	2.395	0.841	6.818
<i>31-40*Loans*Income<sup>g</sup></i>	<i>Risk</i>	0.458	0.368	1.580	0.768	3.253
	<i>Axiological</i>	0.813	0.469	2.255	0.900	5.652
	<i>Value</i>	1.070	0.484	2.916	1.129	7.533

*Ref. groups:* <sup>e</sup> 18-30\*Loans, <sup>f</sup> Currently unemployed\*Education,

<sup>g</sup> 18-30\*Loans\*Income

It can be seen from Table 20 that the interaction terms between loans and income shows the differences exceeding the errors in the case of value-orientation, although the interaction term is also included in the higher-order interaction term between age, loans and incomes. The same applies also to the interaction term of 51-62 years old and income, which shows higher probability of risk rationality, and 41-50 years old, which shows higher probability of risk rationality when the income rises, if compared to the probability of instrumental rationality.

Only the interaction term between unemployment and education does not have the effect of income included in it, but as it was noted, it does not even meet the usual limit of statistical significance. Thus, the impact of income level to social action seems to be connected to various types of social phenomena.

For singles, the higher level of income refers to a higher probability of instrumental rationality if compared to the married. It can be remembered from the one-way effect only -model, that the differences between married and singles were only to be found in the probability of value-orientation. The differences seem to increase when the effect of income is included. In the case of cohabitation, higher income refers to a higher probability of value rationality. For the widowed, higher income refers to a lower probability of risk rationality than in the case of the married. There is, however, high variation in this connection. Only in the case of the divorced does there not seem to be significant interaction effects related to income – the effect of income to rationality is similar in the group of the divorced than it is in the group of the married.

In the case of class position, it seems to be that the probability of instrumentality rises when income becomes higher in two other groups excluding the working class. For persons living in urban areas, higher income refers only to a lower probability of axiological rationality.

When educational level becomes higher, the probability of value-orientation becomes lower in the groups of persons who have never been unemployed. This effect can be considered as fairly modest, because the level of standard error is fairly high if compared to the coefficient.

Raising the level of both income and debts lowers the probability of both risk rationality and value-orientation in the oldest age group if compared to the youngest. Otherwise, it seems to be that increasing income AND amount of debt refers to a *higher* probability of instrumental rationality in the youngest age group than in other groups.

A careful general level interpretation from the interaction terms is that increasing income may make the differences otherwise observed between the social groups smaller in a way that can be seen as an increase in the probability

of instrumental rationality. It seems to be that the differences in the ideal type of rationality applied are thereby greater when income level is lower.

Thus, whereas the economic variables, income and loans, alone simply refer to stronger probability of means-orientation, the stronger probability of instrumental rationality as a combination of means- and outcome-orientation is connected to the interaction of economic variables and other social background variables.

#### 7.4 From an outcome to a cause

The analysis above shows that none of the proposed hypotheses seemed to be supported. Although the ideal types of rationality had a connection to various background variables, it cannot be assumed that by knowing these variables one would easily be able to predict the ideal type one is likely to apply in social action. Nor is this the case in a social context; the amount of variation explained is so low that an *ad hoc* prediction based on social position within the typical social groups would be fairly unreliable. This is not a surprising result, but was actually likely to be found – the *ad hoc* assumptions should always be considered as suspicious, especially in the social sciences, where the “laws” are weak if compared to, for example, physical science and always prone to dynamic changes in time. Rationality theories should not be considered as exceptions from other theories.

Although the economy-related variables seemed to be connected to means-orientation, it cannot be concluded that assuming only one ideal dimension is sufficient for the analysis of rational behaviour. On the contrary, the interaction effects showed that, in many cases, economic variables are very crucial in order to explain the probability of application of other ideal types also. It seems to be that the differences between social groups should be expected to diminish when the income level gets higher, because the probability of instrumental rationality – a combination of means- and outcome-orientation – becomes greater. Thereby, although the ideal types of rationality are only subordinate to ideal dimensions of rationality, in some occasions it is advantageous to consider that the differences between the ideal types make it possible to have more detailed descriptive interpretation of the connection of rationality and the background variables.

The results suggest that *ad hoc* usage of rational explanation is not on many occasions justified, although this often seems to be the only possibility because there are no standardised ways to test or include rationality in empirical models. Especially the connection of rationality and economic variables turned out to be more complex than it is often assumed. For example, one may won-

der whether instrumentality, often assumed to be typical to economic utilitarianism, is actually an outcome of social well-being, rather than a premise of it. On the other hand, there were quite many connections that would not have been observed unless the multiple ideal types were not applied.

In any case, the application of RAT seems to need quite detailed hypotheses and also explicit testing of these hypotheses in order to maintain its validity. In the end, this is not really surprising, given the dynamic character of the social regularities proposed as theories. In the next chapter this kind of more explicit testing and application of the theory is tried with the operationalisation of rationality dimensions that was applied also in this chapter. Thus, the focus will change from the *causes* of rationality to the *effects* of it.

## 8 APPLYING RATIONALITIES TO EXPLAIN SOCIAL PHENOMENA

### 8.1 Rationality as an explanation

In the analysis made in the previous chapter it was discovered that a rather typical set of social background variables explained only a fairly limited amount of the variation of rationality variables. It seems to be that on many occasions the promoters of rational action or choice assume that rationality should have a strong connection to typical background variables, which should also make it possible to apply rationality theories in an *ad hoc* manner in the studies that do not contain any explicit information about preference structure. At least the proponents of the *thin* utilitarian version of RCT, according to which the motives of action can be reduced to the utilities gained by the individual actor, seem to support this kind of idea. However, when analysed empirically, the assumption about that kind of a strong connection failed to gain support.

The main aim of this thesis has been to find a way to apply rational action theory in the social sciences in order to make them more realistic or accurate. If it was found to be possible, one should have better chances to solve the “crisis” in sociology. After seeing the results from the previous chapter, a sceptical critic could try to argue that the small amount of variation discovered proves that this kind of task is not possible or at least that the current attempt has not been successful. Luckily, one can easily argue against this kind of scepticism. It is not the same to test if social background variables have an ability to explain the variation of rationality, as it is to use rationality as the explanation of the variation of them. Empirically considering, simply the fact that there is no longitudinal data tracking down the possible experiences affecting the rationality of action, but only a cross-sectional snapshot of the current position within social structures according to certain measures, may explain the empirical results in the previous chapter. It could be argued (like Popper [1935]2003, 45) that theoretical statements can never be deduced from

the absolute number of empirical observations, and that it is thus impossible to justify a theory fully on the basis of empirical observations.<sup>62</sup>

In this and the following chapters the interest does not lay so much in finding out what the causes of rational action are, but inasmuch one can argue that rational action itself is possible to be a cause. The actual benefits of applying the proposed rationality theory with empirical content in the explanation of social phenomena will be tested while studying the social phenomena explicitly connected to rationality theories or other incentive- and motivation-related theories. The following issues will be analysed:

- Rationality in relation to overindebtedness
- The micro-base of social mobility
- Rational decisions of having children
- Economic incentives and disincentives to work

In this chapter, only the first topic will be analysed, and the three other examples will be analysed in the following chapter. Overindebtedness is studied first because it is possible to compare the results of this analysis to the results of Chapter 4.

One of the original reasons why the improvement of RAT was felt to be an important task for the social sciences was the enthusiasm towards how RAT could solve the problem of integrating individual- and social-level explanations within the same explanatory model. The dilemma was argued to lead not only to the fallacies of the oversocialised actor, but also to similar fallacies of the overindividualised actor. In Chapter 4, individual- and social-levels were integrated to a same model simply by the conventional way of elaboration, by including individual-level factors referring to some types of voluntary actions in the model already including structural effects. The operationalisation of the individual-level explanations used in Chapter 4 was based on a rather intuitive empirical application without a strong theoretical background. It also had a more direct connection to overindebtedness and a lower level of abstraction than the application of the individual-level causes that will be applied here. The results from the analysis of individual-level causes when applying operationalisation on a more abstract level may now be compared to the previous results. It should be expected that if the application is valid, the results should not differ too strongly.

Before going into the analysis of these topics, the actual method of applying rationality angles as explanatory tools is explained in detail.

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<sup>62</sup>It is worth noticing that Popper's demand is solely made in the context of the argument that hypotheses and theories can never be proven to be right, but only falsified.

## 8.2 Bridging the theories with rational action

In the previous chapter it was argued that, according to the results of empirical analysis at least, the proposed version of RAT cannot be applied very sufficiently in an *ad hoc* -manner. Rather it was argued that the application of RAT needs explicit hypotheses as well as the testing of these hypotheses in order to guarantee the explanatory mechanisms assumed. How should this be done, then?

The need for empirical content is well acknowledged in the field of RCT, although the need is not necessarily agreed upon (see Hechter 1994; Kelle - Lüdemann 1998; Cox 1999). This is why some rational choice theorists emphasise the importance of so-called *bridge hypotheses* in order to make the theory actually work as an explanation (Esser 1998). These bridge hypotheses do not need to be based on RCT itself, but on other theories. For example, personal utilities may explain individual action, if it can be assumed that these utilities can be gained in a given situation, for example, by following certain values (as in normative theories of action) or following a certain pattern of behaviour (as in role-based theories of human behaviour). With the help of bridge-hypotheses, rationality itself does not need to vary, only the processes involved in the bridge hypothesis. In this way, even the most limited versions of rational choice theories are assumed to reach the four criteria of Hempel's and Oppenheim's *deductive-nomological explanation*: the *explanandum* logically derived from the *explanans*, the *explanans* containing at least one law, the *explanans* with empirical content and the *explanans* that is also true. (Kelle - Lüdemann 1998; see also Hedström - Swedberg 1996.)

There is a risk of making *ad hoc* assumptions again when the bridge hypotheses are involved. How can it be known that the bridge hypothesis has the connection to rationality that it has been assumed to have? However, if rational action itself was allowed to have variation, for example, according to the ideal dimensions or between the ideal types, and if the pattern of variation was also verified empirically, the additional bridge hypotheses outside the theory are neither needed nor necessary. The general law-like assumption applied in RAT can, for example, simply be that human action in general tends to be meaningfully rational, like it has been assumed here (see Chapter 5). The empirical content – the pattern of the variation of meaningfulness (=rationality, see Chapter 5 on Weber's theory about rational action) measured with MDS in Chapter 6 and operationalised as the rationality variables in Chapter 7 – is connected to this principle directly. What is gained is a more simple explanation, although the theory allows more internal heterogeneity - and thereby more complexity - than, for example, the thin versions of RCT. (See Hechter 1998; also Boudon 2001b.)

Because of the general character of the core hypothesis, combined at the same time with the empirically-specific content of its variation in the bridge hypotheses, this kind of RAT can be used in the verification of the theoretical statements on a lower level of abstraction. The lower level theoretical statements may contain explicit arguments about the connections of the type of individual social behaviour, structures and mechanisms. In sociology these types of theoretical statements are often referred to as “*the theories in the middle*” or “*middle-range theories*” (see Lazarsfeld 1962; Merton 1968, 50-53) Often these statements do not seem to have very obvious common grounds and could easily seem to be impossible to be tested against each other.

Consider, for example, the motives of working – they may also contain high valuation of work-orientation in general as well as the assumption about working as an efficient way of getting money. Both of these motives may be very differently connected to the actual structural differences related to work, such as age, education or level of unemployment. Now the test can be done, because the dimensions of rationality are considered as the bridge hypotheses combining different theories about these motives to the most general level theoretical principle – the meaningfulness of action. Thus, bridging is not meant to refer to creating a network of lower level theoretical statements, like Merton suggested in the case of the application of the theories in the middle. On the contrary, it refers to that the highest level theoretical statement of meaningfulness is bridged with statements about the variation of rationality to the lowest level of theoretical statements about work.

The lowest level theoretical statements applied in the following parts of the chapter are surprisingly similar in content, although the social phenomena themselves are fairly distinct. Most of the phenomena include a version of the explanation considering some crucial group of social actors to more likely be instrumentally-rational than some other groups. Sometimes the type of instrumentality is restricted further to only egoistically utilitarian behaviour. Similarly some actors are assumed to be risk-aware according to some versions of the explanations and others, for example, value-oriented actors because of the cultural determination of certain values. All of these types of explanations can rather easily be connected to each other by the proposed version of RAT.

If Karl Popper’s terms are used, the core hypothesis about meaningfulness can be understood as a *strictly universal statement*. It is the highest level abstract theoretical statement that cannot really be proved as being always correct, although it is more or less intuitively acceptable. The core hypothesis about subjectively meaningful action can also be considered as an *axiom* that belongs to the highest level of the theoretical system of rational behaviour. The *bridge hypotheses* about the ideal dimensions of rationality and their combinations as ideal types of rationality can be understood as *numerically universal*

*statements*. This is because they have *relational* content concerning each other. It can be assumed that if the characteristics of rationality of all of the actors in the world were known, the relation of the ideal dimensions (and the ideal types) could be defined. The ideal dimensions can be understood as being the next lower level theoretical statements derived from the main axiom, and thereby themselves as hypotheses concerning the axiom itself. The lowest level of theories, basically possible to be presented as concerning instrumental, risk-aware or value-rational groups of actors in relation to the studied phenomenon, should be considered as *singular statements*. They are hypotheses about how the bridge hypotheses (the hypotheses applying the ideal dimensions or types of rationality) should be seen in connection to the empirical findings. They are not theoretical in a strong sense, but merely predictions concerning theoretical statements and the conditions they are assumed to be applicable to. (See Popper [1935]2003, 38-42, 50-56.)

Some may consider that this kind of way of application of the different levels of theories is in contradiction with Merton's early demand for sociologists to rely solely on the theories of the middle rather than trying to propose a complete and overall social theory. Merton's demand was a result of the low level of development of both sociological theories and methodological tools. Merton himself refers to this by arguing that the main reason to prefer the theories in the middle over the total systems of theories is that "*(w)e are not ready. Not enough preparatory work has been done*" (Merton 1968, 45).

It seems to be that the way the levels of abstraction in different theoretical statements are separated here is quite far from being a *total system* of sociology that Merton was so afraid of. (See Merton 1968, 39-72.) On the contrary, the idea of a theory and about the different levels of it that is applied here can quite clearly be understood in relation to Popper's view of theories as something that can never be known in their entire complexity and as something that cannot be presented as a finite number of singular statements (see Popper [1935]2003, 40-42). A model of applying theories in which lower level theoretical statements are combined with the axiological statement(s) with bridge hypotheses is intuitively very close to the idea about the "networks" of middle-range theories Merton is suggesting to build. On the other hand, adopting the Popperian view about theories means the refutation of applying *only* the middle-range theories in sociological research. This is because middle-range theories lack the appropriate hierarchy of theoretical statements that the Popperian way requires and what indeed any scientific endeavour requires.<sup>63</sup>

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<sup>63</sup>If analysed in contrast to Popper's ideas, Merton actually seems to fall in the pitfall of historicism. According to Popper, this is the case if the regularities of history are tried to be interpreted as the laws of it (Popper [1944]1957).

### 8.3 Some methodological notes

In order to test the theories, the pattern of the variation of rationality needs to be derived from data and be constructed as variables. This is what was already done in Chapter 7. Now these dichotomised rationality variables, means-to-values rationality and risks-to-outcome rationality, can be used as the bridge hypothesis for testing the social phenomena listed at the beginning of this chapter.

All of the phenomena in this and in the following chapter will be analysed by applying loglinear models. First, the overall character of the association of the variables is studied with the usual examination of frequency tables. This is extended to an overall estimation of the odds of being rational in a certain way if compared to the other rationality types in each combination of social background variables. The theoretical hypotheses concerning the connections of the concerned variables are then tested with topological loglinear models. These models make it possible to test the connections of the variables in a very specific manner (see Appendix A; also Breen - Goldthorpe 2001) by applying design-matrices in order to analyse the cell-specific connections of the variables. Testing the association between the variables with these models has become a standard of loglinear modelling in the social sciences. Although the models can be tested in a more detailed manner in this way, it needs to be mentioned that in fact topological modelling always involves simplification of the parametrisation, which can sometimes also hide some significant effects. One needs to be careful in order not to hide the effects that could be relevant in relation to the analysed hypothesis.

The equations for loglinear models are presented in Appendix A. The goodness-of-fit statistics are used to estimate how well the tested models fit. The most widely used test, the likelihood ratio chi-square test ( $L^2$ ), is used in order to test the goodness-of-fit of the loglinear model. Tables for the loglinear models, like in Table 23, also present the chi-square significance of models ( $p$ ) and dissimilarity index ( $\Delta$ ). Dissimilarity index can be understood as the smallest fraction of the cases that needs to be re-classified in order to make the model fit perfectly (see Agresti 1990; Firth - Kuha 1999). It is considered as a standard overall fit statistic for loglinear models. The smaller the figure is, the better model fit also is. It does not have definitive limits because it is dependent on the number of cases as well as the number of parameters. However, usually a fitting model has a dissimilarity index lower than five per cent. The most important criterion is to compare the fit statistics of different models to each other. Analyses were conducted using the LEM program (Vermunt 1997).

## 8.4 Overindebtedness as rational behaviour

As the first example of using rationality dimensions in the testing of the explanations of social behaviour, let us consider the phenomenon that was used as an example of the problems following overindividualised and -socialised explanations, overindebtedness as observed through credit defaulting. In Chapter 4 it was shown that usual individual-level explanations attached to overindebtedness did not seem to apply: there was no evidence supporting the validity of different voluntary explanations, only evidence suggesting that the causes of overindebtedness are “external” to overindebted persons, such as mass unemployment (referring actually to the institution-level economic causes) or side-effects of divorce or having more family members. How, then, could overindebtedness be explained using the current research setting, applying the dimensions of rationality as the bridge hypotheses having empirical content?

### 8.4.1 The individual-level explanations of overindebtedness

In Chapter 4, two groups were compared: persons who have never had any credit defaults and persons who had them at the time when the survey was collected (the group *has now*). It was discovered that individual-level variables “*Risk-perception*” and “*Loan-scepticism*”, based on the scores derived from the attitude variables with main component analysis, were both found to be in connection with credit defaulting. Similar individual-level variables indicating that over-consumption could be the cause of over-indebtedness was not found to be in connection with overindebtedness, if analysed through the credit defaulters. Several social-economic background variables were also found to have a connection with credit defaulting – divorce, unemployment, low income, having more children, low education and an age between 31-40 years.

The results seemed to be in contradiction with the proposed individual-level explanations of overindebtedness. The individual-level variables showed better what had followed from the overindebtedness than what could be considered as the causes of it. Credit defaulters were found to be more likely aware about the risks of economic action than the others and also more sceptical towards the possibilities to gain utilities using loans and credit. The social-economic background variables seemed to have the causal power to explain overindebtedness, whereas individual-level variables referred more clearly to how overindebtedness causes certain attitude types to be more likely than the others. However, it was noted that more general-level measures of individual action would probably give a more detailed picture about the cause of overin-

debtedness. The rationality variables of the previous chapter have this more general level character.

In the context of rationality variables, it can be argued that three versions of the explanations of overindebtedness can be proposed: utilitarian, normative and structural. The first relies on the assumption that utilitarian action can lead to overindebtedness easier than other types of action, and that this type of action is actually part of instrumentally rational action. If the strict utilitarian explanation would apply, the persons who currently have defaults should be assumed as being more likely to be instrumentally rational than the other groups. This kind of hypothesis could also be found behind the over-consumption hypothesis, as well as behind the usage of loan-scepticism as a reference to individual-level causes of overindebtedness.

Also, another version of this assumption could be tested – it may be argued that when aspiring to desired economic outcomes, utilitarian persons do not pay enough attention to the risks related to their selected means of action. Thereby credit defaulters should be assumed to be less likely risk-rational than other groups. This kind of assumption can also be connected to the idea that overindebtedness is caused by an inability to perceive the risks related to economic action well enough, like it was assumed in the case of using “*risk-perception*” as a reference to a certain type of individual-level action.

When rationality variables are applied, the explanations lead to two hypotheses:

***Hypothesis A (Instrumentality hypothesis):*** *Credit defaulters are more likely to be instrumentally rational than others.*

***Hypothesis B (Risk-awareness hypothesis):*** *Credit defaulters are less likely to be risk-rational than others.*

In Chapter 4 it was also noted that the explanations applying to individual-level explanations include a normative aspect. A normative explanation would assume that credit defaulters have not internalised normative values in society properly enough. In the context of rationality variables, this would mean that those who are overindebted are less likely to be value-rational than others – value-orientation is not connected to outcome-aspiration as often as in the case of others. Also, another version of this assumption can be proposed – that the overindebted are less likely to be value-oriented as well as too *eagerly* outcome-oriented. Thereby they should be less likely to be axiologically rational. Thereby the following hypotheses may be tested.

***Hypothesis C (Value rationality hypothesis):*** *Credit defaulters are less likely to be value-rational than others.*

***Hypothesis D (Axiological rationality hypothesis):*** *Credit defaulters are less likely to be axiologically rational than others.*

Also, the possibility of structural explanations and their relation to rationality should be considered in order to avoid the fallacy of an overindividualised explanation. In order to do this, the variable for unemployment experiences is included in the model. In Chapter 4 it was discovered that current unemployment as well as unemployment experiences from the previous five years increase the probability of being overindebted. The explanatory power of the unemployment-variable was the second highest – only age had a stronger explanatory power. When the association between unemployment experiences and credit defaulting is controlled, it is safer to argue that the rest of the variation is caused by other associations. It may very well be that no additional effects can be found, as the connection of the background variables to credit defaulting was found to be quite strong in Chapter 4.

The reason why unemployment is chosen instead of, for example, age in order to take structural effects into account is because there has been some research suggesting that overindebtedness lowers the eagerness to search for work. This is because the overindebted would not benefit economically from employment as much as others – extra income over the welfare state benefit levels goes to the pockets of the debtors (see Iivari - Mälkiä 1999). This means that if the mechanism really has the assumed effect, the actions of the credit defaulters who nevertheless choose to work should not be clearly economically motivated, and thus less likely instrumentally rational. Thus, additional rationality-related explanations can be tested when unemployment is also included in the model.

The same mechanism also has an implication on the group of persons who have previously been overindebted, but who do not currently have credit defaults. The only way to get rid of debts is to have an adequate level of income in order to pay back such debt, and usually this means having a job. If having a job was one of the strongest prerequisites of getting out of overindebtedness, and if working should be motivated otherwise than just instrumentally if a person was overindebted, it should be expected that those who have not been unemployed should actually be more instrumentally rational than other groups with experiences of credit defaults.

Thus, the hypotheses related to unemployment to be analysed are as follows:

***Hypothesis E (The non-instrumental working -hypothesis):*** *The employed credit defaulters are less likely to be instrumentally rational than others.*

***Hypothesis F (The instrumental ex-credit defaulter -hypothesis):*** *The probability of instrumental rationality is higher among persons without unemployment experiences but who have previously had credit defaults*

*than among other groups having current or previous experiences of overindebtedness.*

The analysis in Chapter 4 suggested that structural forces explain overindebtedness best, and that the difference in rationality related to not being overindebted should be such that can be interpreted as a reaction followed from the environmental changes only. Similar results should be expected here also in the cases of hypotheses A-E.

#### 8.4.2 The analysis

Four variables need to be modelled in order to test the six above mentioned hypotheses: dichotomous variables for the means-to-values and risks-to-outcome-orientation of rationality, a variable for unemployment experiences (*none during last five years, is now, has been during the last five years*) and a variable for the groups of credit defaulters (*none never, has now, has had before but not now*). Like in Chapter 4, persons who have no credit or loans and do not have credit defaults or are over 62 are excluded from the analysis. Table 21 shows the percentages of persons in different groups of credit defaulting according to unemployment experiences. The frequencies seem to be “naturally biased” in respect of the persons who have never had credit defaults and not been unemployed during the last five years. Having credit defaults currently is more usual among the persons who are currently unemployed. The persons who do not have credit defaults any more are also most likely to have had experiences of unemployment in the past.

Table 21. Credit defaulting according to experiences of unemployment.

		<i>Credit defaults</i>			
		<i>None, never</i>	<i>Has now</i>	<i>Has been</i>	<i>Total</i>
<i>Unemployment during 5 last years</i>	<i>No</i>	91.2	4.5	4.3	100 %
	<i>Is now</i>	77.7	16.9	5.4	100 %
	<i>Has been</i>	85.5	5.8	8.7	100 %
<i>Total</i>		89.5	6.0	8.7	100 %

Table 22. Frequencies of persons in different groups of credit defaulters according to unemployment experiences during the last five years according to rationality types and odds of each rationality type according to groups of credit defaulters and unemployment experiences if compared to average odds of other rationality types.

		<i>Credit defaulting</i>				<i>Odds</i>		
		<i>Frequencies</i>						
	<i>Unemp- loyment</i>	<i>None, never</i>	<i>Has now</i>	<i>Has been</i>	<i>Total</i>	<i>None, never</i>	<i>Has now</i>	<i>Has been</i>
<i>Means Risk</i>	<i>No</i>	313	18	12	343	1.19	1.46	0.90
	<i>Is now</i>	24	5	1	30	0.79	0.75	0.43
	<i>Has been</i>	14	1	2	17	0.93	1.00	1.50
<i>Outcome</i>	<i>No</i>	302	11	19	332	1.13	0.75	1.73
	<i>Is now</i>	27	3	1	31	0.92	0.41	0.43
	<i>Has been</i>	12	0	2	14	0.77	-	1.50
<i>Values Risk</i>	<i>No</i>	237	17	12	266	0.59	0.98	0.74
	<i>Is now</i>	36	12	2	50	1.12	2.55	1.25
	<i>Has been</i>	17	3	1	21	0.99	13.50	0.70
<i>Outcome</i>	<i>No</i>	252	9	9	270	0.89	0.59	0.63
	<i>Is now</i>	28	5	4	37	0.97	0.75	3.00
	<i>Has been</i>	16	0	1	17	1.12	-	0.60
<b>Total</b>		1278	84	66	1428			

*Combinations of rationality variables:*

*Means\*Risk = Risk rationality*

*Means\*Outcome = Instrumental rat.*

*Values\*Risks = Axiological rationality*

*Values\*Outcome = Value rationality*

Table 22 shows the frequencies of the valid cases in the analysis as well as the odds of each rationality type according to the subgroups of credit defaulters and unemployment experiences, if compared to the average odds of other rationality types<sup>64</sup>. Risk rationality seems to be the least likely type of rational action among the persons who have previously had credit defaults but who are currently unemployed. Instrumental rationality seems to be less likely between both groups having experiences of credit defaulting (now or

<sup>64</sup>If A, B, C and D refer to the number of persons in each combination of rationality variables within certain social position (for example, within position of those who have not been unemployed and who do not have credit defaults in Table 21), the odds to rationality type A can be estimated in relation to average odds to other rationality types by

$$\frac{A/(A+B+C+D)}{\left(\frac{A+B+C}{3}\right)/(A+B+C+D)}, \text{ which can be simplified to } \frac{A}{\left(\frac{A+B+C}{3}\right)}.$$

Thus, the odds of being risk-rational, if compared to other rationality types in the group of not unemployed and not having credit defaults, is  $313/((302+237+252)/3) = 1.19$ .

previously) and being unemployed at the moment. Axiological rationality is most likely among persons being currently both unemployed and having credit defaults. Value rationality is most likely among the persons who are currently unemployed but do not have credit defaults any more. The patterns of the connections are, however, hard to see only with visual examination of the tables, not least because there are pretty big differences between the numbers of cases in the cells.

The actual analysis commences by taking into account the assumed “structural” effect between credit defaulting and unemployment. The association between the variables can be modelled according to the following design matrix:

(TStr)	1	0	0	>No unemployment during 5 y.
	0	2	0	>Unemployed now
	0	0	1	>U. previously, not now
	No credit defaults <	Has now c.d.<	Had previously, < not now	

The rows refer to the categories of unemployment-variable, the first row to persons who have no experiences of unemployment during the last five years, the second to persons who currently have them and the third row to persons who have been unemployed during the last five years but are not any more. The columns refer to the groups of credit defaulters. The first column refers to persons who have never had credit defaults, the second to persons who currently have them and the third row to persons who have previously had credit defaults. The model assumes that in the group of persons who have never had credit defaults the probability of not having unemployment experiences is the highest (parameter 1). In the groups currently having credit defaults the probability of also being currently unemployed is the highest (parameter 2), and also higher than the probability of not being unemployed in the group of those who have no credit defaults. In the group of those who have previously had credit defaults, the probability of having *previously* been unemployed is high. The model assumes that it is as strong as the probability of not having experiences of unemployment in the group of persons who have never had credit defaults. The rest of the cells indicated by zeros consist the reference category in the models where the design matrix TStr is applied.

The loglinear models are presented in Table 23. The independence model between the four variables is presented first. It tests the preliminary assumption that there are no statistically significant connections between the levels of

the modelled variables. Not surprisingly, this model does not provide adequate fit for the data. The design matrix TStr is applied in Model 1 (the structural model). With only two degrees of freedom lost (according to two additional parameters needed for the model) the chi-squared is improved by 29.500 if compared to the independence model.

Table 23. Loglinear models for credit defaulting, unemployment experiences and rationality types.

<i>Model</i>	$L^2$	<i>p</i>	<i>d.f.</i>	$\Delta$
<b>1. Independence model</b>	65.073	0.000	29	0.534
<b>2. Structural model: TStr</b>	35.573	0.125	27	0.044
<b>3. Instrumentality &amp; risk-awareness model: TStr + TInRi</b>	30.630	0.202	25	0.040
<b>4. Value- &amp; Axiological rationality model: TStr + TVaAx</b>	26.196	0.397	25	0.037
<b>5. Non-instrumentality model: TStr+ TNoInstr</b>	28.058	0.258	24	0.038
<b>6. Modified Non-instrumentality model: TStr+ TNoInstr2</b>	28.721	0.276	25	0.039

*Tstr, TinRi, TvaAx, TNoInstr, TNoInstr2 = parameters according to design matrices*

Table 24 shows the parameter effects for two topological parameters of Model 2, indicated with numbers 1 and 2 in the TStr-design matrix. The parameter estimates show effects that support the assumptions that the model was based on – the currently unemployed are over represented among credit defaulters, the persons with no unemployment experiences over represented among those who have never had credit defaults and the persons previously having credit defaults are over represented among the persons who have previously also had unemployment experiences. The odds are about half in the case of the two latter groups if compared to the first.

Model 2 can already be considered as quite well fitting, because the model is non-significant according to the usual statistical limits. This suggests that there will not be too much to be explained with the models including the parameters to control variation according to rationality variables. Thereby the models with additional parameters need to be interpreted carefully, keeping in mind the risks of overfitting.

Table 24. Parameter estimates for topological models 1-3 for credit defaulting, unemployment experiences and rationality types. Betas, standard errors, z-values and odds.

**2. Structural model**

<i>Parameters</i>	<i>TStr</i>	
	<i>1</i>	<i>2</i>
<i>Beta</i>	0.378	1.099
<i>Std err</i>	0.195	0.309
<i>Z-value</i>	1.937	3.555
<i>Odds</i>	1.460	3.002

**3. Instrumentality & Risk-awareness model**

<i>Parameters</i>	<i>TStr</i>		<i>TInRi</i>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Beta</i>	0.378	1.099	-0.655	-0.139
<i>Std err</i>	0.195	0.309	0.311	0.259
<i>Z-value</i>	1.937	3.555	-2.104	-0.536
<i>Odds</i>	1.460	3.002	0.520	0.870

**4. Value & Axiological rationality model**

<i>Parameters</i>	<i>TStr</i>		<i>TVaAx</i>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Beta</i>	0.378	1.099	-0.130	0.686
<i>Std err</i>	0.195	0.309	0.319	0.248
<i>Z-value</i>	1.937	3.555	-0.407	2.770
<i>Odds</i>	1.460	3.002	0.879	1.985

Next, both the *instrumentality* and *risk-awareness* hypotheses will be tested in the same model. This can be achieved by including the following topological parametrisation:

(TInRi)	0	2	0	>	Means-risks (risk rationality)
	0	1	0	>	Means-outcomes (instrumental rationality)
	0	0	0	>	Values-risks (axiological rationality)
	0	0	0	>	Values-outcomes (value rationality)
	No credit defaults <	Has now c.d. <	Had previously, < not now <		

The rows refer to the ideal types of rational behaviour, the columns to groups according to credit defaulting. The parameter referred to as 1 tests the assumed stronger probability of instrumental rationality in the group of persons having currently credit defaults, parameter 2 the assumed lower probability of risk rationality in the same group.

The new parameters of the TInRi-design matrix are combined with the structural effects of the previous model in Model 3 (the instrumentality & risk-awareness model). The fit statistics are shown in Table 23, and the parameter effects in Table 24. It can be seen that the model fit is improved significantly with Model 3, if compared to the structural model (chi<sup>2</sup> improvement 4.943 with 2 d.f.). The parameter estimates suggest that the difference to the reference cells is only significant in the case of parameter 1 for instrumentality, but that the direction of the effect is, even in that case, opposite to the direction that the instrumentality hypothesis assumes – credit defaulters are less likely than others to be instrumentally rational, not the opposite way around. The anticipated effect in the case of risk rationality is neither observed. Thus, neither Hypotheses A or B can be accepted. One may also note that the parameters of the TStr-design matrix are practically independent of the new included effects, because the parameters are exactly (!) the same on the reported three-digit level as they were in the structural model<sup>65</sup>. The findings, or better the lack of them, are in line with the results of the analysis of Chapter 4.

Now, let us consider the next two hypotheses. *Value rationality hypothesis* assumes credit defaulters to be less likely value-oriented and *Axiological hy-*

<sup>65</sup>In fact, the parameter estimate for parameter 1 is lowered by 0.0001 in the second model. All of the other numbers remain the same, also if the fourth digits are compared.

*pothesis* them to be less likely axiologically rational. The hypotheses can be tested with a topological model including the following parametrisation:

	0	0	0	>Means-risks ( <i>risk rationality</i> )
(TVaAx)	0	0	0	>Means-outcomes ( <i>instrumental rationality</i> )
	0	2	0	>Values-risks ( <i>axiological rationality</i> )
	0	1	0	>Values-outcomes ( <i>value rationality</i> )
	No credit defaults <	Has now c.d. <	Had previously, <	not now

The group referred to as parameter 1 can be used in order to evaluate the support for the *Value rationality* -hypothesis, the group referred to as parameter 2, support for the *Axiological rationality* -hypothesis. The model fit is again improved clearly with Model 3 (the value & axiological rationality model), if compared to the structural model (chi<sup>2</sup> improved 9.377 by 2 d.f. between the models). This time it is only parameter 2 for axiological rationality that improves the model fit significantly. The effect is in the opposite direction that Hypothesis D assumes, because it turns out that credit defaulters are more likely to be axiologically rational than others.

Based on the analysis this far, it may be argued that indeed the structural model of the explanation of credit defaulting, and thereby also that of overindebtedness, is more accurate than the explanations based on the voluntary causes applying assumptions about the type of rationality of behaviour (or their irrationality, if only one ideal type would be assumed to be sufficient) suggest. Also, the connections between rationality variables and credit defaulters show quite clearly that the deviation in rationality that is observed is more likely referring to the fact that the variation between the rationality groups should be more correctly considered as the effects themselves than the causes of overindebtedness.

From the analyses conducted this far it can be concluded that the more abstract individual-level variables used here produce more or less similar results to the analyses conducted in Chapter 4. It may thus be argued that rationality variables measure the topics they are intended to – or at least don't fail any more than the previously used individual-level variables.

Finally, the two remaining hypotheses connected to unemployment as well as to instrumental rationality need to be tested. In order to do that, a more complicated topological model is needed. The following design matrix is now attached to the structural model:

	0	0	0		
	0	0	0		} <i>Means-risks</i> ( <i>risk rationality</i> )
	0	0	0		
(TNoInstr)	0	1	2	>No unempl. during 5 y.	} <i>Means-outcomes</i> ( <i>instrumental rationality</i> )
	0	3	3	>Unemployed now	
	0	3	3	>U. previously, not now	
	0	0	0		} <i>Values-risks</i> ( <i>axiological rationality</i> )
	0	0	0		
	0	0	0		} <i>Values-outcomes</i> ( <i>value rationality</i> )
	0	0	0		
	0	0	0		
	∨	∨	∨		
	<i>No credit defaults</i>	<i>Has now c.d.</i>	<i>Had previously, not now</i>		

The groups referred to as parameter 1 are needed in order to test Hypothesis E, arguing that instrumental rationality is less likely in the group of credit defaulters who work than among other credit defaulters. The other parameters (referred to with numbers 2 and 3) are needed in order to test Hypothesis F concerning the instrumentality of the ex-credit defaulters. It claims that the persons who have previously been credit defaulters but who have not been unemployed are more likely to be instrumentally rational than other groups of persons with experiences of credit defaulting, because instrumental rationality is supposed to be likely to reduce the probability of searching for work if a credit defaulter is unemployed. Thus, the group should be differentiated from all other groups having experiences of credit defaults, which is why parameter 3 is also needed.

It can be seen from Table 23 that the fit is not significantly improved according to the usual limits (model  $\chi^2$  improved by 7.515 with 3 d.f.). The parameter estimates presented in Table 25 show that Hypothesis E is not supported. The probability of instrumental rationality is reduced with credit defaults independently of whether persons are still working or not. This indicates that at least credit defaulters are not leaving their jobs because they instrumentally consider the advantages of a job as being too weak.

Table 25. Parameter estimates for topological models 4-5 for credit defaulting, unemployment experiences and rationality types. Betas, standard errors, z-values and odds.

**4. Non-instrumentality model**

<i>Parameters</i>	<u><i>TStr</i></u>		<u><i>TNoInstr</i></u>		
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>Beta</i>	0.546	1.006	-0.355	0.444	-0.798
<i>Std. Err.</i>	0.205	0.318	0.339	0.288	0.442
<i>Z-value</i>	2.657	3.160	-1.048	1.542	-1.807
<i>Odds</i>	1.726	2.733	0.701	1.559	0.450

**5. Modified non-instrumentality model**

<i>Parameters</i>	<i>TStr</i>		<i>TnoInstr2*</i>	
	<i>1</i>	<i>2</i>	<i>1(+3)</i>	<i>2</i>
<i>Beta</i>	0.514	0.966	-0.534	0.442
<i>Std. Err.</i>	0.203	0.314	0.271	0.288
<i>Z-value</i>	2.530	3.079	-1.969	1.537
<i>Odds</i>	1.672	2.628	0.586	1.556

\* *Parameters 1 & 3 of TNoInstr collapsed into same*

It can be seen from Table 25 that parameters 1 and 3 are so close to each other that they can be “collapsed” under the same parameter, and thus one degree of freedom can be saved. Model 5 (modified non-instrumentality model) tests this simplified model. Now the model fit improvement is significant (6.852 with only 2 d.f.).

The parameter estimates of this model show that if compared to the rest of the population, the probability of instrumental rationality is weaker among persons with experiences of credit defaulting. However, the probability of instrumentality is significantly higher among persons who have no experiences of unemployment but have previously had credit defaults if compared to other groups having experiences of credit defaults. This finding supports Hypothesis F; instrumentally rational action – which can be interpreted as a sign of the lack of utilities associated with working for the credit defaulters – reduces the probability of finding work if a credit defaulter is also unemployed. This interpretation is also supported by the parameters of the TStr-design matrix, which for the first time are also affected when other parameters are included in the model. Parameter 1 of the TStr-design matrix, controlling the higher probability of the persons who have previously had credit defaulters to be previ-

ously unemployed, is slightly increased. Although the improvement is very slight, especially given the level of standard errors, the change in effect is nonetheless in the right direction. This suggests that the effect of getting a job as a way of getting away from overindebtedness would be higher, if the instrumental motives of work would be clearer for credit defaulters. When this is the case, and because it is known that work is the main way out of overindebtedness, it can be argued that the lack of possibility to be instrumentally rational towards working hinders credit defaulters getting a job.

In conclusion from the analysis of the rational explanations of overindebtedness, the explanations of becoming overindebted that are applied as individual-level causes of the phenomenon were not supported by the results. Thus, the results of the analysis in Chapter 4 are strengthened also when more overall estimates of the types of individual-level action are applied. However, when the analysis was extended to the explanation of the causes of getting away from overindebtedness, the results show that a rationality explanation has an effect. In fact, it can be seen that it is possible that the lack of instrumental motives related to working hinders credit defaulters to get a job. This result supports the finding of Iivari & Mälkiä (1999) that working does not pay well enough for the persons who are already overindebted but unemployed. Inasmuch this is really a cause or just an effect remains open for future analysis. The cross-sectional dataset restricts the analysis to *post hoc* observations only.

The analysis applying rationality variables and bridging hypotheses with empirical content seems to produce meaningful results. In the next chapter the analysis will be extended to three additional topics already mentioned at the beginning of this chapter. These are the micro-base of social mobility, the rational decisions of having children and the economic incentives and disincentives to work. The method of testing is exactly the same as applied here.



## 9 OTHER EXAMPLES OF THE APPLICATION OF RATIONALITIES

In the previous chapter, the idea of how to apply the modified version of RAT with empirical content in explanation of social phenomena was introduced with an example of how that can be done in the case of overindebtedness. In this chapter, the other examples already mentioned will be tested. These are:

- The micro-base of social mobility
- Rational decisions of having children
- Economic incentives and disincentives to work

The two first topics are selected because theories concerning the explanatory causes of them are explicitly presented in the context of already existing versions of rationality theories. Thus, the advantages of the current version of rationality theories over the previous ones should be particularly easy to see when these topics are analysed.

John H. Goldthorpe presents the micro-base model of social mobility in his book *“On Sociology...”* (2000), in the same book he collected writings about RAT. It is clearly an example of how his version of RAT should be applied in the explanation of a social phenomenon. Because the version of RAT proposed in Chapters 5 and 6 is argued to be an improvement on Goldthorpe's version, it is important to test it in the explanation of social mobility, too, in order to see possible advantages in practice.

In one of the most influential books applying RCT, Gary S. Becker applies the theory in order to explain decisions connected to having children (see Becker 1981). He uses a very thin version of rationality theory, which – given the context of the previous chapters – should almost automatically be assumed as a too restricting starting point. However, there have been various studies in which the theory has been tested, and actually quite surprisingly it has been found to be at least partially valid (see Kravdal 1994; Taris 1998). Usually criticism is targeted at the lack of realism of the applied thin version of rationality theory (see Hechter - Kanazawa 1997; Friedman et al 1994). Advantages of applying the current version of RAT should be especially apparent when this topic is analysed, because criticism should largely be covered in the version of the theory proposed in Part II of this thesis.

The last topic is studied in order to show advantages of the theory in a more general social scientific context. Similarly to the studies of overindebtedness, studies of work-incentives can be considered as typical examples from a re-

search area in which overindividualist explanations are easily applied. Overindividualised explanations are especially connected to often proposed “active” employment policies, which underline individual responsibility for re-employment after unemployment (see Dropping et al 1999; Esping-Andersen 2002). The successful application of the proposed version of RAT in the explanation of work-related incentives may contribute new insights to this discussion in general.

One may note that the method of application is the same that was applied in the previous chapter. For this reason, a reader who was already “convinced” in the previous chapter and who is not interested in the topics to be analysed now can skip these examples and continue straight to the conclusions of the chapter.

## 9.1 The micro-base of social mobility

It is usual in the studies of social mobility that the theories applied cover only the structural level and do not often consider individual-level explanations. If one is following the principles of methodological individualism, this can be found to be problematic, because in principle it should be possible to bring these social-level phenomena back to the level of individual actors. Thus, in a chapter of his book *“On Sociology...”* (2000) John Goldthorpe outlines a “general” theory of social mobility, which also includes a micro-level explanation of social mobility based on his version of RAT. According to Goldthorpe, a theory of social mobility should be able to show “...*how the regularities that are empirically demonstrable in relative mobility rates result ultimately from central tendencies in courses of action followed by individuals(...)*.” (Goldthorpe 2000, 237.)

Goldthorpe outlines three theories of mobility strategies in respect of the social origins that can be found in the literature. The first of them, *functionalist theory*, states that the goals of individuals are always the same and that persons aim to move as far from less desired origins as possible and towards more desired destinations. This is expected to apply not only to intragenerational mobility, but also to intergenerational mobility, which means that parents try to make sure that their children always experience “upward” mobility, if possible. The second, *subculture theory*, suggests that strategies of social mobility show wide subculturally determined variations according to the social background of individuals. For example, people from working class origin may be less in favour of individual success and more in favour of other values than people from other origin classes. The third theory, Goldthorpe's own suggestion, claims that there are actually two strategies that can be distin-

guished: the strategy of avoiding risks associated with downward mobility and the strategy of achieving upward mobility. The latter strategy should always be considered as a secondary one, and especially the first independent of the social background. (Goldthorpe 2000, 241-243.) The last theory will be called here the *risk-achievement* theory of social mobility. It can actually be interpreted as a more detailed combination of the previous two.

Which of the theories is the most accurate one? It is not surprising that according to Goldthorpe, empirical evidence supports his theory. However, there is not too much research done on the topic that would utilise data with explicit information about the reasoning – and thereby also about the strategy – of action. In the case of the other studies applying attitudinal data, the evidence is at least somewhat contradictory in respect of the connections of attitudinal behaviour to social mobility. For example, neither personal satisfaction nor class-based voting has been found to be dependent on the experiences of social mobility or immobility (see Marshall - Firth 1999; Nieuwebeerta et al 2000). These previous findings may refer to the fact that searching the micro-base for social mobility is a less interesting task from the beginning, and that it is impossible to find empirical evidence of this kind of connection. However, in neither of the mentioned studies, the interest laid explicitly on rationality. In order to give the question a more reliable answer, the theories of the micro-base of social mobility need to be connected to more profound information about the type of rationality of action applied. This more detailed information is provided in the rationality dimensions.

### 9.1.1 Class schema and the level of absolute mobility

In order to analyse mobility theories with rationality variables, class positions (understood as primarily following the occupational structure of society, like in most studies of social mobility) need to be ordered hierarchically in respect of favourableness. Goldthorpe (2000) suggests that in order to accomplish this task, occupational positions should be divided into three main classes. The working class, consisting of manual and lower grade manual occupations, is the least favourable, whereas service class, consisting of professional, administrative or managerial occupations, is considered as the most favourable in terms of certainty of keeping a job, amount of salary and career prospects. Also, the third class (or group of classes), the intermediate group, should be distinguished, consisting of routine non-manual employees and employees in lower-grade technical or manual supervisory positions. Small employers and self-employed workers may be included in this intermediate group, although the risks of work as well as the possibilities to the accumulation of capital

differ significantly inside the intermediate group. (See Goldthorpe 2000, 239-241.)

The three groups were separated both in respect of the origin classes (the class of parents) and destination classes (own current class position) in dataset *Finland 1999*, covering 1754 cases (74 per cent) of the respondents. The final applied class schema is as follows:

- service class: main groups I & II in EGP (Erikson & Goldthorpe 1992) classification;
- intermediate group: main groups IIIa+b, IVa+b+c, V;
- working class: VI, VIIa+B

Note that differently to the previous analyses (Chapters 4 and 7), the intermediate class is understood as consisting not only of farmers and entrepreneurs, but also of the “lower” parts of white-collar and “higher” parts of blue-collar jobs.

### 9.1.2 Hypotheses of the micro-base of social mobility in relation to rationality groups

The outflow rates of social mobility measured with this classification are presented in Table 26. If the absolute numbers are counted, only 57.4 per cent of the population can be found to be in a different class group than their parents. The figures suggest a rather low rate of absolute mobility<sup>66</sup>. The low level of social mobility is of course due to the coarse classification necessary for the current analysis. 34.4 per cent of the population seem to have experienced favourable upward mobility, whereas 23.0 per cent of the population have experienced unfavourable downward mobility.

Frequencies in mobility-tables for each pair of rationality-groups (which each pair refer to different ideal types) are presented in Table 27. Similarly to the analysis of overindebtedness in the previous chapter, the table also contains information about the odds of belonging to each rationality type (i.e. odds of answering according to each ideal type of rationality) if compared to the odds of answering according to other ideal types in the same origin-destination position. For example, the odds of being means- and risk-oriented, thus risk-rational, is approximately one fourth (odds 1.26) more likely than being otherwise rational in the group persons with working class origins but being currently in the service class. Likewise, for persons being in the service class but originating from the intermediate class, it is approximately one tenth less

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<sup>66</sup> In the latest available Finnish study the absolute mobility rate was found to be 70 per cent among men and 80 per cent among women aged 30-35 (see Erola - Moisio 2002).

likely (odds 0.89) to be instrumentally rational, thus being both means- as well as outcome-oriented than otherwise rational.

Table 26. Outflow-table for social mobility on “Finland 1999” survey data. Classification according to “favourableness” of occupations.

	<i>Origin</i>	<i>Destination</i>			<i>Total</i>
		<i>Service</i>	<i>Intermediate</i>	<i>Working</i>	
	<i>Service</i>	47.6	28.4	24.0	100.0%
	<i>Intermediate</i>	25.4	37.1	37.4	100.0%
	<i>Working</i>	24.0	30.4	45.6	100.0%
	<i>Total</i>	28.3	32.7	39.0	100.0%

Table 27. Mobility tables for each pair of rationality groups. Frequencies and odds of each type of rationality if compared to average odds of other rationality types.

		<i>Origin</i>	<i>Frequencies</i>				<i>Outflow percentages</i>		
			<i>Service</i>	<i>Inter-med.</i>	<i>Working</i>	<i>Total</i>	<i>Service</i>	<i>Inter-med.</i>	<i>Working</i>
<i>Means</i>	<i>Risk</i>	<i>Service</i>	32	24	14	70	1.02	1.41	0.84
		<i>Intermed.</i>	43	63	48	154	1.05	1.14	0.81
		<i>Working</i>	50	57	68	175	1.26	1.09	0.82
	<i>Outcome</i>	<i>Service</i>	44	15	18	77	1.61	0.75	1.17
		<i>Intermed.</i>	38	48	51	137	0.89	0.80	0.88
		<i>Working</i>	46	57	76	179	1.12	1.09	0.95
<i>Values</i>	<i>Risk</i>	<i>Service</i>	19	22	13	54	0.53	1.25	0.76
		<i>Intermed.</i>	42	61	61	164	1.02	1.09	1.12
		<i>Working</i>	36	53	84	173	0.81	0.99	1.09
	<i>Outcome</i>	<i>Service</i>	31	14	19	64	0.98	0.69	1.27
		<i>Intermed.</i>	43	57	65	165	1.05	0.99	1.22
		<i>Working</i>	37	47	88	172	0.84	0.84	1.16
		<i>Total</i>	461	518	605	1584			

Combinations of rationality variables:

*Means*\**Risk* = Risk rationality

*Values*\**Risks* = Axiological rat.

*Means*\**Outcome* = Instrumental rat.

*Values*\**Outcome* = Value rat.

The odds suggest that the probability of risk rationality is lower in all working-class destination positions, whereas it is highest in the group of persons who have experienced “downward” mobility from the service class origin to an intermediate class destination. The odds of instrumental rationality seems to be higher in the group of persons who have remained in the service class themselves in relation to their origin, and is lower among all persons originating from the intermediate class or having experienced downward mobility to it. The probability of axiological rationality seems to be low among the immobile persons in the service class. Value rationality seems to be more common among the persons currently in the working class, whereas the odds of it seem to be lower than in the group of persons who have experienced downward mobility from the service class to intermediate class.

If functionalist theory was supported, there should not be any differences between class positions in respect of the different dimensions of rationality. Means and outcome rationality should be equally important throughout the mobility table, because achieving a better position is an equally important strategy for everyone. Because of this the variation of rationality, variables should be independent of both origin and destination classes (and of the interaction of origin and destination).

Subculture theory considers not so much about mobility but actually about immobility. The theory seems to suggest that the persons with working class origin should be more in favour of value-rational action, if the assumption about a higher probability of altruistic values or nonetheless other than “*success values*” in the working class applies (see Goldthorpe 2000, 241). That should actually make persons with working class background more likely to remain in the same class position as their parents, if the phenomenon has an effect on social mobility. In a similar manner, persons with service class background should be more in favour of means rationality, or even of instrumental rationality. Because they are already in the most advantageous class position in respect of their origins, instrumentality is likely to strengthen the probability of remaining in the same class position. These differences between the connections of different classes to rationalities may be due to the psychological outcomes of different types of jobs, the differences of the “embodied” tastes or political associations. (Centers 1950; see Giddens 1973, 185-186; Goldthorpe 1982 on “new” service class discussion; Bourdieu [1979]1984, 467-470.) The mechanism making these phenomena possible is acculturation that is strengthened during a long period of socialisation (see Berger - Luckmann 1966, 149-157; Boudon - Buorricaud [1982]1989, 157-160).

It is tempting to consider whether, in a similar manner, there is also a special *subculture of risk-awareness*, which would be connected to immobility in the intermediate classes. This is because the self-employed are categorised in

that group. In the group of self-employed, economic risks are connected to having a job, not to being without it. This effect may be hard to observe empirically because the self-employed are a rather small group in the intermediate class. Also, in general it may be argued that immobility reduces the probability of risk-perception, and thus reduces probability of risk-orientation in the immobile intermediate group. This is also shown in Table 27 – the odds of risk-orientation are not especially high among the immobile persons in the intermediate class.

The risk-achievement theory is the most complex in respect of its connection to the dimensions of rationality. It seems to be that because upward mobility strategies should be considered as at least meaningful for the individuals currently in the service class (because there is least to achieve in the context of social mobility), both means- and outcome-orientation, combined as instrumental rationality, should basically be *least* common in the highest class position. However, it should be noted that means-orientation can be a meaningful type of action only if persons have access to the *means* that can be used as a way of reaching the desired goal of action. Also, the type of means-orientation observed here is so general in character that it cannot be restricted to cover social mobility only. The same general character applies to outcome-orientation also – the persons who can trust that the action has desired outcomes need to have experiences from successes rather than from failure. Both of these aspects should be combined in the service class rather than in other classes because of the same reasons why the class position in question was also considered as being the most favourable one.

It may be argued that instrumental rationality can be used in order to *maintain* the already advantageous position as well as to achieve more advantages in respect of social background. Goldthorpe refers to these kinds of strategies as “*the strategies from above*”, pointing out at the strategies of social mobility typical to the service class, by using which meritocratic achievement in principle is in fact making the ascription of the advantages possible (see Goldthorpe 2000, 248-250). Table 27 shows that this indeed seems to be the case here, too; it is the immobile persons in the service class that seem to be most likely to be instrumentally rational if compared to other origin-destination combinations. The table also suggests that the same aspect makes axiological rationality, as a combination of risk- and value-orientation, to be less likely type of action than in any other origin-destination position.

It may also be noted that subculture- and risk-achievement theories seem to assume similar connections between service class and instrumentality. The differences between the theories seem to come from the additional hypothesis of the latter theory, which forms the risk-part of the theory and from having emphasis on acculturation in the previous.

According to risk-achievement theory, to avoid *uncertainty* related to downward mobility is the primary strategy of social mobility. Goldthorpe also notes that in the classes applying “strategies from below”, referring with this to the mobility strategies of the intermediate and working classes (Goldthorpe 2000, 244-248), this may play a bigger role than in the service class, because the strategies of achieving better positions (for example, by increasing the level of education) are more risky than the strategies of maintaining the current level of them. On the other hand, it may be argued that downward mobility is associated with a lower probability of risk-orientation. This is because it may be argued that risk-awareness plays a *smaller* role if there was “less to loose” in respect of the advantages of current class position. This means that if there are no advantages to loose, the risk of loosing them cannot hinder persons achieving the new ones. In particular this may be the case if one does not yet perceive the advantages of the destination position, which nevertheless are weaker than the ones in the origin class, but anyway better than in a lower class position. Thus, risk-awareness of action would make least sense in the working class among the persons who have experienced downward mobility. On the other hand, risks other than mobility should be expected to have an impact on the persons currently in the working class, the fact that will also influence on the level of *risks-to-outcome* -orientation in this class. Thus, although there is in principle no means of “loosing” within the class positions, there is always a risk of, for example, unemployment.

By being risk-aware the intermediate class can still protect itself from loosing the advantages of the position in relation to working class. On the other hand, the perceived risks should create stronger risk-awareness in the latter group. Thus, it may be argued that the *increased* probability of risk-orientation, as a part of strategies from below, should thereby be expected to be observed in the group of persons who have experienced downward mobility to the intermediate class. According to Table 27, this seems also to be the case. The effect of downward mobility as *reduced* probability of risk-orientation should only be expected to be observed in the group of persons who have experienced downward mobility to the working class. The group has “least to loose” in respect of favourableness of class position, and at the same time has not necessarily yet observed the new risks related to the “new” destination.

The hypotheses to be tested are the following:

**Hypothesis A (functionalist hypothesis):** *The pattern of social mobility does not vary on different levels of rationality variables.*

**Hypothesis B (subculture hypothesis):** *Immobility in different class positions is associated with certain types of rational behaviour: in the service class with instrumental rationality and in the working class with value rationality.*

**Hypothesis C (risk-sensitiveness hypothesis):** Downward mobility to the intermediate class should be associated with a higher probability of risk-orientation, and to the working class with a lower probability of risk-orientation if compared to the intermediate class.

It may be noted that Hypotheses B and C are not too strongly opposed to each other, but that risk-achievement theory actually combines them. Hypothesis A seems to be most contradictory to other theories, but as it will be shown, not necessarily completely opposite to others either.

### 9.1.3 Modelling the hypotheses

The pattern of intergenerational mobility between origin and destination classes presented in Table 26 can be effectively modelled with the following design matrix:

(TOD)	2	0	0	>Origin: service class
	0	1	1	>Origin: intermediate
	0	1	2	>Origin: working class
	$\angle$	$\angle$	$\angle$	
	<i>Destination: service</i>	<i>Destination: intermed.</i>	<i>Destination: working</i>	

Columns refer to destination classes, rows to origin classes. According to this model, social mobility between the three described class positions can effectively be outlined with two parameters only. According to this model, the persons in the service class originate mainly from the service class. Immobility is as likely as in the working class. These persons in the immobile service and working classes are referred to with parameter 2. The people currently in the intermediate class show lower (although higher than average) probability of immobility according to their origins. The probability of this is as strong as it is to originate from the intermediate class with working class destination or from the working class with intermediate class destination.

When this pattern between the origins and destinations is assumed to be the same on each level of rationality variables, the validity of the functionalist theory can be tested. The functionalist model will assume that the association of origin and destination is independent of the rationality variables. Given the

low number of classes considered, the model follows the pattern of social mobility in Finland observed also elsewhere (see Erola - Moisio 2002).

The reference model of no interaction between the variables (independence model) is presented as Model 1 in Table 28. Not surprisingly, this model does not yet fit, because it is well known that at least the origin and destination classes are dependent on each other also in a fairly open society such as Finland (see Erola - Moisio 2002; Pöntinen 1983; Pöntinen 1991)<sup>67</sup>. The functionalist model, according to the pattern described above in the TOD-desing matrix, is presented as Model 2. It can be seen that actually there is not too much variation left to explain – the model is already non-significant according to the usual significance level of 0.05, and could be considered as providing an adequate model for the interaction of the four variables. Basically the model suggests that functionalist theory is sufficient to outline the interaction of the variables. Table 29 shows the parameter estimates for three parameters of the design matrix TOD.

Table 28. Loglinear models for the analysis of the micro-base of intergenerational social mobility.

	$L^2$	$p$	$d.f.$	$\Delta$
<b>1. Model of independence</b>	93.763	0.000	29	0.087
<b>2. The functionalist model: TOD</b>	30.767	0.281	27	0.054
<b>3. Subculture model: TOD + TSuC</b>	18.254	0.831	25	0.043
<b>4. Risk-sensitiveness model: TOD + TRiS</b>	25.366	0.442	25	0.049

*TOD, TSuC, TRiS = parameters according to design matrices*

When this is the situation, testing other, more complicated models required by subculture and risk-achievement theories runs again at the risk of overfitting the model, in this case even more clearly than in the case of the analysis of overindebtedness. Nevertheless, it is felt that testing these models is important, although keeping in mind that the statistical tests may become unreliable. Also, both Hypotheses B and C will be tested separately, although risk-achievement theory basically assumes them both to be supported.

<sup>67</sup>This means simply that the current social position is dependent on the social position of the parents.

Table 29. Parameter estimates for the loglinear models of the micro-base of social mobility. Betas, standard errors, z-values and odds.

**2. Functionalist model**

<i>Parameters</i>	<u><i>TOD</i></u>	
	<i>1</i>	<i>2</i>
<i>Beta</i>	0.233	0.634
<i>Std. Err.</i>	0.097	0.079
<i>Z-value</i>	2.399	7.986
<i>Odds</i>	1.262	1.885

**3. Subculture model**

<i>Parameters</i>	<u><i>TOD</i></u>		<u><i>TsuC</i></u>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Beta</i>	0.315	0.595	0.230	-0.551
<i>Std. Err.</i>	0.100	0.096	0.104	0.259
<i>Z-value</i>	3.162	6.210	2.207	-2.127
<i>Odds</i>	1.370	1.813	1.259	0.577

**4. Risk-sensitiveness model**

<i>Parameters</i>	<u><i>TOD</i></u>		<u><i>TriS</i></u>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Beta</i>	0.346	0.649	0.406	-0.114
<i>Std. Err.</i>	0.110	0.089	0.193	0.131
<i>Z-value</i>	3.155	7.257	2.107	-0.872
<i>Odds</i>	1.413	1.913	1.501	0.892

Basically subculture theory explains immobility. Thus, a following addition to the topological model is presented:

		<u>Origin:</u>		
(TSuC)	0	0	0	>Service
	0	0	0	>Intermed.
	0	0	0	>Working
	} Means-risks			
	} (risk rationality)			
	1	0	0	>Service
	0	0	0	>Intermed.
	0	0	0	>Working
	} Means-outcomes			
	} (instrumental rationality)			
	2	0	0	>Service
	0	0	0	>Intermed.
0	0	1	>Working	
} Values-risks				
} (axiological rationality)				
0	0	0	>Service	
0	0	0	>Intermed.	
0	0	1	>Working	
} Values-outcomes				
} (value rationality)				
	<	<	<	
	<i>Destination: service</i>	<i>Destination: intermed.</i>	<i>Destination: Working</i>	

Each group of three lines refer to additional restrictions of origin-destination interaction in different groups of rationality variables. The model introduces two additional parameters to the functionalist model on the different levels of rationality variables. Parameter 1 refers to the assumable higher probability of instrumental rationality of immobile persons in the service class and assumed higher probability of value-orientation in the immobile working class (both in forms of axiological and value rationality). Parameter 2 refers to a lower probability of axiological rationality as a counter-effect of the higher probability of instrumental rationality among the immobile persons in the service class, which was suggested by the odds of Table 27. It was also assumed in the risk-achievement theory that both means- and outcome-orientation are part of the strategies from above, which may also be used in order to maintain the advantageous position. However, if subculture theory holds, both parameters should be statistically significant.

The fit statistics of Model 3 including the parameters of the TSuC-design matrix are presented in Table 28. It seems to have significantly better fit than was the case in the functionalist model (chi-squared change 12.512 with 2 degrees of freedom). Table 29 shows again the parameter estimates of the model. They reveal that both parameters have the anticipated effect. Also, adding two new parameters lowers the level of parameter 2 from the TOD-de-

sign matrix, whereas parameter 1 grows, suggesting that immobility in the service and working classes is somewhat increased because of the assumed effects of rationality, although these effects are fairly modest. Thus, subculture theory seems to hold.

Can also the risk part of risk-achievement theory be supported? If the residuals of the subculture model<sup>68</sup> are considered, the model takes two cells into account badly – higher probability of risk rationality in the intermediate class with service class origins and in the working class with intermediate class origin. Both of these cells are considered in Hypothesis C. In order to test the hypothesis, the following design matrix is added to the functionalist model:

			<u>Origin:</u>		
(TRiS)	0	1	2 > Service	}	
	0	0	2 > Intermed.		} Risk-orientation
	0	0	0 > Working		
	0	0	0 >	}	
	0	0	0 >		} Outcome-orientation
	0	0	0 >		
	<	<	<		
	<i>Destination: service</i>	<i>Destination: intermed.</i>	<i>Destination: Working</i>		

The three first lines refer to risk-orientation within the combinations of origin-destination classes. This model introduces two additional parameters to the functionalist model<sup>69</sup>. Parameter 1 tests the assumption that risk-orientation is more usual than on average in the intermediate class among persons who have experienced downward mobility from the service class. Parameter 2 tests the assumption that in the groups that have experienced downward mobility to the lowest level of destination according to favourableness of the position, namely to the working class, should basically be less risk-oriented. This was because of the lowered risk-awareness connected to downward mobility. In the case of these cells, the probability of risk-orientation should be clearly lower than in the case of the downward moved persons in the intermediate destination class.

<sup>68</sup>Not reported.

<sup>69</sup>Optimally this design matrix should have been added to the parameters included in the subculture model. However, doing this produces a model with  $L^2$  being 12.7339 with 23 degrees of freedom, which suggests that the model has been overfitted.

Model fit statistics can be found from Table 28. Fit is improved significantly with the functionalist model ( $\chi^2$  improvement 5.401 with 2 d.f.), which is nonetheless a weaker improvement than was gained from the previous model. The reason for this can be seen from the parameter estimates of the model, presented also in Table 29. The odds of risk-orientation increase with downward mobility to the intermediate destination class, as was anticipated. However, the probability of risk-orientation is so much weaker in other positions experiencing downward mobility that the effect cannot be distinguished from the effects of the reference cells. This finding is nevertheless still in line with Hypothesis C.

It can also be seen from the parameter estimates of risk-sensitiveness model in Table 29 that the risk-orientation of the persons who have experienced downward-mobility to the intermediate destination class can be considered as maintaining mobility – parameter 1 from the TOD-design matrix is higher even given the level of standard error when the effects of risk-orientation of the TRiS-design matrix are controlled.

#### 9.1.4 Functionalist, subculture or risk-achievement – or all of them?

The tests above make it clear that structural forces are the dominating ones when it comes to the explanation of social mobility, and the variation of individual-level decisions according to rationalities play only a very limited role. The functionalist model, assuming no variation in the pattern of social mobility, fitted quite well with the data. This can be used as an argument if one wishes to defend the usual way of studying social mobility by applying only social (or structural) effects. Micro-level explanations have only very limited importance.

The results give also fair support to the subculture theory. The analysis showed that immobility is in connection to the different types of rational-orientation; in the working class to value-orientation and in the service-class to instrumental rationality, which is a combination of means- and outcome-orientation. In the latter case there is also a counterpart effect of the lower probability of axiologically rational action to be observed. The analysis supports the achievement-part of risk-achievement theory as well. It seems to be possible to argue that instrumental rationality is applied in order to maintain class position within the service class, which can be observed as immobility in the class in question. It can also be argued that a certain kind of value-orientation, which in general is the opposite of means-orientation, maintains immobility in the working class.

The analysis also supports the risk-part of risk-achievement theory. The probability of risk-orientation is higher in the group that has experienced downward mobility to the intermediate class, and who have possibly perceived the consequences associated with it, and who have nevertheless a possibility to experience the mobility even to a less favourable position in class structure. In this group, risk-orientation may be a strategy to maintain the current position, although in this case it may be worth considering whether risk rationality is also the follow-up of an already realised worsening of class status.

The results suggest that when it comes to the effect of rational action to intergenerational social mobility, the impact of the previous to the latter is fairly modest. The effect can nevertheless be found. As an attempt to use rationality dimensions as a bridge hypothesis between more specific social theories, the analysis seems to be fairly successful. Although the different theories cannot be considered as completely opposite to each other, but better as supplementary to the earlier, simpler versions, it is quite safe to argue that functionalist theory has the widest coverage. On the other hand, it is clear that without a proper longitudinal dataset, subculture and especially risk-achievement theory can hardly have anything else than modest explanatory power on a phenomenon like this.

## 9.2 Rational decision of having children

According to “hard-edge” rational choice theorist Gary Becker (1981), people are assumed to be economically rational in decisions concerning how many children they will have. According to the theory, interaction between “quality” and quantity of children explains why the effective price of children rises with level of income. Quality of children refers to the ability of children to take care of the needs of parents when they are old, quantity to their amount. This relation should also be able to explain why the fertility rate in advanced modern societies is lower than in less advanced societies with lower levels of standard of living and average income.

Becker assumes that, in principle, altruism (referring simply that one's own needs are put aside because of the needs of others, in this case the needs of the children) determines the decisions within families, whereas market-situations are determined by selfishness. However, in modern societies, life is becoming more clearly determined by market behaviour even within families, because a high number of children will not guarantee greater “utility” in the future any more and there are ways to ensure the quality of fewer kids more efficiently than it has been in less advantaged societies. (See Becker 1981, 151-154)

Actually, according to Becker's model, a rational actor in modern society would prefer fewer kids to more. This is because in this way one should be able to maximise different types of utilities (for example, in the forms of income and human capital) allocated to each child as well as the utilities left for the parents own consumption. One could assume that it follows from this that a higher level of education or status of class position, which according to Becker are *human* capital, should be associated with a higher number of children. This is because people with more advantageous class positions and with higher education can guarantee “quality” of children more easily, because they have both more human and non-human capital to pass on to children. Basically, they can afford to have more children than others. (Becker 1981, 151-154.)

However, for people in more advantageous positions, a greater time usage actually refers to a greater investment of utilities, too. When the average income is higher, the costs in the form of used time followed from each child are greater than in the groups with lower income. This reverses the connection and makes children *more* expensive for persons in advantageous positions, and lowers the constraint to replace children with other, less costly “consumer durables”. It is this effect that makes the average family size become smaller when the modernisation of the society advances. The effect is enforced by the fact that in pre-modern societies it is the older relatives who invest their time in the children, whereas in modern societies parents themselves are required to do that as kinships become looser. (Becker 1981, 156-178, 342-361; also Friedman et al 1994.)

Becker's idea of the rational decisions of having children is part of his theory of the economics of the family that covers various decisions made in them. The theory has been tested occasionally. According to Hechter & Kanazewa (1997) these attempts have been more successful in the explanation of marriage and divorce, less in the explanation of having children. The main problem with Becker's model is that, according to it, fertility rates in modern societies should approach zero. In reality, however, a two-child family has become a “new” family standard in advanced modern societies.

It has been argued that the problem of Becker's model is that it underlines the instrumental value of children, while in reality it is based on the “immanent” valuation of them also. (Friedman et al 1994; Easterlin et al 1980). The version of RAT proposed in the previous chapters includes both the possibility to test the effect of instrumental action as well as the effect of “immanent values” in forms of both risk- and value-orientation. How does Becker's theory look when it is analysed in the light of the current version of RAT? Is it possible to find support for Becker's assumptions by using the current version of RAT under test?

### 9.2.1 Theory and rationalities

There is empirical evidence that instrumental reasoning can actually have significant effects on fertility rates. For example, a study in Norway has shown that young women's occupational activities were very important determinants of having the first child, and that the accumulated economic and material resources were important when the decision about the timing of the first birth was made (Kravdal 1994). Further, a study in the Netherlands has shown that if the currently childless had the opportunity to spend more money and had a lower need to give attention to a career, having children was believed to result in a lower loss (Taris 1998).

However, like it was already mentioned, usually the instrumental values of having children alone are not considered as sufficient explanation. In Becker's theory, this is taken into account with the assumption about the possible effects of parental altruism (Becker 1981, 124). As the dictionary definition of altruism is “*devotion to welfare of others (...) as a principle of action; opposed to egoism, selfishness*” (Oxford English Dictionary 1989), Becker's efforts to reduce altruism to the *instrumental* quality of children (Becker 1981, 364-366) can be ignored. In relation to rationality variables, altruism can be considered as a type of action referring to a higher probability of value-orientation in contrast to means-orientation. This is because altruism can be seen as a principle included in many strong value systems, such as in western religions or, as shown in Chapter 2, even in early utilitarian thought. Because altruism can also be interpreted as sensitiveness to risks related to children, altruism can also be seen as a higher probability of risk-orientation among persons having children.

If Becker's theory, including both instrumental as well as altruistic motives, is interpreted with the help of RAT proposed in this thesis, its assumptions would refer to the fact that having more children in general should be associated with value-orientation on the means-values-dimension of rationality, rather than with means-orientation. Because it is already known that value-orientation is least likely in the service class (see Table 27), this tendency for higher value-orientation of having children should be especially likely to be observed in higher class positions. If the lower probability of value-orientation in the service class is controlled, people with children should be observed as being more likely value-oriented in general.

In a similar manner, because of a higher level of altruism, people with children should also be *more* likely risk-aware than people without children, because according to the idea of altruism, a person's own outcomes from action are less important than the future possibilities of ensuring the life possibilities of children. However, people having more than one child will probably be less

likely risk-oriented, because the chances of ensuring quality of children grow with the number of children.

Critiques of Becker have underlined the importance of the immanent values in addition to the possible instrumental values of having children.<sup>70</sup> The reduction of uncertainty can be considered as an example of these values. It has been argued (and also some support has been found) that having children can be seen as a strategy to reduce uncertainty (see Friedman et al 1994). Having a child removes uncertainty about how life should be expected to turn in the future in a very concrete way. If rationality dimensions are considered, it can be argued that reduced uncertainty can be observed as a lower probability of risk-orientation. It may as well be argued that altruism, referring to immanent values, can also be observed as a stronger probability of usual value-orientation, for example, in the form of strong religious values concerning having children or using contraceptives to control that. These immanent values can be separated from Becker's altruism by the fact that the effect is likely to be observed only when having more than one child, and even in that case not in all class positions.

It can be argued that even if the risk-reduction hypothesis is not necessarily in contradiction to Becker's ideas, it at least confuses the "Beckerian" interpretation of the connection of risk-awareness and having children. According to the uncertainty-reduction principle, already having the first child reduces uncertainty in life in a very drastic manner.

According to interpretations of the theory made above, the following hypotheses can be proposed:

**Hypothesis A<sub>1</sub> (Beckerian risk-hypothesis):** *People with children are more altruistic than others, which can be observed as a stronger probability of risk-orientation than those without children. Risk-sensitivity becomes less important with the second child, because chances to ensure quality of children are doubled, if compared to one child -families.*

**Hypothesis A<sub>2</sub> (Uncertainty-reduction hypothesis):** *Because of reduced uncertainty, a lower probability of risk-orientation is already observed when having the first child. Thus, having the first child makes persons less likely risk-oriented than persons without children.*

**Hypothesis B<sub>1</sub> (Beckerian values hypothesis):** *Having more children in general refers to a stronger probability of value-orientation of action because of altruism. This effect can be observed as being stronger in the case of the service class, among which value-orientation is other-*

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<sup>70</sup>And of course, there are also emotional motives (see Grewall - Urschell 2001), which nevertheless fall outside the scope of the current research.

*wise less common and quality of children can be guaranteed more easily.*

**Hypothesis B<sub>2</sub> (Immanent values hypothesis):** *Value rationality connected to having children cannot be observed after having the first child, but only among those having more than one child. There may also be class differences whether the effect can be observed or not.*

One may be confused here because in fact it seems to be that in the hypotheses, rationality variables themselves are presented as being dependent. This is an important point to notice. It is actually only according to Hypothesis B<sub>2</sub> that it can clearly be claimed that the type of rational action itself has an effect on the probability of having children. In this sense, it is clearly an opposite hypothesis to B<sub>1</sub>, in which value-orientation follows from having a child. If it is remembered that risk-orientation is the opposite of outcome-orientation, a similar relationship between Hypotheses A<sub>1</sub> and A<sub>2</sub> can be understood. The will to get away from uncertainty is shown as the will to be able to act in some way other than risk rationally. At the same time, this is actually a sign of the opposite type of orientation of action, namely that of outcome-orientation. Thereby it may be argued that it is outcome-orientation that causes risk rationality to reduce. Still, it does not change the basic assumption behind Hypothesis A<sub>1</sub> – that it is social-structural causes that have an effect on rationality. However, it changes the causality in Hypothesis A<sub>2</sub>, in which it is outcome-orientation that causes having children and at the same time reduces uncertainty.

### 9.2.2 Testing the hypotheses

The hypotheses will be tested in a similar manner as previously, by fitting topological loglinear models. Rationality variables are the same two dichotomous variables that were used before, means-to-values dimension and risks-to-outcomes dimension of rationality. This time the hypotheses consider only the types of orientation, not their combinations as rationality types. The most important classification for the current analysis is of course how the persons will be classified in relation to whether and how many children they have. The first criterion is to differentiate persons with and without children. What are the most important categories of persons with children, then? As the average amount of children in Finnish families is 1.83 (see Statistics Finland 2003b), one focal point seems to be between the first and the second child. This is important also for hypothesis testing because having more children has an effect on what explanatory mechanisms will be applied. Thereby persons with no children, one, or two or more are distinguished from each other.

Children who do not live in the same household are taken into account, and persons who live alone and do not have children are categorised in the group of persons with no children.

Basically, either education or class could have been used in the testing of Becker's hypotheses. However, it turned out that educational level does not have a significant connection to having children. A similar lack of connection between educational level and having children has been found also in Norway (see Kravdal 1994). In Finland, this may be due to the fact that educational differences are diminishing, as the overall educational level is getting higher in Finnish society (see Kivinen et al 2001). Thus, class status is applied in the analysis instead of education.

Class position is measured with the same three-level "objective" class classification based on favourableness of occupational positions that was used also in the case of mobility strategies. However, because only the current class position is needed, class positions for those missing a destination class are drawn either from the class position of spouse or parents, if possible.

All in all there are four variables of which associations are to be tested; number of children, social class, means-to-values rationality and risks-to-outcomes rationality. Even with this, three rather important factors are not included in the models: age, gender and income (see Blossfeld - Huinink 1991; Friedman et al 1994). Gender and income are not taken into account at all, because at this point a simpler test is preferred because it is believed that the possible advantages of using rationality dimensions should be observable already with a simple test with fewer parameters<sup>71</sup>. It can nevertheless be assumed that the connection of income to number of children and rationality would be similar to the connections of class, rationality and number children. The effects related to gender are more complicated, and would probably provide interesting information about the connection to the rationality of having children. Becker's original theory does not explicitly consider gender, and the inclusion of it would have also required including variables with more detailed information about the family structure. That is why gender will be excluded from the current analysis also. The effect of age, however, is controlled by weighting the analysed frequencies according to it.

Table 30 shows the percentages of persons in each group of "children"-variable according to social class. According to the table, working class is the

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<sup>71</sup>In order to use more variables and at the same time have the advantages of cell-specific effects in the models, one could also apply multinomial conditional logistic regression in the analysis (see Hendrickx - Ganzeboom 1998). However, as the applications here are meant to be more or less examples of the application of the theory, the loglinear models are used because of their easier theoretical interpretation.

Table 30. Percentages of persons having no, one or two or more children according to social class. Percentages weighted by age.

	<i>Number of children</i>			<i>Total</i>
	<i>0</i>	<i>1</i>	<i>2+</i>	
<i>service</i>	27.0	15.2	57.8	100 %
<i>intermediate</i>	27.8	15.6	56.6	100 %
<i>working</i>	32.7	17.3	50.0	100 %
<i>Total</i>	29.7	16.2	54.1	100 %

Table 31. The frequencies of number of children in families according to rationality groups and class positions and the odds of each rationality type in the subgroups of classes and number of children in the family, if compared to average odds of other rationality types. All numbers weighted by age.

			<i>Frequencies</i>				<i>Odds of rationality type</i>		
			<i>0</i>	<i>1</i>	<i>2+</i>		<i>0</i>	<i>1</i>	<i>2+</i>
<i>Means Risk</i>	<i>Service</i>	45	24	76	146	1.35	1.18	0.92	
	<i>Intermed.</i>	57	23	79	159	1.39	0.87	0.85	
	<i>Working</i>	61	33	77	171	0.83	0.92	0.70	
<i>Outcome</i>	<i>Service</i>	46	31	86	163	1.36	1.68	1.09	
	<i>Intermed.</i>	39	22	85	146	0.83	0.82	0.94	
	<i>Working</i>	65	31	102	197	0.90	0.86	0.99	
<i>Values Risk</i>	<i>Service</i>	35	12	71	118	0.93	0.50	0.84	
	<i>Intermed.</i>	55	33	97	186	1.33	1.45	1.13	
	<i>Working</i>	80	36	109	225	1.19	1.06	1.09	
<i>Outcome</i>	<i>Service</i>	21	18	91	130	0.49	0.82	1.17	
	<i>Intermed.</i>	29	24	96	148	0.57	0.92	1.10	
	<i>Working</i>	75	39	121	236	1.10	1.17	1.27	
<i>Total</i>			608	326	1090	2024			

*Combinations of rationality variables:*

*Means\*Risk = Risk rationality*

*Values\*Risks = Axiological rationality*

*Means\*Outcome = Instrumental rat.*

*Values\*Outcome = Value rationality*

most likely to not have children. This is reflected by a lower probability of having two or more children in this class. There does not seem to be any differences in the probabilities of having children between the service and intermediate classes. Table 31 shows the frequencies of groups of persons with different amounts of children in the weighted data on the different levels of rationality variables and classes, as well as the odds of each ideal type of rationality in each class-by-children group if contrasted to the odds of acting according to any other ideal type of rationality, similarly to the previous analyses. There seems to be some differences both in respect of class positions and rationality variables. Value rationality is less probable than other types of rationality in the groups of service and intermediate classes without children. Instrumental rationality is more likely and axiological rationality less probable ideal type of rationality in the service class with one child. Risk rationality is the least likely and value rationality the most likely ideal type of rationality in the working class with two or more children.

How are these results if compared to Becker's assumptions? They seem to be in line with them: the class position associated with the lowest level of human capital is associated with the highest probability of having no children. Frequencies suggest that it is possible to test whether altruistic or "qualitative" motives can truly be distinguished, as Becker's theory seems to assume. The independence model of no association between variables is shown in Table 32 as Model 1. The fit statistic  $L^2$  is non-significant as it may be expected according to the previous results of the association of rationality variables and other variables (see Chapter 7).

Table 32. Loglinear models for means-to-values rationality, risks-to-outcomes rationality, class position and number of children.

<i>Model</i>	<i>L<sup>2</sup></i>	<i>p</i>	<i>d.f.</i>	$\Delta$
<i>1. Independence model</i>	69.267	0.000	29	0.068
<i>2. Class-children base-model: TCCh</i>	56.773	0.001	28	0.060
<i>3. Risk-awareness model: TCCh+ RK</i>	46.561	0.008	26	0.057
<i>4. Linear risk-awareness model: TCCh + linRK</i>	46.756	0.0105	27	0.057
<i>5. Beckerian model: TCCh + linRK + TBeCh + TVaCl</i>	20.999	0.521	22	0.037

*TCCh, TBeCh, TVaCl* = parameters according to design matrices

*RK* = interaction term between risks-to-outcomes -orientation and number of children in the family

Table 30 suggests that the association of class and number of children can be modelled sufficiently with the following topological parameterisation:

(TCCh)	0	0	1	>	<i>Service class</i>
	0	0	1	>	<i>Intermediate</i>
	1	0	0	>	<i>Working class</i>
	<i>No children</i> <	<i>1 child</i> <	<i>≥ 2 children</i> <		

The rows refer to class, columns to number of children (no, one, two or more). The model assumes that in the service and intermediate classes, one is likely to have two or more children and in the working class, none. Model 2 tests the topological model in question. The model fit is improved very significantly, although the model cannot be considered as sufficient. The single interaction parameter estimate needed for the model is shown in Table 33. The model will be considered as the base model of class-and-family interaction.

Let us next consider Hypotheses  $A_1$  and  $A_2$  concerning risk-orientation. They can be tested by including an interaction term between *risks-to-outcome*-orientation and number of children (RK) in the model. Model 3, the risk-awareness model, tests this assumption. Adding the term improves the model fit significantly from the previous (chi-squared improved by 10.212 with 2 d.f.). Table 33 shows the parameters for the interaction term (parameters for the risk-awareness model). They show that the probability of risk-awareness becomes *significantly* lower only after having the second child. The connection of risk-orientation to having children appears however to be linear. The model assuming linear interaction between risk-orientation and having children is presented as Model 4 (the linear risk-awareness model). The model supports Hypothesis  $A_2$ ; having children does not refer to a stronger probability of risk-orientation but to a lower probability of it. One may note also that the interactions between class and number of children as well as risk-orientation and number of children are independent from each other, because the inclusion of the latter interaction term does not affect the parameters of the TCCh -design matrix at all. Thus, it may be argued that the effect between having children and risk-orientation is independent of class-status.

Table 33. Parameter estimates for the loglinear models of the rational explanations of having children. Betas, standard errors, z-values and odds.

<b>2. Structural model</b>					
	<u><b>TCCh</b></u>				
<b>Parameters</b>	<b>1</b>				
<b>Beta</b>	0.180				
<b>Std. Err.</b>	0.051				
<b>Z-value</b>	3.535				
<b>Odds</b>	1.198				
<b>3. Risk-awareness model</b>					
	<u><b>TCCh</b></u>	<u><b>RK-interaction</b></u>			
<b>Parameters</b>	<b>1</b>	<b>No child – one</b>	<b>No child – 2+</b>		
<b>Beta</b>	0.180	-0.216	-0.324		
<b>Std. Err.</b>	0.051	0.137	0.102		
<b>Z-value</b>	3.535	-1.570	-3.189		
<b>Odds</b>	1.198	0.806	0.723		
<b>4. Linear risk-awareness model</b>					
	<u><b>TCCh</b></u>	<u><b>Linear RK</b></u>			
<b>Parameters</b>	<b>1</b>				
<b>Beta</b>	0.180	-0.159			
<b>Std. Err.</b>	0.051	0.050			
<b>Z-value</b>	3.535	-3.159			
<b>Odds</b>	1.198	0.853			
<b>5. Beckerian model</b>					
	<u><b>TCCh</b></u>	<u><b>Linear RK</b></u>			
<b>Parameters</b>	<b>1</b>				
<b>Beta</b>	0.148	-0.159			
<b>Std. Err.</b>	0.055	0.050			
<b>Z-value</b>	2.708	-3.160			
<b>Odds</b>	1.159	0.853			
	<u><b>TVaCl</b></u>	<u><b>TBeCh</b></u>			
<b>Parameters</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Beta</b>	-0.584	0.084	0.143	0.001	0.480
<b>Std. Err.</b>	0.169	0.145	0.110	0.246	0.177
<b>Z-value</b>	-3.456	0.578	1.302	0.003	2.709
<b>Odds</b>	0.558	1.088	1.154	1.001	1.616

Finally, Hypotheses B<sub>1</sub> and B<sub>2</sub> can be tested. In order to do that Model 3 is extended with a topological parameterisation controlling the interaction of *means-to-values* -orientation, class and the number of children:

(TBeCh)	0	0	0 >	}	<i>Means-orientation</i>
	0	0	0 >		
	0	0	0 >		
				}	<i>Value-orientation</i>
	0	3	4 > <i>Service</i>		
	0	1	2 > <i>Intermed.</i>		
	0	1	2 > <i>Working</i>		
	No children <	1 child <	2 children <		
			^		

The three first lines refer to the parameters for means-orientation, the three last to the parameters for value-orientation. Parameter 1 tests the assumption that the probability of value-orientation becomes stronger after having the first child. Parameter 2 tests whether this probability is stronger among persons having 2 or more children. Parameters 3 and 4 test the assumption that these effects are in fact stronger in the service class.

When the model above is tested, it needs to be taken into account that there is a systematic variation between class and value-orientation. Table 31 suggested that the probability of value-orientation is lower in the service class than in other classes. The lower probability of value-orientation in the service class needs to be controlled with the following parameters:

(TVaCl)	0	0	0 >	<i>Means-orientation</i>
	1	0	0 >	<i>Value-orientation</i>
	Service class <	Intermediate <	Working <	

Rows refer to means- and value-orientation, columns to classes. Parameter 1 in the TVaCl -design matrix takes into account the lower probability of value-orientation in the service class.

The pattern of interaction shown in the TBeCh and TVaCl design matrices is included and tested in Model 5 (Beckerian model). The model fit (see Table 33) is improved significantly, if compared to the linear risk-awareness model (chi-squared change 25.757 with 5 d.f.). Table 33 shows the parameter estimates of the new model also. It can be seen that having children does not increase the probability of value-orientation in the working and intermediate

classes although the structural connection between the lower probability of value-orientation in the service class is controlled. In the service class, having only one child does not make a difference to the probability of value-orientation. This suggests that it is only having more than one child in the service class that contains the assumed effect. Thus, Becker's version of Hypothesis B is not supported by the analysis. It does not even apply in the case of the service class; if it would be, having the first child should already be associated with being more likely value-oriented at least in that class position. Thus, the results rather support the *immanent values* -hypothesis – having more than one child may be caused by strong value-orientation.

The inclusion of the parameters of the TBeCh and TVaCl -design matrices also has an effect on the parameters of structural model by weakening it (although within the standard errors). It may thus be speculated whether value-orientation in fact increases the differences between the probability of having children in the different classes.

Although Model 5 fits quite well with the data, it is not able to cover all relevant variation between the modelled variables. If the residuals of Model 5 are considered (not reported), it has to be mentioned that there is especially one cell in which a residual exceeds the absolute value of 2. The residual value is -2.114 in the group of axiologically rational persons in the intermediate class without children, suggesting that the probability of belonging to that group is weaker than the average. This supports the previous findings – rational choice-based models, especially in the case of thin versions of the theory, perform weakly when it comes to explanations of having children. It may be argued that if the models concerning exact ideal types, not only ideal dimensions of rationality, would have proposed, a more exact picture could have been achieved, which could have taken this effect into account.

### 9.2.3 Instrumentality or immanent values?

The first observations of the data indeed seem to support Becker's theory about the rational decision of having children. The working class was found to be more likely to be without children. However, the analysis was in contradiction with *Beckerian risk*-hypothesis as well as with *Beckerian altruism*-hypothesis, whereas it supported *uncertainty-reduction* and *immanent values* -hypotheses.

There is a linear connection between risk-orientation and having children – having more children reduces the probability of risk-orientation. It has also been found elsewhere that getting children may be used as a way to reduce uncertainty in life (see Friedman et al 1994). To be precise, in the current analy-

sis it was impossible to separate which one is really the cause and which one the effect from each other – reduced uncertainty may as well be the prerequisite of getting children as well as the follow-up from it. The discovery was nevertheless in contradiction with the assumption that was believed to be based on Becker's theory – having the first child did not increase the probability of risk-orientation. The results also showed that in the service class, having more than one child was associated with a stronger probability of value-orientation. In other classes this effect was not observed. This finding was in contradiction with *Beckerian altruism* -hypothesis, because it assumed that altruism was connected to having children and that the effect could be considered as “universal”. The fact that this hypothesis did not acquire support from the analysis may be due to the fact that value-orientation applies badly as a reference of altruism. It may nevertheless be asked why altruism should be restricted to the persons having children only? In fact, exactly the opposite argument seems to be at least a plausible assumption – the inability to have children causes, as well as altruism, a higher probability of value-orientation, independent of whether this is because of biological, economical or social reasons. Then again, if only immanent values – for example, strong religious values – are considered, they should be expected to create differences only in the probabilities of having more than the “average” two children, just as the results showed.

Again, the analysis seems to suggest that the application of RAT as a bridge theory with empirical content may provide advantageous interpretations to already available rationality-related theories. It is not argued here that Becker's theory should be considered simply as being false; by using RAT as the bridge hypothesis, the points of weakness and the points of strength of the original theory could be pointed out. The analysis suggests that unless other sources of altruism parenthood are considered, Becker's theory easily leads to a misinterpretation of the actual mechanisms explaining changes in fertility. Like in the previous empirical studies, Becker's theory seems to be somewhat in trouble with the explanation of the effect of value-orientation. There does not seem to be linear effects associated with having more children and the probability of value-orientation, as anticipated by human capital-related assumptions.

The advantage of using rationality variables in the testing is that theories can be made more precise and their relationship to other theories can be made more accurate, when explicit assumptions can be tested in the form of hypotheses. It is nevertheless necessary to keep in mind that causality between variables cannot be tested with the current dataset as well as it optimally should. Only the association of variables at the given point of time can be analysed and a causal connection is tried to be deduced from the interaction of

variables. Fundamentally, the analysis here gives just hints about the proper relationship of theories and the “real life”.

### 9.3 Differences in rationalities as explanations of (dis)incentives to work

Through the history of the welfare state, a central part of criticism targeted towards it has been claims about the disincentive effects of the subsidy system on people's willingness to work. According to the interpretation of the welfare state typical to these critiques, the type of society has itself created part of its problems by causing too strong “dependency” on welfare subsidies. The welfare system itself is assumed to create strong disincentives to work especially in certain low-income groups. Even such authorities as OECD have suggested that a high rate of unemployment may be caused by a too high rate of unemployment benefits (see Dropping et al 1999).

During recent years, some empirical support has also been found in the phenomenon. Atkinson et al studied the topic comparatively in the late 1980s, finding that there is a connection between unemployment benefit level and unemployment level, although the institutional differences between the studied countries (Denmark, Sweden, West-Germany & UK) were significant (Atkinson - Mogensen 1993). A recent empirical study from Denmark (Pedersen - Smith 2002) suggests that the level of unemployment benefits effects the tendency to be unemployed, although the majority of the population still chooses to work in this kind of situation. Generally speaking, the harm followed from unemployment is considered to be so great that it becomes very hard to rationalise unemployment with possible economic utilities related to it if compared to the other labour market-related statuses (see Whelan - McGinnity 2000).

Often the positive incentives to remain unemployed have been considered as an explanation for various empirical findings indicating that the probability of two adults in the household to be unemployed is higher than it would be otherwise – meaning that unemployment concentrates on couples (see Payne 1987; Ultee et al 1988; Davies et al 1994; Halvorsen 1999). Another recent study comparing this phenomenon in Britain and West-Germany (McGinnity 2002), suggested that the effect of disincentives to work in Britain was observable especially as a lower probability of women in the households to enter employment when their husbands become unemployed. This was assumed to be at least partially explained by the means-tested welfare benefit system in the country. However, similar results have also been found in a Finnish study (Virmasalo 2002), although the Finnish beneficiary system is mainly based on individual income-tested benefits.

While the “free-riding” problems connected to welfare systems are underlined in research, there has not been so much interest on the other side of the same coin, namely why some persons nevertheless choose to work, even if they did economically better without. Table 34 from *Finland 1999* -dataset exemplifies the phenomenon. The table presents the mean of income (in Euro and in FIM), standardised with the (older) OECD equivalence scale, for the persons in the families in which none of the adults are working (group 1); for the persons in the families depending on work or capital income and themselves currently working but being in the lowest income quintile (group 2) and other persons who are currently working (group 3). Persons over 62 years old, old age pensioners<sup>72</sup>, persons living with their parents and students are excluded from the figures of the table. Also, in order to avoid the problems of distinction between dual-earner and single-earner families, the persons included in both groups of those dependent of work income are working themselves. The table shows that the persons working but being in the lowest income quintile actually have a lower mean income than “jobless” depending on the welfare subsidies.

Table 34. Mean of income and it's standard error in Finland 1999 data for (1) persons in families in which none of the adults work (“jobless households”), (2) persons who are currently working but remain in the lowest income quintile (“working poor”) and (3) other persons, who are currently working. Income standardised with (older) OECD equivalence scale. Persons over 62 years old, old age pensioners, students and persons living with their parents are excluded.

	<i>N</i>	<i>Mean</i>	<i>Std. Error</i>
<b><i>Persons in jobless households</i></b>	205	606.89 € (3 608.40 FIM)	41.29 € (245.50 FIM)
<b><i>Working poor</i></b>	62	457.39 € (2 719.52 FIM)	20.55 € (122.18 FIM)
<b><i>Other working</i></b>	901	1 137.04 € (6 760.53 FIM)	18.57 € (110.41 FIM)
<b><i>Total</i></b>	1168	1 007.91 € (5 992.76 FIM)	17.54 € (104.29 FIM)

What explains why people end up in the different groups presented in Table 34? It can be argued that if incentive and disincentive effects play the role they are often assumed to, one should be able to explain the differentiation of these

<sup>72</sup>As it can be remembered from Chapter 4, the usual age limit for old age pension in Finland is 63 years in the public sector and 65 in the private sector. However, there are also some ways to exit to old age pension younger than that, although this usually means that the pension will be reduced.

groups with the differences in rationalities. Are the ones working with low-income, the “working poor”, more clearly value-rational, valuing working so much more positively than being without it that they choose to work even if they were better off without? Or do they just pay more attention to other risks connected to being outside normal employment, being thus more risk-aware than other persons? Are the persons in the households without work or capital income more clearly instrumentally-oriented, concerned about proper means in relation to desired economic outcomes, and choosing not to work because of sufficient income even without spending their time working? In this last part of the chapter the groups of Table 34 are studied as “*incentive groups*” and analysed from the point of view of rational behaviour by using the suggested version of RAT with empirically measured rationality variables.

### 9.3.1 The explanations of incentive effects

There are at least three groups of explanations attached to incentive and disincentive effects: utility-related explanations (including simple, risk- and expectation-related utilitarian explanations), cultural explanations (including under- or macho culture-related explanations) and structural explanations.

According to *simple utilitarian* interpretation, it could be assumed that beneficiary systems are *too generous* in welfare states and do not *encourage* persons without jobs to work, because they already have a sufficiently high income level because of welfare benefits (see Pedersen - Smith 2002). This is approximately the point of view that the above was connected to OECD (see also Dropping et al 1999; O'Connell 2002). According to this hypothesis, those persons, who nevertheless choose to work with low salary income, are assumed to be less economically rational than the other groups.

If there is a strong structural explanation of unemployment (= lack of jobs) – like it has been the case in Finland since the early nineties, if the general unemployment rate is considered – becoming unemployed cannot be easily considered as a voluntary process. In this kind of situation, if the simple utilitarian explanation applies, persons who are employed after being unemployed are less likely to be economically rational than those who remain unemployed. This is because persons applying instrumental rationality in the pursuit of economic utilities are assumed to prefer the straight economic rewards related to unemployment over those gained from low-paid work. This should especially be the case if the social costs of unemployment are relatively low because many others are also unemployed.

Thus, the following hypothesis may be proposed:

**Hypothesis A<sub>1</sub> (The simple utilitarian hypothesis):** *In the group of persons having experiences of unemployment working poor should be less likely to be instrumentally rational than the persons in jobless families.*

Another type of utility-related explanation would be one that is related to risk-orientation. According to these explanations, working for a low-income is preferred to being unemployed because of the high risks associated with unemployment (for example, the risk of poverty, see DiPrete 2002). This kind of explanation of working poor -phenomenon is possible against the background of the results of Whelan & McGinnity (2000). With rationality variables risk-orientation may be observed in two forms, either in the form of *risk-avoidance* or *uncertainty reduction*. If risk-avoidance would be a correct hypothesis as an explanation of the distinction of the groups of Table 34, persons with low-income from work should be more clearly risk-aware, and thus more likely to be risk-oriented when compared to the jobless group. At least this phenomenon should be observable in the case of the persons who have previously been unemployed, but are currently employed. The uncertainty reduction principle may be considered as being similar to the one proposed by Goldthorpe (2000) in the case of social mobility and to uncertainty-reduction principle proposed by Friedman et al (1994) in the case of the decisions of having children. It can be argued that the working poor choose to work for low-income in order to reduce uncertainty in life (see DiPrete 2002), in a similar manner as it was argued that having children can be a way of uncertainty reduction (see above; Friedman et al 1994). If the explanation applies, the working poor should be found to be less likely risk-oriented than the others. This difference should be especially evident if persons have experiences of unemployment, and should basically be observed in relation to all the other incentive groups.

The following two hypotheses may be proposed:

**Hypothesis A<sub>2.1</sub> (risk-avoidance hypothesis):** *In the group of persons having experiences of unemployment, the working poor are more clearly risk-oriented than jobless. The will to avoid risks motivates having low-income work.*

**Hypothesis A<sub>2.2</sub> (uncertainty reduction hypothesis):** *In the group of persons having experiences of unemployment, the working poor are less risk-oriented than other groups. By having low-income work they can reduce uncertainty in life.*

The third tested type of utilitarian explanation is based on the expected utilities. It may be argued that people are willing to accept low-paid work because they count on the future expected outcomes of work, whether that is

better position, better salary, etc (see DiPrete 2002; Le Grand - Tåhlin 2002; Goldthorpe 2000).<sup>73</sup> This kind of explanation should be considered as having an importance if the group of those who still have possibilities of career mobility at least in the group of the working poor are observed as being more likely means- or outcome-oriented than the jobless groups. The hypothesis followed from these assumptions is:

***Hypothesis A<sub>3</sub> (expected utilities hypothesis):*** *In the group of persons being likely to have possibilities of career mobility, the working poor are more clearly instrumentally rational than the other groups. This is because low-income work has other instrumental motivation than the amount of current earnings.*

The second main branch of the explanations is cultural explanations. Cultural explanations can have various forms. For example, they may refer to the underlining of a certain kind of underculture of unemployment, according to which being unemployed is normatively accepted as one type of life-course choice. A classical example of this kind of explanation is the one applied to explain the existence of “*poverty culture*” (see Coser 1965) or the formation of “*underclass*” especially in an urban context (see Wilson 1991, Wilson - Aponte 1985; Marks 1991; Buckingham 1999, see also Airio – Niemelä 2002). The underculture explanation may also apply to the selection to the working poor – the working poor evaluate work as such so highly that they are willing to work even with very low compensation. Another type of similar cultural explanation is the “*macho-effect*” explanation, according to which women are forced to leave their jobs because it is embarrassing for husbands in families where women are the breadwinners (Halvorsen 1999; Barrère-Maurisson et al 1985; Cooke 1987; Irwin - Morris 1993; Härkönen 2003).

What seems to combine all of the cultural explanations is that they underline the existence of a strong normative or value base that hinders or promotes people getting a job. For example, if the unemployed underculture theory would be correct, this should be observed as a stronger probability of value-oriented action among the jobless having experiences of unemployment, at least when compared to the working poor with unemployment experiences. Similarly, if the macho-effect explanation holds, value-based action should be more likely among men especially in the families in which two adults are unemployed or without a job. The theories lead to three hypotheses:

***Hypothesis B<sub>1</sub> (unemployed underculture explanation):*** *Jobless may be separated from those who work but have experiences of unemployment from their strong value-orientation.*

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<sup>73</sup>The explanation can also be seen in connection to Adam Smith's classical idea considering rational actors as “*impartial spectators*” (see Smith [1759]1974, 110-113).

**Hypothesis B<sub>2</sub> (working poor underculture explanation):** Working poor may be separated from the others by their strong value-orientation. They have strong values promoting the willingness to work, despite the level of economic compensation.

**Hypothesis B<sub>3</sub> (the macho-effect explanation):** Jobless men having experiences of unemployment are over-represented among the value-oriented if compared to women or other groups having experiences of unemployment.

Finally, structural explanations can also be considered. These explanations can be differentiated from the previous types by the fact that while the previous underline the *voluntary* aspect of incentive effects, the structural type underlines deterministically behaviourist explanation of rational behaviour in relation to incentive effects. At the core of this type of explanation is the assumption that the rationality of persons does not vary too much on the different levels of structural variables. Situational mechanisms overrule individual variation (see Hedström - Swedberg 1996; Räsänen 2003). For example, if there were no differences in rationality of action according to incentive group and unemployment experiences, this would suggest that a labour market-related explanation is more correct. Thus, as an extreme case, a structural explanation can be seen as parallel to any rationality-related explanations of incentive effects. For example, if utility-related explanations apply, this means that structural reasoning is not sufficient as an explanation of people ending up in the incentive groups of Table 34.

However, the structural explanation does not necessarily assume that there are no differences in rationality between different groups. The structural explanation can be considered as valid also if there are differences in the rationality of groups, but these differences fail to provide the cause for a person ending up in a certain incentive group. Thereby the individual-level mechanism in question is only an adaptive one (see Elster 1996). This would mean that the question is merely about *rationalisation* of behaviour that is possible in a certain environmental context rather than about rational voluntary choice made more or less freely. The evidence supporting the existence of the incentive effects (for example, Atkinson - Mogensen 1993; Pedersen - Smith 2002; also Ervasti 2003) do not rule out this option. In attitude and public opinion research in general this kind of explanation is usually applied to explain attitudinal differences (see Gallie - Vogler 1994; Blomberg - Kroll 1999; Forma 1999; Forma - Kangas 1999.)

Thereby, the structural explanation can be presented in the form of two hypotheses:

**Hypothesis C<sub>1</sub> (plain structural hypothesis):** *The level of rationality does not vary on the different levels of interaction between incentive groups and third factors.*

**Hypothesis C<sub>2</sub> (rationalisation hypothesis):** *The connections to be found between rationality variables, incentive groups and third factors does not support the assumption about the causal impact of a rationality type to the selection into a certain incentive group.*

It may be noted that the former structural hypothesis is more clearly a “zero-hypothesis” for the whole test. The latter is a “meta-hypothesis”, and its validity can be interpreted only after other hypotheses are tested.

### 9.3.2 The analysis of explanations

All in all there are six variables that will be needed for the analysis. There are of course the rationality variables (*means-to-values* -orientation, *risks-to-outcomes* -orientation) and the *incentive group* variable (persons in jobless households, the working poor, other persons working). In addition to these, there are *unemployment experiences from last 5 years* -variable and a variable for *gender* (male, female). The *unemployment*-variable can have three levels, *no experiences of unemployment*, *has once*, or *has various*. In order to estimate the effects of career mobility expectations, a fourth variable is introduced, “*career-mobility age*”. According to the results of mobility studies, career mobility usually reaches its peak by the age of 35 years (see Jonsson - Mills 1993; Breen - Jonsson 1997; Erikson - Goldthorpe 1992, 285-286; Breen - Goldthorpe 2001). Here the respondents are split into two groups, those 40 years old or under and those over 40. The age of 40 was selected instead of 35 just in order to make sure that the limit is on the “safe” side – that as many as possible from those who still have career mobility prospects are included in the younger age group.

Because the groups of jobless couples and working poor are relatively small, analysing all six variables at same time is not possible because of too many subgroups with no cases at all. Thus, only the variables relevant for the analysis of the hypothesis in question will be applied in the analysis at the same time.

#### *Utility-related explanations*

The analysis begins from the test of utility-related assumptions. Two rationality variables, a variable for incentive groups and a variable concerning

unemployment experiences are needed in order to test the validity of the two first hypotheses.

Table 35 shows the percentages of incentive groups according to unemployment experiences during the last five years. It shows how both persons in jobless households and the working poor have more likely had these experiences than other persons working. Table 36 shows the frequencies of incentive groups according to rationality variables and unemployment experiences, as well as the odds of the rationality type in question if compared to the average odds of belonging to any other rationality groups in each incentive group – unemployment experiences -pairs. As the cell sizes vary extensively, also the odds show remarkable variation. The working poor with more than one unemployment experience show low probability of risk rationality. “Normal” workers with more than one unemployment experience are highly likely to be risk-rational. The probability of instrumental rationality is relatively low in jobless households unless they have only one experience of unemployment. This may be because unemployment is with the high probability their current status also. Also, the working poor with more than one experience of unemployment show low odds of instrumental rationality. The odds of axiological rationality are low in the two other groups of the working poor. However, the odds of it are high among the group of persons in jobless households. The odds of value rationality are high among persons in jobless households who nonetheless have no experiences of unemployment. Already the frequencies and odds show that Hypothesis C<sub>1</sub> is not supported.

Table 35. The percentages of incentive groups according to unemployment experiences during the last five years.

		<i>Incentive groups</i>			<i>Total</i>
		<i>Jobless households</i>	<i>Working poor</i>	<i>Others working</i>	
<i>Unemployment during last 5 years?</i>	<i>No</i>	4.9	4.5	90.6	100 %
	<i>Once</i>	14.1	9.3	76.7	100 %
	<i>More than once</i>	32.0	12.0	56.0	100 %
	<i>Total</i>	13.9	5.6	80.6	100 %

Table 36. The frequencies of incentive groups in rationality types according to unemployment experiences and odds of rationality type if compared to average odds of other types according to unemployment experiences and incentive groups.

		<i>Frequencies</i>			<i>Total</i>		<i>Odds</i>		
		<i>Jobless h.h.</i>	<i>Work. poor</i>	<i>Working</i>			<i>Jobless h.h.</i>	<i>Work. poor</i>	<i>Working</i>
<i>Means</i>	<i>Risk</i>	<i>No</i>	8	12	195	215	0.86	1.71	1.25
		<i>Once.</i>	11	6	62	79	0.66	1.20	1.66
		<i>More than once</i>	15	1	13	29	1.22	0.60	2.60
<i>Outcome</i>	<i>No</i>	<i>No</i>	5	11	201	217	0.48	1.50	1.30
		<i>Once.</i>	16	7	47	70	1.07	1.50	1.11
		<i>More than once</i>	9	1	5	15	0.63	0.60	0.65
<i>Values</i>	<i>Risk</i>	<i>No</i>	8	3	129	140	0.86	0.30	0.72
		<i>Once.</i>	20	2	39	61	1.46	0.32	0.87
		<i>More than once</i>	18	2	5	25	1.59	1.50	0.65
<i>Outcome</i>	<i>No</i>	<i>No</i>	15	7	139	161	2.14	0.81	0.79
		<i>Once.</i>	14	6	26	46	0.89	1.20	0.53
		<i>More than once</i>	10	2	5	17	0.71	1.50	0.65
<i>Total</i>			149	60	866	1075			

Combinations of rationality variables:

*Means*\**Risk* = *Risk* rationality

*Means*\**Outcome* = *Instrumental* rat.

*Values*\**Risks* = *Axiological* rationality

*Values*\**Outcome* = *Value* rationality

Let us now consider loglinear models for the testing of the hypotheses. The fit of the models can be compared in Table 37. Model 1 represents the *independence-model* assuming no association whatsoever between the modelled four variables. This would basically contradict all utility-related explanations. The model does not fit the data. Model 2 tests how much the controlling of “structural” interaction between unemployment and incentive variable already covers from the variation. The following topological parameterisation describes this interaction best:

(TInStr)	1	2	0	>No unempl.
	0	0	0	>Once
	0	2	1	>Twice or more
	<i>Jobless</i> <	<i>Working poor</i> <	<i>Working</i> <	

The columns refer to incentive groups, the rows to unemployment experiences. According to the model, it is most unlikely to be either in jobless households and have no experiences of unemployment or to be among “normal” workers and have two or more experiences of unemployment (parameter 1). It also unlikely, but not just as much as in previous groups, to be working poor and have no or more than one experience of unemployment (parameter 2).

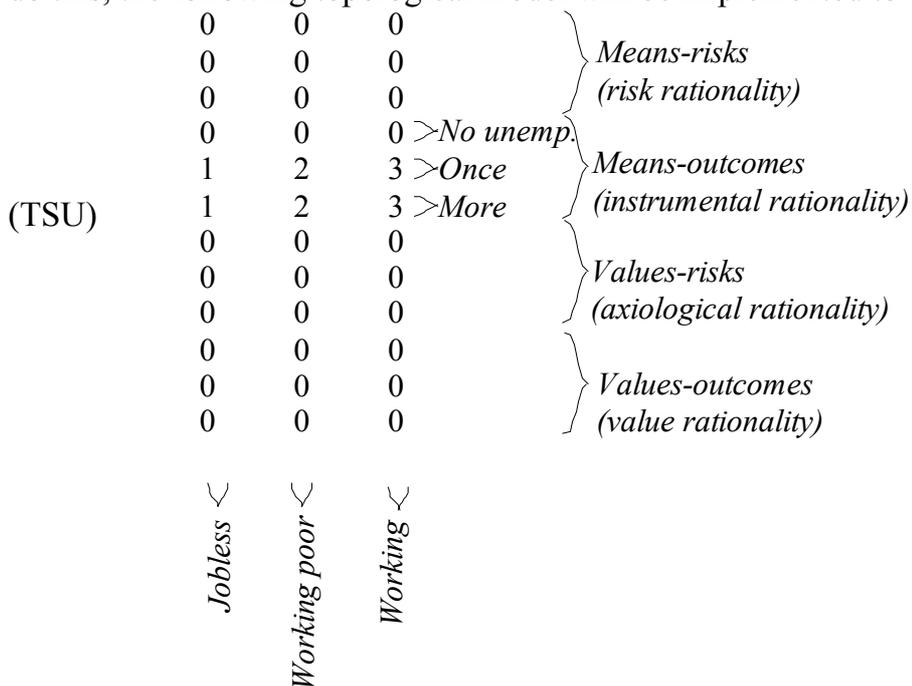
Table 37. Loglinear models for the connections of rationality variables, unemployment experiences and incentive groups.

<i>Model</i>	$L^2$	<i>p</i>	<i>d.f.</i>	$\Delta$
<b>1. Independence</b>	236.954	0.000	29	0.139
<b>2. Structural: <i>TInStr</i></b>	42.363	0.030	27	0.059
<b>3. Simple utilitarian model: <i>TInStr</i> + <i>TSU</i></b>	38.944	0.028	24	0.052
<b>4. Risk-orientation model: <i>TInStr</i> + <i>TInRiO</i></b>	32.490	0.115	24	0.049
<b>5. Underculture model: <i>TInStr</i>+ <i>TUnCu</i></b>	32.309	0.120	24	0.056

*TInStr, TSU, TInRiO, TUnCu = parameters according to design matrices*

Not surprisingly, the structural model shows a clear improvement if compared to the independence model. Parameter estimates are shown in Table 38. They show the anticipated connection between the variables.

Now the test of simple utilitarian hypothesis can be conducted. In order to do this, the following topological model will be implemented to Model 2:



The columns refer to incentive groups and each three lines to three unemployment groups in each subgroup of rationality type. The model assumes that the jobless subgroups (parameter 1) and the working poor who have experienced unemployment (parameter 2) can be distinguished from each other according to their probability of being instrumentally rational. With parameter 3 it can be estimated whether these two groups can also be separated from

Table 38. Parameter estimates for loglinear models between rationality types, unemployment experiences and incentive groups. Betas, standard errors, z-values and odds.

### 2. Structural model

<i>Parameters</i>	<i>TInStr</i>	
	<i>1</i>	<i>2</i>
<i>Beta</i>	-1.777	-0.919
<i>Std. Err.</i>	0.142	0.282
<i>Z-value</i>	-12.560	-3.265
<i>Odds</i>	0.169	0.399

### 3. Simple utilitarian model

<i>Parameters</i>	<i>TInStr</i>		<i>TSU</i>		
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>Beta</i>	-1.801	-0.894	-0.363	-0.077	-0.190
<i>Std. Err.</i>	0.147	0.298	0.234	0.407	0.172
<i>Z-value</i>	-12.287	-3.005	-1.552	-0.188	-1.102
<i>Odds</i>	0.165	0.409	0.695	0.926	0.827

### 4. Risk-orientation model

<i>Parameters</i>	<i>TInStr</i>		<i>TinRiO</i>		
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>Beta</i>	-1.800	-1.210	0.355	-0.295	0.405
<i>Std. Err.</i>	0.160	0.317	0.199	0.379	0.157
<i>Z-value</i>	-11.232	-3.822	1.785	-0.778	2.576
<i>Odds</i>	0.165	0.298	1.426	0.745	1.500

### 5. Underculture model

<i>Parameters</i>	<i>TInStr</i>		<i>TUnCu</i>		
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>Beta</i>	-1.590	-0.851	0.551	0.061	-0.154
<i>Std. Err.</i>	0.156	0.311	0.197	0.365	0.163
<i>Z-value</i>	-10.214	-2.740	2.792	0.166	-0.945
<i>Odds</i>	0.204	0.427	1.736	1.063	0.858

“normal” workers with unemployment experiences according to their instrumentality. If the simple utilitarian hypothesis would apply, it should be expected that parameter 2 should be significantly lower than parameter 1 and maybe also parameter 3.

The fit statistics for the simple utilitarian model show that the hypothesis it is referring to is not supported. The chi-squared is improved only 3.418 with 3 degrees of freedom lost, if compared to the structural model. Table 38 shows the parameter estimates of Model 3. They show no statistically significant difference between any of the groups.

Next the two *risk-orientation* -related hypotheses can be tested. In order to do this, the following topological model for the interaction of *risks-to-outcomes* -orientation, unemployment experiences and incentive groups needs to be tested:

(TInRiO)	0	0	0	>No unemp.	}	<i>Risk-orientation</i>
	1	2	3	>Once		
	1	2	3	>More		
	0	0	0		}	<i>Outcome-orientation</i>
	0	0	0			
	0	0	0			
	∨	∨	∨			
	<i>Jobless</i>	<i>Working poor</i>	<i>Working</i>			

The design matrix tests the assumption that the incentive groups having experiences of unemployment can be separated from each other according to the probability of risk-orientation. Risk-avoidance hypothesis assumes that the working poor (parameter 2) are more likely to be risk-oriented than jobless (parameter 1) or the other working persons (parameter 3), whereas the uncertainty reduction hypothesis assumes the exact opposite – that the working poor are less risk-oriented. The design matrix is added to the structural model in Model 4.

Model 4 improves the fit significantly (chi<sup>2</sup> improved by 9.873 with 3 d.f.) if compared to the structural model. The parameters show that the model supports the uncertainty reduction hypothesis – the working poor are less likely to be risk-oriented than the other two groups. Controlling risk-orientation also has an impact on the “structural” parameters of the TInStr -design matrix. Adding the new parameters lowers the probability of the working poor either not having experiences of unemployment or have several of them. Thus, it may be argued that in these groups, risk-orientation increases the probability of having low-paid work.

Table 39. Percentages of people in different incentive groups according to mobility age (40 or under better chances, over worse).

		<i>Incentive groups</i>			
		<i>Jobless h.h.</i>	<i>Work. poor</i>	<i>Working</i>	<i>Total</i>
<i>Mobility age</i>	$\leq 40$	8.7	7.4	83.8	100 %
	$> 40$	21.1	4.0	74.9	100 %
<i>Total</i>		16.2	5.6	80.6	100 %

Table 40. Frequencies of incentive groups according to mobility age and types of rationality, and odds of rationality type if compared to average odds of other rationality types according to mobility age and incentive group.

		<i>Frequencies</i>				<i>Odds</i>		
		<i>Jobless h.h.</i>	<i>Work. poor</i>	<i>Working</i>	<i>Total</i>	<i>Jobless h.h.</i>	<i>Work. poor</i>	<i>Working</i>
<i>Means</i>	<i>Risks</i> $\leq 40$	8	11	145	164	0.73	1.38	1.75
	$> 40$	29	8	125	162	0.84	1.41	1.08
	<i>Outcomes</i> $\leq 40$	9	9	107	125	0.84	1.04	1.12
	$> 40$	28	10	146	184	0.80	2.00	1.34
<i>Values</i>	<i>Risks</i> $\leq 40$	17	6	76	99	2.13	0.62	0.72
	$> 40$	35	1	97	133	1.07	0.13	0.78
	<i>Outcomes</i> $\leq 40$	7	9	66	82	0.62	1.04	0.60
	$> 40$	41	6	104	151	1.34	0.95	0.85
		174	60	866	1100			

*Combinations of rationality variables:*

*Means\*Risk = Risk rationality*

*Means\*Outcome = Instrumental rat.*

*Values\*Risks = Axiological rationality*

*Values\*Outcome = Value rationality*

Expected utilities model is tested next. In order to do this, the *unemployment experiences* -variable is replaced with a variable referring to mobility chances. The percentages of the persons in different incentive groups according to whether they are over forty years old are shown in Table 39. The table shows that the probability of being in a jobless household is higher among persons over 40 years of age, whereas the probability of being in the group of working poor or normally employed are in this group lower than if compared to persons 40 years old or under. This connection was also anticipated by the expected utilities hypothesis. However, it is not know whether these diffe-

rences are due to the differences in access to work in the two age groups, or whether it truly is a question about motivational differences.

Table 40 shows the frequencies of the incentive groups in the different subgroups of mobility age as well as the odds of each rationality type if compared to the average odds of other rationality types in different combinations of incentive groups and age. The odds show that the probability of risk rationality is high in the group of those who are “normally” employed but over 40. The odds of axiological rationality are low in both groups of working poor, but especially among persons over 40 years. The probability of this type of rationality is high among the jobless 40 years old or under, and the odds of value rationality in the same group, low. Thus, there seems to be some differences between the groups also according to rationality type. However, it can also be seen that it is not probable that the models testing the probability of instrumental rationality would be very successful.

Structural interaction between mobility and incentive groups needs to be taken into account first. This can be done by including the interaction term between the age group variable and the incentive group (MI-term). Then, the following parameterisation needs to be applied in order to test the expected utilities hypothesis:

	0	0	0		}	<i>Means-risks</i>	
	0	0	0		}	<i>(risk rationality)</i>	
	1	2	3	>	≤ 40	}	<i>Means-outcomes</i>
(TExU)	0	0	0	>	> 40	}	<i>(instrumental rationality)</i>
	0	0	0			}	<i>Values-risks</i>
	0	0	0			}	<i>(axiological rationality)</i>
	0	0	0			}	<i>Values-outcomes</i>
	0	0	0			}	<i>(value rationality)</i>
	<i>Jobless</i>	<i>Working poor</i>	<i>Working</i>				

Parameter 1 tests the probability of being instrumentally rational among the persons in jobless households, parameter 2 the probability among the working poor and parameter 3 among the “normally” employed. Table 41 shows model fit statistics for the independence model, with MI interaction term only, and for the expected utilities model, including interaction term MI and the three parameters of the TExU -design matrix. It can be seen that the structural model improves model fit statistically significantly, but the expected utilities

model does not. Thus, the expected utilities hypothesis is not supported by the current analysis.<sup>74</sup>

Table 41. Loglinear models for mobility age, means-to-values rationality, unemployment experiences and incentive groups.

<i>Model</i>	<i>L<sup>2</sup></i>	<i>p</i>	<i>d.f.</i>	<i>Δ</i>
<b>1. Independence</b>	79.312	0.000	18	0.081
<b>2. Structural: TInStr+MI</b>	42.749	0.000	16	0.074
<b>3. Expected utilities: TInStr + MI + TExU</b>	41.064	0.000	13	0.068

*TInStr, TExU = parameters according to design matrices*  
*MI = interaction term between mobility age and incentive groups*

*Cultural explanations*

Let us now consider the two first culture-related explanations. In order to test both Hypotheses B<sub>1</sub> and B<sub>2</sub>, it is possible to apply the frequency table already applied in the analysis of hypotheses A<sub>1-2</sub>. The design matrix that is needed in order to model both unemployed and working poor underculture hypotheses refers to interaction between *means-to-values* -orientation, unemployment and incentive group variables:

(TUnCu)	0	0	0	}	<i>Means-orientation</i>
	0	0	0		
	0	0	0		
	0	0	0 > No unemp.	}	<i>Values-orientation</i>
	1	2	3 > Once		
	1	2	3 > More		
∨	∨	∨			
<i>Jobless</i>	<i>Working poor</i>	<i>Working</i>			

Parameter 1 will refer to the persons in jobless households having experiences of unemployment, parameter 2 to the working poor with unemployment experiences and parameter 3 to others working and having unemployment experiences. Table 37 shows the fit statistics of the model. It can be compared to

<sup>74</sup>The result does not change even if the lower age-limit of 35 years old is used.

the structural model already reported in the same table. The model fit is improved very significantly if compared to the structural model ( $\chi^2$  improved by 10.054 with 3 d.f.). Table 38 shows also the parameters for the underculture model. The results are better in line with the unemployed underculture hypothesis – controlling the higher value-orientation level of the jobless lowers structural differences between the groups. However, it can also be seen that controlling the effect of value-orientation has a fairly modest impact on the parameters of the TInStr -design matrix, especially given the effect sizes. The odds of parameters 1 and 2 from the structural model are levelled only by one sixth when the effect is taken into account, still referring to a very strong structural explanation of selection to incentive groups. It may be argued that strong value-orientation is more clearly an effect of structural causes than a cause of them, although value-orientation may increase the odds of remaining unemployed for persons in jobless households.

Finally, only the macho-effect model needs to be tested. In order to do this, four variables need to be modelled: *means-to-values -orientation*, *gender*, *unemployment experiences* and *incentive groups*. Table 42 shows the percentages of men and women in incentive groups according to unemployment experiences. The differences between men and women seem to be rather small, although men are slightly over-represented among persons who have been unemployed more than once but are currently normally employed. This is reflected by a lower probability of men in the same unemployment group of belonging to the group of working poor. This is probably because of women's lower average income level, although presumably some other gender-inequality -related mechanisms would be needed in order to explain the gender-related differences between the employed groups. However, in the group of the jobless, gender differences seem to be small, although women seem to have a higher probability of having various experiences of unemployment in that group.

Table 43 shows the frequencies of incentive groups in each rationality group according to unemployment experiences and gender, as well as the odds of means- and value-orientation in each combination between incentive group, unemployment experiences and gender. It seems to be that value-orientation is indeed a more likely type of rationality among persons in jobless households. However, among men, the odds seems to be stronger in the groups of persons who themselves have not been unemployed during the last five years, and not among persons with unemployment experiences. Among the women, there is a higher probability of value-orientation in each group of persons in jobless households.

Table 42. Percentages of men and women in incentive groups according to unemployment experiences.

		<i>Incentive groups</i>			<i>Total</i>
		<i>Jobless h.h.</i>	<i>Working poor</i>	<i>Working</i>	
<i>Men</i>	<i>no unempl.</i>	4.9	5.8	89.3	100 %
	<i>once</i>	24.8	11.5	63.7	100 %
	<i>more</i>	56.3	-	43.8	100 %
<i>Women</i>	<i>no unempl.</i>	4.7	3.3	91.9	100 %
	<i>once</i>	22.9	5.7	71.4	100 %
	<i>more</i>	62.7	11.8	25.5	100 %
		13.7 %	5.7 %	80.6 %	

Table 43. Frequencies of incentive group in the subgroups of gender and unemployment experiences according to means-to-values rationality, and odds orientation of rationality if compared to average odds of other types according to gender and unemployment experiences.

			<i>Incentive groups</i>			<i>Total</i>	<i>Odds</i>		
			<i>Jobless h.h.</i>	<i>Work poor</i>	<i>Wor-king</i>		<i>Jobless h.h.</i>	<i>Work poor</i>	<i>Wor-king</i>
<i>Means</i>	<i>Men</i>	<i>no unempl.</i>	6	14	200	220	0.50	2.00	1.60
		<i>once</i>	14	11	41	66	1.00	5.50	1.32
		<i>more</i>	8	0	10	18	0.80	-	2.50
<i>Wo-men</i>	<i>men</i>	<i>no unempl.</i>	7	9	188	204	0.70	3.00	1.32
		<i>once</i>	13	2	68	83	0.68	0.33	2.13
		<i>more</i>	14	2	8	24	0.78	0.50	1.60
<i>Values</i>	<i>Men</i>	<i>no unempl.</i>	12	7	125	144	2.00	0.50	0.63
		<i>once</i>	14	2	31	47	1.00	0.18	0.76
		<i>more</i>	10	0	4	14	1.25	-	0.40
<i>Wo-men</i>	<i>men</i>	<i>no unempl.</i>	10	3	142	155	1.43	0.33	0.76
		<i>once</i>	19	6	32	57	1.46	3.00	0.47
		<i>more</i>	18	4	5	27	1.29	2.00	0.63
			145	60	854	1059			

Table 44. Loglinear models for gender, means-to-values -orientation, unemployment experiences and incentive groups.

<i>Model</i>	$L^2$	$p$	<i>d.f.</i>	$\Delta$
<b>1. Independence model</b>	243.761	0.000	29	0.150
<b>2. Structural model: <i>TInStr</i> + <i>TGeStr</i></b>	43.934	0.011	25	0.061
<b>3. Macho-effect: <i>TInStr</i> + <i>TGeStr</i> + <i>TMaE</i></b>	34.362	0.033	21	0.047

*TInStr*, *TGeStr*, *TMaE* = parameters according to design matrices

The loglinear models for the analysis of the macho-effect are presented in Table 44. The first model is again the independence model, which does not provide adequate fit for the variables. The second model is tested as a “re-modified” structural model. The design matrix for unemployment experiences and incentive groups (*TInStr*) also applied earlier will provide the base for it. However, now it is extended in order to cover the additional effects caused by gender differences. That is why the following design matrix for different categories of gender, unemployment experiences and incentive group is added to the original structural model:

(TGeStr)	0	1	0	> No unemp.	} Men
	0	1	0	> Once	
	0	0	0	> More	
	0	0	0	> No unemp.	} Women
	0	0	2	> Once	
	2	2	0	> More	
	Jobless	Working poor	Working		

The design matrix is based on the differences that can be seen in Table 42. It assumes that men have a higher probability of being in the group of working poor than women if they have not been unemployed or have been only once. This is indicated by parameter 1. Women, on the other hand have a higher probability than men of being in jobless households or being working poor if they have been unemployed more than once. They also have a higher probability than men of having one experience of unemployment if they are currently working. The structural model seems to improve the model fit significantly.

The macho-effect can now be tested by including the following parameterisation in the analysis:

(TMaE)	0	0	0	}	<i>Means</i>		
	0	0	0				
	0	0	0				
	0	0	0				
	0	0	0				
	0	0	0	}	<i>Values</i>		
	0	0	0 > <i>No unemp.</i>			}	Men
	1	2	2 > <i>Once</i>				
	1	2	2 > <i>More</i>				
	0	0	0 > <i>No unemp.</i>			}	Women
	3	4	4 > <i>Once</i>				
	3	4	4 > <i>More</i>				
	{	{	{				
	<i>Jobless</i>	<i>Working poor</i>	<i>Working</i>				

The persons in jobless households with unemployment experiences will be referred to with its own parameter and both groups currently working with another parameter, separate parameters for both men and women. It should be expected that among the groups of men, the persons in jobless households should be more likely to be value-rational. Also, it should be expected that in order for the macho-effect to be a believable explanation of households to become fully jobless, men in jobless households should be more clearly value-oriented than women in the same incentive group.

The macho-effect model improves the model fit significantly (chi<sup>2</sup> by 9.572 with 4 d.f.). The parameter estimates are shown in Table 45. They show that the macho-effect hypothesis is not supported. The probability of men to be value-oriented if they have unemployment experiences seems to be lower among men in jobless households. However, the women in jobless households tend to be more likely value-oriented than women who are working but have experiences of unemployment. So there is a gender-related difference, but its connection to value-orientation is the opposite of what the macho-effect hypothesis supposes. Also, it can be argued that the value-orientation of women does not have an effect on their probability of being unemployed – the parameters of TInStr and TGeStr remain unaffected by the inclusion of the new parameters of the macho-effect model.

Table 45. Parameter estimates for the structural and macho-effect models of gender, unemployment experiences, means-to-values rationality and incentive groups. Betas, standard errors, z-values and odds.

### 2. Structural model

<i>Parameters</i>	<i>TInStr</i>		<i>TGeStr</i>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Beta</i>	-1.754	-0.980	0.568	0.270
<i>Std. Err.</i>	0.145	0.289	0.271	0.129
<i>Z-value</i>	-12.126	-3.392	2.100	2.088
<i>Odds</i>	0.173	0.375	1.765	1.309

### 3. Macho-effect model

<i>Parameters</i>	<i>TInStr</i>		<i>TGeStr</i>	
	<i>1</i>	<i>2</i>	<i>1</i>	<i>2</i>
<i>Beta</i>	-1.711	-0.960	0.571	0.183
<i>Std. Err.</i>	0.176	0.290	0.280	0.198
<i>Z-value</i>	-9.698	-3.311	2.041	0.922
<i>Odds</i>	0.181	0.383	1.769	1.200

<i>Parameters</i>	<i>TMaE</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>Beta</i>	-0.047	0.195	0.612	0.008
<i>Std. Err.</i>	0.261	0.246	0.242	0.265
<i>Z-value</i>	-0.181	0.795	2.528	0.029
<i>Odds</i>	0.954	1.216	1.845	1.008

#### 9.3.3 Structural determination, after all?

This far the results have shown that the uncertainty reduction principle, as well as the unemployed underculture hypothesis, achieves support from the analysis above. Thus, it seems to be that some support for the explanation of the utilitarian family as well as for one type of cultural explanation can be found.

From the utility-related explanation, simple utilitarian, risk-awareness and expected utilities hypotheses were not supported. The fact that the simple utilitarian model was not supported does not mean that there cannot be a connection between unemployment rate and level of unemployment benefits. The

lack of support for this model, however, casts reasonable doubts on the often-assumed causal connection between the phenomena. It cannot be assumed that lowering the unemployment benefit level would increase the employment rate by an equivalent rate. The fact that the expected utilities hypothesis was not supported was first a surprise. However, it may be that “working-poor” occupations are typically such that do not provide possibilities for career mobility (for example, telephone marketing, cleaning, etc.) in the first place.

From the cultural models, the working poor underculture as well as macho-effect hypotheses remained unsupported. Although in the latter case this was not surprising in Finland because the employment rate of women has been exceptionally high after the Second World War, the observed phenomenon in relation to value-oriented women quite certainly was one and requires further studying in the future.

Finally, the structural effects also need to be considered. The analysis of both utilitarian and underculture explanations showed that although there was a connection between rationality variables and incentive groups, structural explanations provide stronger explanations. The following may thus also be considered as a concluding remark from the current analysis: it would be more correct to assume rationality as something reflecting on the possible structural positions, and also changing rather easily when the structural position also changes in relation to the expectations related to the outcomes of being in the position in question, rather than to assume that the differences in rational behaviour are able to orchestrate to which incentive groups people belong to. The way action is rationalised, however, extends the structural effects in some cases, as it was in the case of the connection of value-orientation and unemployed “underculture”.

However, the strong explanatory power of structural forces may only be due to a strong impact of the structural changes associated with the recession of the early nineties, and could thus be something that in “normal” conditions of welfare state would not be found. This was indicated in the conclusions of Atkinson & Mogensen (1993), according to which incentive effects may not be found during economic downturns. It can be that the impact of the economic downturn of the early nineties still played a significant role in Finland in the year 1999 by limiting the effect of (dis)incentives.

Also, it may be worth noting that because of the cross-sectional data, conclusions about the causality between incentives and disincentives, and the social positions assumed to be outcomes of the actions motivated by them, can at best be only suggestive. Here, like in the other examples of the analyses in this chapter, the results should be duplicated with longitudinal datasets in order to make sure about the causal connection.

#### 9.4 Conclusions from the application of RAT in the explanation of social phenomena

In the previous and current chapters, the two dichotomised dimensions of rationality have been used as the empirical content of the bridge hypothesis for testing the lower lever theoretical hypothesis of social action. The method itself seems to be fairly successful, because at least some explanations could be proven more likely to explain the studies on phenomena than others. This is more than only theory-driven examinations, without empirical content, are usually able to accomplish.

In the previous chapter, explanation of overindebtedness when observed through credit defaulters was tested against rationality variables. It turned out that, also according to the results of the analysis in that chapter, the structural explanation was the only one to be truly supported. Utility-related explanations as well as normative explanations seemed to fail, whereas structural explanation, underlining the adaptive behaviour of overindebted persons as an explanation of behavioural differences, seemed most likely to be valid. The findings were in line with the findings of Chapter 4, and as thus suggested that abstract rationality variables estimated the effects of the phenomena they were intended to. However, when the analysis was extended to the explanation of getting rid of overindebtedness, it was discovered that a lack of instrumental rationality hinders credit defaulters getting a job. To put it more simply, there is no instrumental motivation in working for the overindebted as much as for others.

As the first topic to be analysed in this chapter, it was discovered that social mobility is best explained by structural forces. However, it was also discovered that the service class secures its position against the risk of downward mobility by its ability to make choices according to the principles of instrumental rationality. In a similar manner, value-orientation, to some extent, reduces the probability of upward mobility in the working class. It was also discovered that the uncertainty reduction principle, as a principle of mobility strategy, is indeed applied to some extent. The results best supported the functionalist theory, but did not contradict with more complex subculture and risk-achievement theories either.

The rational decision of having children was the third topic to be tested. It turned out that with the Finnish dataset, only the connection of having children and class status could be established, while a similar connection between having children and educational level remained an unsupported assumption. The analysis supported the hypothesis that having children can be seen as a strategy of uncertainty reduction. No support was found for the assumption about the connection of human capital and having children. The test showed,

just like previous ones also, that the weakness of Becker's theory is in its inability to take immanent values into account. Value rationality in the service class extends the probability, in that class position, to have more than only one child.

Incentives and disincentives of working in low-paid jobs when compared to being in a family with none of the adults working and the group of other persons who are working were studied as the fourth issue. It was found that the uncertainty reduction principle seemed to be able to explain the "working poor" phenomenon to some extent, and that a higher probability of value-orientation of persons in jobless households may, to some extent, explain why all of the adults in the family are unemployed. However, this effect was modest if compared to structural effects.

A general conclusion from all of the analyses above is that in all cases, structural explanations were found to have considerable force if compared to rationality-based explanations. It may also be argued that in better off situations type of rationality can truly be applied and selected (like in the case of the immobile service class and instrumental rationality and value-rational decisions of having more than one child in the service class), whereas in the most disadvantaged situations, rational behaviour can be seen merely as adaptation to structural constraints and as seeking ways to limit the unwanted outcomes of unfavourable positions. It may be worth considering if the assumptions made in the research applying to RAT or RCT should be re-evaluated against this background, by more clearly including the arguments about the differences between the advantaged and disadvantaged positions and their almost opposite relationship to rationality. Also, the uncertainty reduction principle seems to be a more potential guiding principle for social selection making than the usual utilitarian explanations. Cultural agendas often applied may explain behaviour in some sub-groups, although substantial work needs to be done in order to find out the causal relations between cultural and structural explanations.

The applications seem to show the advantages of the applied version of rational action theory. Because it enables the comparison of social- (referred to often as structural) and individual-level explanations, it seems to be suitable for finding possible overindividualised as well as oversocialised explanations, if necessary. In practice, however, the individual- and social-levels of explanation are always in-written in sociological explanations. The applied rationality theory provides a common theoretical ground with an empirical application, which makes the particularistic explanations applying only another of these sides of the phenomenon merely a preliminary step for the evaluation of the possible types of explanations together or against each other.

All of the analyses performed in this chapter show that one of the major problems in the testing of individual-level explanations seems to be the lack of longitudinal datasets for value-change. The only way of getting longitudinal information here is to use some very limited retrospective questions. It may be seriously worth considering the collection of proper longitudinal panel datasets with individual-level information about the values and attitudes, as well as about the motives of choice-making in the future, if rationality theories are wished to be applied in the analysis of social phenomena to a wider extent. The fundamental evidence about the causality between structural- and the individual-level causes would be much easier to discover if only this kind of data could be applied.



***PART IV******CONCLUSIONS***



## 10 CONCLUSIONS

### 10.1 What has been done?

The aim of this thesis has been to find out how individual- and social-level explanations can be integrated by applying a believable theory of rational action with empirical content. The main aspects of what has been done are concluded below.

#### 10.1.1 The symptoms

The first research question was:

*- What are the fallacies of relationship of individual- and social-levels of explanation and how these show up when the causes of social phenomena are studied?*

The thesis began from the analysis of the fallacies of oversocialised and -individualised actors. First, the three types of fallacies related to too strong social-level (oversocialised) explanations were introduced. First came the fallacy of an oversocialised actor, originally presented as criticism by such authors as Lockwood (1956) and Wrong (1961) and targeted at the Parsonian sociology. The second fallacy of the same group was the fallacy of sociologism (Boudon [1979]1981), in relation to *homo sociologicus*. The latter was a term of Dahrendorf (1959), referring to a socially determined social actor. If action is characterised by structural determination, without any reference to social interaction and choice-making, this type of sociologism can be considered as a fallacy of sociological explanation. Societal overload (see Etzioni 1977) is a political counterpart of the previous fallacies. It refers to a situation in society during which the people expect an unrealistically amount of services and resources from the government and society.

Next, a second group of fallacies was proposed, namely the fallacies of overindividualised explanations. These fallacies refer to a situation in which individual-level explanations, referring to voluntary, sometimes also morally deviating types of action, is assumed to cause the existence of a social phenomenon. Examples of these phenomena are, for example, unemployment,

poverty, education and also overindebtedness in certain contexts. Riley (1963) approached similar problems by pointing out atomistic and psychologistic fallacies, but underlined the importance of methodological and analytical principles in order to avoid them. Granovetter's (1985) view of the undersocialised actor partially includes the same theoretical idea – that sometimes it is forgotten that all individual actors are embedded in a social context. However, it has not been explicated by either of these authors that individual-level explanations can also be considered as a priori true explanations.

The deep-rooted individualism of western societies can be considered as the main source of overindividualised explanations. This is characterised by individualist values, especially related to four ideals: supreme value of individual human beings, autonomy, privacy and self-development. These values are combined by the mediating “super-values” of equality and liberty. The values are closely related to the doctrines of individualism: political, economic, religious, ethical, epistemological and, finally, methodological. The last of the doctrines is the most important in respect of the existence of overindividualised explanations. It argues that all social phenomena can be explained with facts about individuals.

There is also a phenomenon that can actually be considered as a doctrine of its own, but is so important that it has to be underlined separately. That is a view of individualism as a process rather than a state. The arguments about the characteristics of the new and recent *zeitgeist* processes in modern societies, which eventually lead to “more individualised” society or culture, are in fact reflections of this doctrine. These assumptions can be considered as the signs of *individual overload*, which is an individual-level counterpart of societal overload. It refers to a situation in which individual actions are assumed to have an unrealistically high impact on the causes and the ways to get rid of common social problems according to widely accepted political belief.

The fallacies are connected to each other by the double paradigm of the social sciences, traceable back to the separation of the utilitarians and the positivist sociologists in the 18<sup>th</sup> and 19<sup>th</sup> centuries. For pragmatic reasons, “followers” of these “schools” in the social sciences started to underline different aspects in their studies of social phenomena – the utilitarians underlined individual causes related to utilities, whereas the positivists underlined the social causes. Later on, this distinction has been felt to be not only practical, but also fundamental or even epistemological – when one side is analysed, the other side has been considered as almost impossible to be concluded.

When social scientists have paid attention to the fallacies of the social-level explanations during recent decades, the double paradigm has created a mechanism called *the seesaw-effect*. This refers to a situation in which the fallacies of individual-levels of explanation are not considered as problematic because

it has been considered as sufficient to consider only social-level fallacies. This makes individual-level explanations to be seen as if they would be accepted as *a priori* true. The seesaw-effect occurs also in a situation in which individual voluntary causes are considered to have an *obvious* connection as a cause of the phenomenon in question, but the analysis is mainly accomplished by applying social-level data only. Due to the “obviousness”, which is strengthened by the individualism of modern societies, individual causes are nevertheless assumed to have an impact on the phenomenon. Basically, the seesaw-effect could also follow from the parallel situation, in which the dangers of individual-level fallacies are taken into account but social explanations are accepted as *a priori*.

Overindebtedness was presented as an example of social phenomena on which the seesaw-effect seems to have an impact. The available studies (at least in Finland) have been limited to the effects of the social causes of overindebtedness. Overindebtedness has been connected to, for example, unemployment, divorce and low education. However, in the context of expertise of the credit counsellor's and law drafting, as well as probably also on the occasions in which it has been seen as benefiting according to populist or economical motives, individual-level explanations are occasionally considered as valid causes. In these cases, it has been argued that the overindebted have been taking too big loans or too much credit or that they have consumed too much in relation to their income. Overindebtedness is seen as an outcome of active, voluntary behaviour, and it also has implicit moral element judging that the overindebted have behaved irresponsibly or unstably. This kind of individual-level explanation is called activity hypothesis. When activity hypothesis is applied, it has been accepted as *a priori* true; there is no research evidence backing up the assumption, nor tests that would contradict its validity.

The analysis of the activity thesis in Chapter 4 applies the suggested model for the test of the causes of overindebtedness. The model includes both individual and social causes as necessary parts of the test. Individual-level explanations were included in the models by applying attitude variables in order to measure the level of risk-sensitiveness, loan-scepticism and willingness to over-consumption. The analysis shows that low-income, separation or divorce, widowhood, having children, especially as a single parent, being unemployed and further, having also an unemployed spouse, low education, and an age between 31 to 40 years, can be seen as the social-level (or structural) causes of overindebtedness, if analysed through credit defaulting. There was a difference according to the individual-level variables also between the overindebted and the others, but this was only observed as a stronger probability of perceiving risks in economic behaviour and scepticism towards the possibility to benefit from having loan or credit among the credit-defaulters. Thus, unless

the overindebted have changed their behaviour to the exact opposite than what it has been before becoming overindebted, it can only be concluded that the overindebted seem to have “learned their lesson” well. Thereby the activity hypothesis was not supported by the current analysis.

The results were not surprising because it is well known that the most important single reason for overindebtedness in Finland has been the recession of the early nineties. It may be that this massive downturn of economy was still so close at the time of the gathering of the data that its effects overruled the effects of the activity hypothesis.

### 10.1.2 The prescription against the fallacies

The second research question was:

*- How social- and individual-level fallacies could be avoided?*

The analysis in Chapter 4 showed that it was a rather easy task to include individual-level estimates in the test of the causes of overindebtedness. A similar method, familiar to most of sociologists as elaboration, would probably also apply to other topics. However, it was felt that a more general-level theory integrating individual and social causes would be more benefiting – in fact, the test of the causes of overindebtedness involved theory only minimally.

The solution to both fallacies of overindividualised and socialised explanations has often been argued to be found from the application of rational choice theories in the social sciences. The unrealism of these theories has been considered to be their general problem; social behaviour is often assumed to be possible to be reduced to a single principle of aspiring utilities, or even worse, only to the principle of the maximisation of economic utilities. However, theories of rational choice vary to the extent of how much they allow social phenomena to be a reference point of action. A version suitable for sociology can be found from the ones having more social reference.

Based on the critique targeted at John H. Goldthorpe’s version of rational action theory, RAT, it was assumed that a rationality theory suitable for sociology should have the possibility to have multiple ideal types, just as Max Weber’s classical theory assumed. This was because it was felt to be important to be able to handle rationality of behaviour as a collective property. This would require rationality be allowed to have variation in order to make it possible to compare groups and individuals according to it. However, it was argued that one might need to consider also more ideal types than just the two suggested by Weber. Theoretically, it was first assumed that at least three ideal types should be assumed; value and instrumental rationality, suggested by

Weber, and also risk rationality, suggested by Ulrich Beck. This assumption meant that differentiating aspects between the ideal types of rationality were value-, means- and outcome-orientation, but also risk-awareness.

The optimal amount of types of rational behaviour was tested empirically with multidimensional scaling of *Finland 1999* -dataset. According to this analysis, the variation of rationality was found to be outlined best as having two dimensions, that from means- to value-orientation, and that of risks-awareness- to outcome-orientation. Means-orientation refers to that action is mostly motivated by the selection of the best means of behaviour. It can be seen as opposite to value-orientation, which refers to action primarily motivated by the values directed at the selection of means. Risks-awareness refers to the situation in which action cannot be seen as too strongly attached to its possible outcomes, as the future itself is seen as uncertain and that knowledge, in a strong sense, is not even possible, and that there is only less infinite surface information available. Outcome-orientation can be seen as opposite to this. It refers that action is targeted at and tied closely to having the desired outcomes.

Despite the preliminary assumption about three ideal types of rational action, ideal types were found to be best described with four possible combinations of behaviour according to the combinations of the ends of the ideal dimensions. The ideal type of instrumentality is seen as the combination of means-and outcome-orientation, value rationality as the combination of value- and outcome-orientation; axiological rationality as the combination of risk-awareness and value-orientation; and finally risk rationality as the combination of risk-awareness and means-orientation. This way of defining the ideal types works also best in the spirit of Weber's original idea of them; the pure types of rational behaviour are rare or even non-existing. Although it is possible to outline the dimensions of rationality, it is still not the same as to argue that it is possible to find a person who is, for example, fully instrumentally rational in every decision. For the same reasons it would be very dubious to propose an individual-level "rationality-test" similar to tests of intelligence in psychology.

### 10.1.3 The cure of the fallacies

The third research question was:

*- How the developed more accurate rational choice theory can be applied in the explanation of social phenomena, and how suitable it will be for this task?*

This was studied in the third part of the thesis in which the suggested version of RAT was applied in the explanation of social phenomena. The analysis of Chapter 7 concerned the connection of the typical background variables to rationality types. Although most of the variables had statistically significant connections to the ideal types, the amount of variation between the ideal types that was possible to explain with the set of typical background variables was fairly small. This supported the argument that an *ad hoc* application of this version of the theory cannot be justified, although in some occasions it seems to be suggested or at least considered as advantageous. On the contrary, the results suggested that one should be very careful when making assumptions about rationality and its impact and relation to social background variables.

In the final Chapters 8 and 9, the theory was applied to the explanation of social phenomena. Because of the empirical content derived from the test of dimensionality, it was possible to apply the suggested theory of rational action as a bridge theory in the analysis of various different assumptions, which often do not seem to be in evident connection with each other. This method can be considered as being advantageous for the testing of different assumptions, because no external theories are needed apart from the ones covering the rationality angles and the tested “lower level” theoretical assumptions.

The first social phenomenon to be tested was the re-analysis individual-level causes of overindebtedness. This test involved the inclusion of the structural effects in the form of the experiences of unemployment from the previous five years. Credit defaulters were again assumed to be the reference group of overindebtedness. The results were in line with the previous findings from Chapter 4 – individual-level causes were not found to be able to explain why persons had become overindebted. The way in which individual-level causes were operationalised with more abstract-level measures was to be considered as valid because of the similarity of the results to the previous.

After that, the analysis was also extended to the causes of getting rid of overindebtedness. It was discovered that the lack of possibilities for instrumentally motivated action by working hinders the overindebted to get rid of their debts, or to interpret other ways around, instrumental rationality hinders the overindebted who are unemployed to get a job. This is simply because the instrumental outcomes of work (=income) do not provide advantages to the overindebted, because income goes “into the pockets” of the debtors. The situation is problematic, because having work-income is the most obvious prerequisite of getting away from overindebtedness.

In the final chapter 9, the analysis was extended to other social phenomena. The first from these to be analysed was individual-level explanations of social mobility. It turned out that structural forces are the most crucial determinants of social mobility, just as functionalist theory seemed to assume. However,

subculture theory was also found to be supported – both the service and working class were found to apply rationality in a way that can be considered as a sign of a class-related strategy to maintain its class position. In the case of the service class, this referred to a strategy of avoiding downward mobility by instrumental rationality, whereas in the case of the working class, value rationality was found to lower the probability of upward mobility. The findings were also in line with the achievement-part of Goldthorpe's (2000) risk-achievement theory. Also, the risk-avoidance part of the theory found support – persons who had experienced downward mobility from the service class to the intermediate class but who nevertheless could reason the avoidance of the downward mobility to the less advantageous working class, was found to be more likely risk-oriented than the others.

Becker's (1981) theory about the rational decision of having children was studied next. Neither of the “Beckerian” hypotheses tested turned out to be supported. Having only one child was not associated with a higher probability of risk-sensitiveness and having children was not connected to a higher probability of value-orientation. On the contrary, it was discovered that having children in general reduced the probability of risk-orientation (and uncertainty). Although the class-based differences in value rationality were taken into account, a stronger probability of value-orientation was only observed in the service class having more than one child. The conclusion was similar to other studies – that Becker's theory takes badly into account the immanent values of having children.

The incentives and the disincentives to work, especially to work with very low-income under the social benefit level (the group who shared this status was referred to as “*the working poor*”), were studied as the final part of the chapter. The group was compared to the persons in the households without any working adults and to other persons working. It turned out that the “simple” utilitarian explanation, assuming that the jobless would be more instrumentally rational than the working poor was not supported. The working poor were found to be less likely risk-oriented, which was assumed to be a sign that they accept their low-income work because it nevertheless reduces uncertainty in life. The expected utilities related to low-paid work were not found to be connected to the *working poor* phenomenon. This was probably because very low-income occupations lack career prospects. It also seemed to be that value-orientation increases the probability of remaining unemployed, which can be seen as a reference to “*unemployed underculture*”. Furthermore, it turned out that the value-orientation of women was stronger if they were not employed, which suggested the opposite explanation than the often-mentioned “*macho-effect*” explanation assumes. The latter theory assumes that wives stay unemployed if their husbands are unemployed more likely than on average be-

cause of the strong value-orientation of men. However, in all of these cases, the structural explanations for people's belonging to each incentive group was found to have much stronger explanatory power than the voluntary causes.

The main conclusion from the results was that the version of RAT suggested in the thesis was fairly suitable for the analyses of the described phenomena. It also turned out that as a general case, structures determine the action of the persons in less advantageous situations, whereas only the persons in more advantageous positions can be found to be free to choose, as it was found in the case of mobility strategy and the value-orientation effecting the probability of having more than two children in the service class. As a general case, the principle of uncertainty reduction seems to have an effect on the choices made. This was not observed only in the case of reduction of economic uncertainty, but in general as the will to reduce the uncertainty of the future as something "unanticipated".

How does the suggested version of RAT actually tackle the problem of the relationship of the individual- and social-levels of explanation? The problem was worked around by providing a theory that could make it possible to include different types individual-levels of explanation into the same tests with each other, as well as to test them with social-levels of explanation. This is done simply, as Lazardfeld and Menzel (1961) have suggested, by making it possible for a theory of individual action to be considered as a social phenomenon by defining it as a collective property, according to which different social groups can be separated. This includes the assumption that the rationality of action can vary systematically in the population according to typical social-structural factors. This requires empirical application and an almost probabilistic definition of the relevant types of action referring to the ideal types of rationality, rather than the solely Aristotelian definition applied, for example, by Weber. In fact, it may even be speculated whether part of the crisis of sociology has been caused by the lack of tradition of probabilistic explanations in sociology (see Oberschall 1987; Goldthorpe 2000).

The last part of the third research question concerning the rules of application will be outlined next.

## 10.2 The Rules for Application of Rational Action Theory in the Social Sciences

- 1) The application of RAT in the social sciences should start from two assumptions: (1) that rationality should be interpreted simply as meaningfulness, and (2) the meaningfulness should be observed as a subjective state defined by each actor. Meaningfulness is the definition

of rationality with the least attributes, which enables the high level of abstraction of this *axiomatic* principle. It follows that rational action does not necessarily look rational when other persons interpret it. That is why it is required that a researcher applies *verstehende* (understanding) interpretation. It also follows that actions of individuals should be considered only as secondary irrational. This is because it is easy to produce rational interpretations for almost any social phenomenon at least *post festum*. In the end, it can nevertheless turn out that actions cannot be explained by rational action (for example, because of the effects of affections, imitation, etc.), but these types of behaviour fall outside the scope of rational action as a collective property, or should be considered as the additional dimensions of social action, which, nonetheless, are not its *rational* dimensions. The similar starting points for the analysis of rational action have been suggested many times also by others (for example, by Weber ([1920]1978), Goldthorpe (2000) and Boudon (2001b).

- 2) One should first make theoretical assumptions about the possible, but also the typical (or relevant) forms of rational behaviour. The basic principles of how these (or this) typical form(s) can be distinguished (from each other) should be defined. In this thesis it was argued that as the starting point, one should prefer multiple types over a singular type. However, there may be reasons to concentrate only on one type of rationality at a time.
- 3) The principles should be used in the operationalisation of the measures of rationality. The results of the thesis suggest that two dimensions of rational behaviour can be found, according to which rationality varies independently. The dimensions are means- to value-orientation and risk-awareness to outcome-orientation. The first dimension was already separated in Weber's distinction between rationality types. The second dimension can be supported, for example, by the findings in psychological economics (see Kahneman - Tversky 1991), fertility research (see Friedman et al 1994) and research on social mobility (see Breen - Goldthorpe 1997). The assumption about multiple types is nevertheless more advantageous than just assuming one type, because it allows more hypotheses, which increases the probability of coming up with good explanations.
- 4) Theoretical assumptions about the typical forms of rationality should be tested (or at least in some extent verified) empirically (or by referring to empirical evidence). The results of these kinds of test can be used as providing empirical content for the theory of rationality applied. In the test it may also turn out that only a singular type of rationality could be

sufficient, even if multiple types were assumed originally. It is likely that the best way to estimate rationality is through value- and attitude questions covering multiple areas of everyday life. Measuring utilities and beliefs is usually avoided in rationality theories (see Opp 1998). This may, however, easily be followed by making *ad hoc* assumptions.

- 5) After getting empirical content for the assumed rationality types, RAT should be used as a *bridging theory* for testing the lower level of “*mid-range*” theories about the given social phenomena. In principle, the content can be included in any models of explanation. Here the theory has been used in this way to test the individual-level causes of overindebtedness, micro-level explanations of social mobility, explanations for the decisions of having children, as well as incentive- and disincentives related to working, working for very low-income and being jobless in households without any working adults. If the data does not include proper information about the individual-level preferences and values, it is, in principle, possible to include this information from an external dataset, although examples of this kind of practice are relatively rare (as an example see Charles 2003) and may lead to other problems.

### 10.3 Final words and some critical remarks

Although the thesis seems to have been fairly successful in most aspects that were wished to be answered, some critical points need to be mentioned as final words.

Even though the test of dimensionality of rationality seemed to be successful, it is far from being sure that the solution is yet optimal. Critical comments about the missing dimensions or about the lack of the completeness of measures of rationality should be expected. If one should follow the rules above, one should be advised to “clean the table” first, then search (theoretically as well as empirically) for the relevant types of rationality, and after that see inasmuch they match to the dimensions resulted here. Not even the applied rationality theory needs to be taken for granted – similar rules can be applied also to other theories including individual-level mechanisms in order to explain social phenomena.

Also, the results of the thesis are mostly based on one cross-sectional dataset. In order for the results found here to be more convincing it should be possible to reproduce them with other datasets. The analysis made with *EVS1999/2000* already proved that this is, in principle, possible. A longitudinal population-level panel dataset including information about individual-level

preferences and values would be optimal for measuring the variation of rationality as well as estimating the causal connections between rationality and social phenomena. Currently, there does not seem to be such datasets available.

The rules of application outlined above show that the application of RAT requires quite a few steps and is far from being a very simple task. If the research could eventually provide a stable and unchanging basis for the relevant dimensions of rational action, and if the measures of these dimensions would be highly standardised, the task could be simplified enormously. If this would not be the case, it is very doubtful that the application of this kind of RAT applying the mentioned rules would become very common. Even if this is the case, it may be that something important has still remained unnoticed and the fallacies of the misplaced understanding of the relationship of individual, social and structural explanations will prevail.

So at least for the time being, the uncertainty of whether the Holy Grail has been found or not will still remain. Even if this quest in the end turns out to be unsuccessful, the “journey” has not been useless. The work here points out at least some of the typical fallacies made in the social sciences. If researchers remember at least to avoid them, a major part of the problems of sociological analyses can be avoided. Also, the work that has been completed here hopefully shows that it is possible to measure rationality and apply it in the explanation of social phenomena, if the proper rules are used as guides in the application. Whether the rules suggested above are the ones to be followed remains to be decided by others.

*“Torment me no longer. I have seen the Grail!”*

*“There's no grail here.”*

*“I have seen it! I have seen it!”*

*Monty Python and the Holy Grail, 1975.*

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## *APPENDICES*



## Appendix A. The Statistical Appendix.

### Factor Analysis and Principal Components Analysis

Factor analysis and mathematically more simple principal components analysis are used as standard methods of deriving the latent structure from the group of variables based on the correlations or covariances. In the social sciences, it is usually applied in order to derive the dimensions or types of attitudes or values from special question patterns having multiple attitude questions or statements. Multivariate normality is usually normally assumed when factor or principal components analysis is applied. This means that all variables and linear combinations of variables are normally distributed. A practical limitation of the scale of measurement for the factor analysis is that the correlation matrix of the factored variables has to have sizeable correlations between each other, usually at least that of 0.3. (See Tabachnick - Fidell 2001, 582-585.) Also, the amount of cases to be analysed should be over 300. The type of correlations that will be used needs to be carefully selected in relation to the level of measurement of the analysed variables.

Apart from the exploratory method that will be explained here, there is also a confirmatory method. The latter is often argued to be a more suitable method if one has preliminary information about the relation of the factored variables and one wishes to test a theory about the relationship of them. However, like in Chapter 6 of this book, theory testing can sometimes be more advantageous if the preliminary assumptions about the structure of the data do not restrict the analysis, but one is able to “confirm” the assumed theoretical structure with the latent structure derived from it more or less without “forcing” reality onto it and applying only general-level mathematical restrictions in the process. If the latent structure derived from exploratory FA or PCA fits the theoretical assumptions, one has in fact shown the validity of the theory and its application in a stronger way than it could be done with confirmatory factor analysis only.

The exploratory factor analysis can be presented with the equation:

$$(E1) \quad x = A f + e$$

in which  $x$  is the vector of all the observed variables  $x_1, x_2, \dots, x_p$ ,  $f$  is the vector of latent, unobserved factors  $f_1, f_2, \dots, f_k$ ,  $e$  is the vector of random variables  $e_1, e_2, \dots, e_p$ , and  $A$  is the matrix of factor loadings  $a_{ij}, i=1, 2, \dots, p, j=1, 2, \dots, k$ . The random factors  $e_i$  can be interpreted as *unique factors* that are produced from the measurement errors of the variables and variable-specific factors. (Nummenmaa et al 1997, 241.)

The solution of principal components analysis applied in Chapter 4 can be understood in a very similar manner. However, in PCA one is usually rather interested in reducing the variance of various variable  $x$  into a few main components that are able to reproduce the variance of the variables  $x_1, x_2, \dots, x_p$  as much as possible, rather than finding the latent structure of the variables. All of the variance is distributed straight to the components, including error and the unique variance of each observed variable. (Tabachnick - Fidell 2001, 610-611; Nummenmaa et al 1997, 229-230, 241.)

The first component is produced in such a way that it explains most of the variance of the observed variables  $x_1, x_2, \dots, x_p$ . The variance of the first main component is the same as the greatest eigenvalue of the correlation matrix of the observed variables,  $\lambda_1$ . The equation for the first principal component would then be:

$$(E2) \quad PC_1 = c_{11} x_1 + c_{12} x_2 + \dots + c_{1p} x_p,$$

in which  $c_{1k}$  are the weights for the first principal component and  $P$  is the aggregated standardised variance of the observed values  $x$ . The second main component would be defined in such a way that its variance would be the second largest and it would be uncorrelated with the first main component. All additional principal components should be uncorrelated with the previous ones. The often used practical limit is to assume as many principal components as there are eigenvalues over 1. The communalities for each variable  $x$  can be estimated with the equation:

$$(E3) \quad h_i^2 = \sum_{k=1}^p c_{jk}^2, j=1, \dots, p,$$

in which  $c_{jk}$  is the loading of  $x_j$  on the  $k$ th principal component  $PC_j$  and  $k$  is the number of the principal components. Communalities vary between 0 and 1, and the bigger the value is, the better the fit is. (See Nummenmaa et al 1997, 229-230.)

The rotation applied in the analysis of Chapter 4 is the oblique rotation. It means that the amount of correlation the observed variables  $x$  are allowed to be fairly highly correlated (here  $\sigma = 0$ ). Another often used method of rotation is *varimax*, which produces factors that are as little correlated as possible. (See Tabachnick - Fidell 2001, 616.)

The higher absolute value of loading a variable has, the greater significance it has for the factor (or component) in question. The variables having loadings

less than 0.3 are considered to be unimportant for the interpretation. The interpretation is carried out primarily referring to the marker factors, i.e. the variables having the highest factor loadings. (See Tabachnick - Fidell 2001, 587, 625.)

## Multidimensional scaling

In practice in the social sciences, the latent structure is probably first tried to be derived using factor analysis. However, it may be the case (as it was with the rationality variables in Chapter 6) that, for example, the correlations between the variables remain so low that factor analysis fails, although the chi-squared tests show that there are connections between the variables. In this kind of situation, one can consider other methods of analysis. One method to be tested is multidimensional scaling, MDS.<sup>75</sup>

MDS is used in order to obtain the latent structure of the data similarly to, for example, factor analysis or principal components analysis. However, whereas the latter methods are based on the analysis of correlations or covariance, MDS is based on the proximities how different the different objects are. Thereby, it is not subjected to the requirements of multivariate normality, as the previous two methods are. It has also been argued that MDS reduces the dimensionality of the data often more efficiently than FA or PCA (see Brazill - Grofman 2002; Ludlow 1999).

Much of the MDS results depend on how the proximities are produced. The normal approach for doing this is to use the Euclidean distance, according to which the proximity between variables  $x$  and  $y$  can be measured with the following equation:

$$(E4) \quad EUCLID(x, y) = \sqrt{\sum_i (x_i - y_i)^2}.$$

The euclidean distance is applied in the analysis of European Values Survey 1999/2000. In the case of Finland 1999 -dataset, however, the proximities are based on the frequencies of variables. That is why the chi-squared test of equality is used. The proximities of this type can be achieved with the equation:

$$(E5) \quad CHISQ(x, y) = \sqrt{\frac{\sum_i (x_i - E(x_i))^2}{E(x_i)} + \frac{\sum_i (y_i - E(y_i))^2}{E(y_i)}}.$$

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<sup>75</sup> Another possibility could be Latent Class Analysis (see Breen & Jonsson 1997; Moisio 2004).

$E(x_i)$  and  $E(y_i)$  refer to expected values of variables  $x$  and  $y$  from the model of independence.

The loss function that PROXSCAL -algorithm applies is:

$$(E6) \quad \sigma^2 = \frac{1}{m} \sum_{k=1}^m \sum_{i < j}^n w_{ijk} [\hat{d}_{ijk} - d_{ij}(X_k)]^2$$

which is the weighted mean squared error between the transformed proximities and the distances of  $n$  objects within  $m$  sources. The transformation function provides non-negative, monotonically decreasing values for the transformed proximities  $\hat{d}_{ijk}$ .

The proximities are then fitted into  $n$ -dimensional space, in a way that the distance between points in that space should be equal to a proximity matrix. How equal the real proximities and the fitted geometrical distances are is referred to with Stress-measures. Different fitting algorithms try to minimise different types of Stress. Despite the differences of these measures of “badness of fit”, the interpretations are always the same – Stress always gets smaller when more dimensions are assumed.

The most usual method for determining the best fitting dimensional solution is the deepest descent (or to look for the elbow), which means that one chooses the amount of dimensions as optimal where the descent in Stress from the previous number of dimensions to the next is relatively the largest, and after which the reduction in Stress is subsequently smaller. (Kruskal - Wish 1978, 7-30.) There are also some “rules of thumb” related to fit measures in order to interpret the results. For example, one should not accept any model having Stress-I over 0.15 and the Congruence should be expected to be over the limit of 0.90. There has also been development for finding the upper Stress limits of acceptable dimensionality with the Monte Carlo -simulation, which should give the interpretation of dimensionality a more objective basis (Sturrock - Rocha 2000, see also Schiffman et al 1981, 11). Based on these simulations, the researchers have constructed stress evaluation tables, such as the one by Sturrock & Rocha (2000). In a fitting model, Stress-1 (Kruskal's “classic” Stress) should be under the upper stress limit given in the stress evaluation table. However, the most important principle for choosing the right dimensionality is the theoretical fit of the solution (Kruskal - Wish 1978, Schiffman et al 1981, Borgatti 1997, Sturrock - Rocha 2000).

## Logistic regression

If one has a categorical-dependent variable to be explained with the set of independent variables, one usually applies logistic regression. If the variable to be explained is dichotomous, the method is referred to as binary logistic

regression, and if it is polytomous, it is referred to as multinomial logistic regression. If the polytomous classes are ordered, one can apply ordinal logistic regression. The basic principles of estimating these models, however, are the same in each type of logistic regression.

The equation of model, where  $x$  refers to a quantitative factor effecting on the risk of being over-indebted, is:

$$(E7) \quad \text{logit}(\pi(x)) = \beta^1 + \beta^x x$$

Parameters indicated with  $\beta$  can then be interpreted through the equation:

$$(E8) \quad \frac{\pi(x)}{1 - \pi(x)} = \exp(\beta^1 + \beta^x x) = e^{\beta^1} (e^{\beta^x})^x$$

This means that odds-ratio grows  $e^{\beta^x}$  times, when the factor grows by one unit. Usually the analysis is performed with multiple variables in the equation. If all variables are considered continuous, the equation should be:

$$(E9) \quad \text{logit}(\pi(x)) = \alpha + \beta^1 x_1 + \beta^2 x_2,$$

where  $x_1$  would be the first continuous variable and  $x_2$  the second. The similar model for categorical factors would be:

$$(E10) \quad \text{logit}(\pi_{ij1}) = \alpha + \beta_i^A + \beta_j^B,$$

where first categorical variable A can have  $(1, \dots, I)$  different levels  $i$  and B  $(1, \dots, J)$  levels  $j$ .

Other variables would be added to the equation in a similar manner than the second item in the equations above. In the third type of equation, an interaction term for continuous variables is added. The equation for the model would be:

$$(E11) \quad \text{logit}(\pi(x)) = \alpha + \beta^1 x_1 + \beta^2 x_2 + \beta^{x_1 * x_2} x_1 x_2$$

This means that the connection of  $x_1$  would be different on different levels of  $x_2$  and this change could also be presented in a linear manner. (See Hosmer - Lemeshow 2000; Tabachnick - Fidell 2001.)

According to the instructions of Hosmer and Lemeshow (2000), the likelihood ratio test statistic is used as the main indicator of statistical significance. This is why the Wald-statistics are not necessarily needed for the evaluation of the significance of the model and are, for example, in Chapters 4 and 8 excluded from the tables. In the case of independent variables G refers to the variable's impact on the overall  $-2 \log$  likelihood fit of model and  $p$  to statistical significance of that impact. The Model G refers to the change of full model in compared to the "reduced" model, including only the constant. If the

variable contributes to the model, the p-value is expected to be lower than 0.05, although the more relaxed value of 0.20 is used as a limit for including the variables from univariate tests to the multivariate model.

Hierarchical model building strategy that has been followed here starts from the univariate tests of each independent factor. All of the significant ones are then included in the multivariate model. After that, all two-way interactions are included (each separately) in the multivariate model. All of the interactions that are able to improve model fit significantly are then included in the multivariate model at the same time, using the relaxed significance limit. The model is then simplified in such a way that it includes only significant interactions (now applying stricter significance limits) and their main effects. The significant main-effects that do not have interaction effects are naturally kept in the model also. If the results and the cell-sizes allow, the same method can be applied to higher-order interactions also.

The models can be interpreted according to parameter estimates. The coefficient can be converted to odds with logarithmic transformation. When the odds are higher than 1, the coefficient is positive, and when the odds are lower than one, the coefficient is negative. There is a reason why both coefficients and the odds are presented. The effect-sizes of variables increasing the risk are easier to compare with the variables decreasing the risk with the coefficients, whereas the odds have a more straightforward common-sense interpretation. The standard error is estimated for the coefficients. The amount of variation in the odds can be estimated from the lower and upper limits of 95% confidence interval. The coefficients and odds indicate the change in coefficient or probability, in the case of continuous variables when the unit is increased by one, and in the case of categorical variables when compared to the reference group.

Especially in the case of multinomial models, the interpretations of the parameter estimates can be very tricky. That is why they are sometimes presented in a non-hierarchical way, by excluding the main effects. In the case of hierarchical models SPSS NOMREG cannot estimate the G-ratio for continuous independent variables also included in the higher-order interaction terms, although it can estimate the parameter estimates correctly.

## Loglinear models

If one has two or more categorical variables one can also use loglinear models. In practice, the amount of variables to be modelled is much smaller than in the case of logistic regression, and covariates are much more difficult to handle. However, the advantage of loglinear modelling is in its flexibility when testing cell-specific hypotheses with topological models. Multinomial *conditional*

logistic regression has the same advantage, but is in practice much harder to apply. Another often mentioned advantage of loglinear models is that they do not have preliminary assumptions about which one of the modelled variables is the dependent one. However, in practice there is a preliminary assumption about dependent and independent variables when the hypotheses are tested, which actually may make the interpretation of the model that does not include this assumption harder. However, if the problem can be modelled with 2-5 variables, most of them being categorical, loglinear models are a good choice of method.

The equation for full & saturated loglinear model with two dimensions of frequency table F would be:

$$(E12) \quad \log F_{ij}^{OD} = \theta + \lambda_i^O + \lambda_j^D + \lambda_{ij}^{OD}$$

where subscripts  $i=1,\dots,I$  indexes the categories of variable O and  $j=1,\dots,J$  indexes the categories of D. The equation is not identifiable without some restrictions. The usual way of making a loglinear model identifiable is to set the last category of variables to be equal to zero, i.e. as a reference class. (Agresti 1990; Sobel 1995; Powers - Xie 2000.) Observed cell frequencies are reproduced with the loglinear equation using some iterative estimation method, here the EM -algorithm (Dempster et al 1977). Estimated cell counts are then compared to the observed ones.

The main fit statistic applied in the models is the likelihood ratio chi-squared. The equation for the test is:

$$(E13) \quad L^2 = 2 \sum_{t=1}^T n_t \log\left(\frac{n_t}{\hat{m}_t}\right)$$

where T refers to categories of M, n to the sample size, t to the given category of M, and m with a hat to the maximum likelihood estimate. (see Sobel 1995).

Two hierarchical models can be compared to each other according to chi-squared change in relation to degrees of freedom lost or achieved. However, improving an already fitting model (according to statistical significance of model likelihood ratio) with higher order effects becomes easily problematic. Models can easily become overfitted, which means that the comparison of likelihood ratio tests cannot necessarily be trusted.

The models with "design matrices" refer to topological loglinear models. This means that each cell of the tested frequency table is allocated to one of a disjoint set of levels. These levels reflect the strength of the association between the variables presented in the table. (See Breen - Goldthorpe 2001.) For example, if a two-way table with three levels on both variables was modelled according this design matrice:

$$\begin{pmatrix} 1 & 2 & 2 \\ 0 & 1 & 2 \\ 0 & 0 & 1 \end{pmatrix},$$

it would refer that the table with nine cells is modelled with two parameters, assuming that in each cell referred to with the same number the odds are equal. The cells referred to with zero constitute the reference category.

Testing the association between the variables with topological models has become a standard of loglinear modelling in the social sciences. Although in this way the models can be tested in a more detailed manner, it needs to be underlined that, in fact, topological modelling always involves simplification of the parameterisation, which can sometimes also hide some significant effects. One needs to be careful in order not to hide the effects that could be relevant in relation to the analysed hypothesis. One may test whether this is the case by using “normal” hierarchical loglinear models without topological parameterisation and this way making sure that none of the relevant effects are excluded from the model.

## **Appendix B. Applied questions from Finland 1999 – consumption and everyday life at the end of the Millennium.**

This Appendix presents an English translation of the applied variables from “Finland 1999” research questionnaire. The rest of the translated questionnaire is available in Räsänen (2003). The original Finnish version of the questionnaire is available in Erola & Räsänen (2000). Syntax available from <http://www.tukkk.fi/jerola/occucode.htm> can be used in order to code the occupational information into EGP-class classification.

### BACKGROUND INFORMATION

1. Are you?

1=Male

2=Female

2. What is the year of your birth?

(With an empty line for completion)

3. What type of accommodation do you live in?

1=Owner-occupied flat

2=Parents flat

3=Rented flat

4=Right of residence apartment

5=Other accommodation

4. What type of residential area do you live in?

1=Urban

2=Rural

5. What is your marital status?

1=Single

2=Cohabitation without marriage

3=Married

4=Divorced

5=Widowed

6. What type of household does your household represent?

1=Single

2=Single parent

3=Couple without children

4=Couple with children

5=Living with parents

6=Other type of household

7. Number of persons living in your household?

(With an empty line for completion)

8. Do you have descendants living elsewhere?

1=No

2=Yes, the number of minor descendants (With an empty line for completion)

3=Yes, the number of adult descendants (With an empty line for completion)

#### EDUCATION, OCCUPATION AND LIVELIHOOD

9. What is your basic education?

1=Part of lower elementary school or less

2=Elementary school

3=Higher elementary school

4=Secondary school or A-levels

10. What is your vocational training?

1=Unskilled

2=Vocational school or course

3=Intermediate level

4=Higher intermediate level degree

5=Academic degree

6=Postgraduate academic degree

7=Other (With an empty line for completion)

11. What is your educational domain?

(With an empty line for completion)

12. If you are not employed at the moment, which one of the following is the reason?

1=Student

- 2=Unemployed
- 3=Pensioner
- 4=Disability pension
- 5=Parental leave
- 6=Nursing leave
- 7=Military service
- 8=Housewife/househusband
- 9=Other (With an empty line for completion)

13. In which sector do you work?

(Note: if you are not employed at the moment, answer in reference to your last job)

- 1=Public sector
- 2=Private sector

14. What is your occupation?

(Note: if you are not employed at the moment, answer in reference to your last job)

(With an empty line for completion)

15. If you are participating in working life, what kind of attachment you have?

(Note: if you are not employed at the moment, answer in reference to your last job)

- 1=Permanent
- 2=Periodical, 1-5 years
- 3=Periodical, less than a year
- 4=Periodical, less than six months
- 5=Jobbing, contemporary
- 6=I am an entrepreneur

16. Have you been unemployed during the last five years?

(Note: if you are not employed at the moment, answer in reference to your last job)

- 1=Yes
- 2=No

17. How many times and for how long have you been unemployed?

(Note: if you are not employed at the moment, answer in reference to your last job)

- 1=I haven't been unemployed
- 2=Once, for less than six months

- 3=Several times, for less than six months at a time
- 4=Once, for more than six months
- 5=Several times, for more than six months at a time

18. What is the occupation of your spouse?  
(Note: if you do not have a spouse, go to question number 22)  
(With an empty line for completion)

19. If your spouse is not participating in working life, what is the reason?  
(Note: if you do not have a spouse, go to question number 22)

- 1=Student
- 2=Unemployed
- 3=Pensioner
- 4=Disability pension
- 5=Parental leave
- 6=Nursing leave
- 7=Military service
- 8=Housewife/househusband
- 9=Other (With an empty line for completion)

20. Has your spouse been unemployed during the last five years?  
(Note: if you do not have a spouse, go to question number 22)

- 1=Yes
- 2=No

21. How many times, and for how long?  
(Note: if you do not have a spouse, go to question number 22)

- 1=She/he hasn't been unemployed
- 2=Once, for less than six months
- 3=Several times, for less than six months at a time
- 4=Once, for more than six months
- 5=Several times, for more than six months at a time

22. What is/was the primary occupation of your father?  
(With an empty line for completion)

23. What is/was the primary occupation of your mother?  
(With an empty line for completion)

24. What is the primary source of income in your household?

- 1=Paid work
- 2=Entrepreneurship

- 3=Capital income
- 4=Pensions
- 5=Unemployment benefits
- 6=Home care subsidy
- 7=Subsistence subsidy
- 8=Family help
- 9=Other (With an empty line for completion)

#### ATTITUDES TOWARDS CONSUMPTION AND LIFESTYLE

37. Do you agree with the following propositions?

(Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

- 1) I don't care about fashion
- 2) I don't care what people think about me
- 3) I take good care of my appearance
- 4) I'm concerned about the environmental effects of my consumption
- 5) Quality is often more important to me than price
- 6) I think that the younger generation is irresponsible
- 7) I think that the older generation consumes irresponsibly
- 8) I want pleasure from my consumption
- 9) I often eat out
- 10) I often go to pubs and bars
- 11) If I had more money, there wouldn't be so many problems
- 12) High culture is snobbery
- 13) One should always save for 'bad days'
- 14) Our family always dines together
- 15) I think it is a duty of the people to increase their consumption during the "good times" in society.
- 16) I often shop at flea markets
- 17) I know the latest trends in popular music
- 18) I feel that I'm not able to spend as much as I want
- 19) Life is too materialistic and there are too many products on the market
- 20) I often drink wine when I eat
- 21) I live economically
- 22) I often read fashion and home magazines
- 23) I consume consciously in an environment-friendly way
- 24) I often make impulse purchases
- 25) I often listen to classical music
- 26) People should live so that they can leave a proper legacy for their children
- 27) The fear of the next recession prevents me already from consuming

- 28) I often shop at the sales
- 29) I am concerned about the origin of the food we eat
- 30) Consumer credit enables a comfortable lifestyle
- 31) Study loans are a good way to finance one's studying
- 32) It is possible to increase one's standard of living permanently by taking loans from banks in a prudent manner
- 33) Living on interest rates should be condemned
- 34) I finance my purchases by saving beforehand
- 35) One should avoid taking loans from the bank
- 36) One is able to achieve a high standard of living by working hard
- 37) Public nuisances of economic crime are exaggerated
- 38) Banks have been blamed too much for the economic depression

### ACTIVITIES IN EVERYDAY LIFE

What do you think about the claims concerning the following fictional situations?

38. You are buying some consumer durable other than daily consumer goods. You need to choose the best choice for yourself between the products that are all applicable to the same things. (Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

a) Before buying, I have to decide whether it is right or wrong to buy a product.

b) It is hard to make the best choice.

I can usually trust that someone can recommend the best choice for me.

I can pick the best choice completely relying on former information.

e) I prepare myself somehow that my choice may turn out to be failure in the end.

39. You are buying some consumer durables other than daily consumer good. You need to choose between paying in cash, using a credit card or paying of by instalments. (Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

a) I have to decide whether it is right or wrong to pay with credit.

b) It is hard to choose the best means of payment.

c) I usually accept the means of payment recommended to me.

d) I know beforehand what type of payment it is worth using for purchases like that.

e) I prepare myself somehow that the selected means of payment may turn out to be failure in the end.

40. You need to take a relatively big loan from a bank (for example, car or house mortgage). You need to choose from which bank to take the loan, how much and with what terms. (Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

a) Before making a decision, I have to consider whether taking the loan is right or wrong according to some important principle.

b) Taking the loan creates serious insecurity for the future.

c) While making the decision, I can rely on the knowledge I have gathered.

When making the decision, I somehow take into account that my choice may turn out to be failure in the end.

41. You need to make an important decision concerning your family (for example, moving to another locality). (Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

a) First, I need to consider whether making the decision is right or wrong according to some important principle.

b) Outcomes of important decisions concerning family life are impossible to see in advance.

c) When making an important decision concerning family, the advice of an expert or other outsider is often correct.

d) While making decisions concerning family, I can rely on the knowledge I have gathered previously.

e) When making the decision, I somehow take into account that my choice may turn out to be failure in the end.

42. In your work you need to make an important decision concerning your job assignment. (Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

a) First, I need to make myself clear whether the decision is right or wrong according to some important principle

b) Every decision has to be considered individually.

c) I can trust what someone else recommends as the best option for me.

d) While making the decision concerning decisions in my work, I can rely on the knowledge I have gathered previously.

e) When making the decision, I somehow take into account that my choice may turn out to be failure in the end.

43. You need to make an important decision concerning a relationship (for example, living together). (Evaluated on a Likert-scale ranging from 1[=I agree completely] to 5[=I don't agree at all].)

- a) First, I need to make myself clear whether the decision is right or wrong according to some important principle.
- b) Outcomes of important decisions concerning relationships are impossible to see in advance.
- c) When making an important decision concerning relationships, the advice of an expert or other outsider is often correct.
- d) While making the decision concerning relationships, I can rely on the knowledge I have gathered previously.
- e) When making the decision, I somehow take into account that my choice may turn out to be failure in the end.

60. How much do you think that the following things include risk?

(Evaluated at a Likert scale from 1=Very much, 5=Not at all)

- a) Part-time employment
- b) Investments in stock
- c) Taking loans
- d) Standing as security of a loan
- e) Consumer credit
- f) Saving in banks
- g) Over-consuming
- h) Gambling
- i) Impulse purchases
- j) Travelling
- k) Speeding in a car
- l) Flying
- m) Drugs for medication
- n) Alcohol
- o) Drug abuse
- p) Staying out at night
- q) Speaking to total strangers
- r) Sleeping around
- s) Other (With an empty line for completion)

#### INCOME, EXPENSES, SAVINGS AND LOANS

61. What is the amount of household income a month?

- a) Please, indicate gross amount in FIM (With an empty line for completion)
- b) Please, indicate net amount in FIM (With an empty line for completion)

62. What is the amount of your personal income a month?

- a) Please, indicate gross amount in FIM (With an empty line for completion)
- b) Please indicate net amount in FIM (With an empty line for completion)

63. Consider all costs related to your consumption; what is the amount of additional savings of your household?

Please, indicate the amount in FIM (With an empty line for completion)

64. How much do your household expenses exceed income?

Please indicate the amount in FIM (With an empty line for completion)

65. How much does your household have mortgage?

Please indicate the amount in FIM (With an empty line for completion)

66. How much does your household have study loan?

Please indicate the amount in FIM (With an empty line for completion)

67. How much does your household have loan for a car?

Please indicate the amount in FIM (With an empty line for completion)

68. How much does your household have other loans?

Please indicate the amount in FIM (With an empty line for completion)

69. Are you planning to take a loan in the near future?

If yes, please indicate the amount in FIM (With an empty line for completion)

70. Do you have personal consumer credits?

If yes, please indicate the amount in FIM (With an empty line for completion)

71. How many credit or account cards do you have?

a) (With an empty line for completion)

b) The limit of my account is (With an empty line for completion)

72. How often do you make purchases using credit or account cards?

1=Daily

2=A couple of times a week

3=Weekly

4=A couple of times a month

5=Once a month

6=Less than once a month

73. How much do you have other types of loans?

Please indicate the amount in FIM (With an empty line for completion)

#### CREDIT DEFAULTS AND DEFAULT REGISTRATIONS

1 = I have never had, nor do I have now, any credit defaults or credit default registrations.

2=I have previously had credit defaults or credit default registrations, but not any more. Please also indicate the number of defaults. (With an empty line for completion)

3=I currently have credit defaults or credit default registrations. Please also indicate the number of defaults. (With an empty line for completion)

4=I don't know whether I have credit defaults or credit default registrations.

### **Appendix C. Factor analysis (PCA) of the rationality variables of Finland 1999-dataset**

It was already mentioned in the text that using factor analysis is not an optimal method for the analysis of the variables, because item correlations remain fairly low. In this appendix the results of MDS analysis of the dimensionality of rationality related variables of Finland 1999 data are tried to be ascertained with more familiar method of factor analysis. This involves a tests using principal components analysis, used also in Chapter 4. The oblique rotation is used, because it cannot be known beforehand whether some of the variables would result high loadings on separate factors. However, the results are fairly similar with at least the maximum likelihood factor analysis as well as if the varimax-rotation would be used. Appendix-table 1 shows the results for six factors in which eigenvalue exceeds the limit of 1. It can be seen from factor loadings that the results indicate support to none of the proposed hypotheses. Each factor refers to different type of question, however, covering all the interaction situations in the same factor, except in then case of uncertainty-related variables. Thus it can be considered that this test fails altogether deriving the latent structure of the variables, because of the fact that the dimensionality of data is not reduced as efficiently as with MDS.

The appropriate number of dimensions can also in factor analysis be selected with the method of deepest descent of Eigenvalues. This method differs from similar method of Stress-evaluation in that one should consider as the right number of factors the number before the clear drop in Eigenvalue. It can be seen from Appendix-table 1 that this drop posits on the second factor, indicating that one should only accept the first factor as sufficient to cover the relevant information about the variation. However, if this solution is followed, the resulting variable would indicate only to level of value-orientation of action, whereas the other variables would actually be quite unimportant in respect of variation on the factor. Neither this method would provide theoretical fit.

Appendix-table 1. Principal components analysis on the rationality variables.

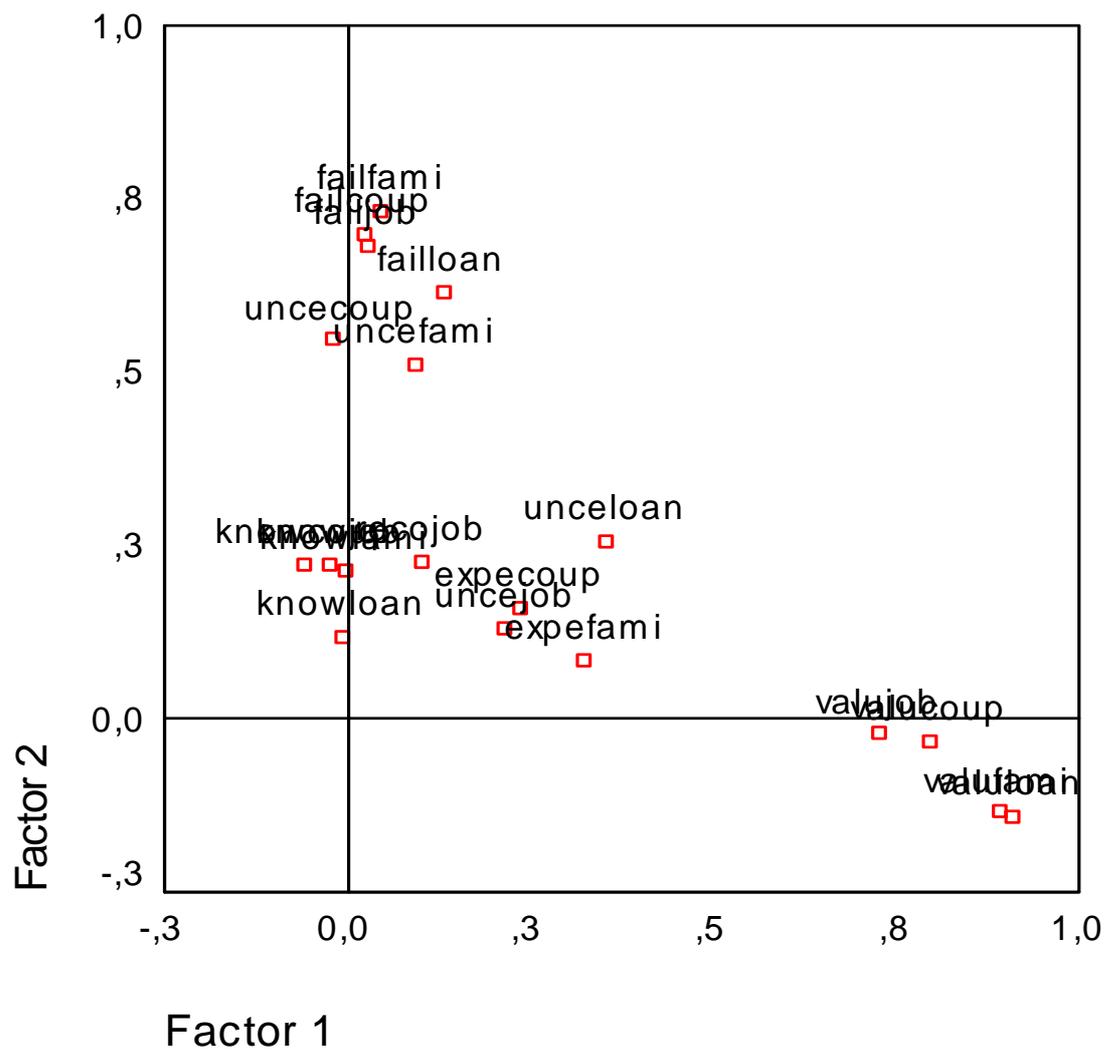
Factors with eigenvalue over 1 included. Factor loadings, communalities, eigenvalues and  $R^2$  for each factor. Rotation: Oblimin.

	<i>Factors</i>						<i>Communalities</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	
<i>VALUFAMI</i>	0.866	0.246	0.055	0.173	0.170	0.095	0.758
<i>VALUCOUP</i>	0.821	0.304	0.111	0.183	0.216	0.001	0.690
<i>VALULOAN</i>	0.790	0.190	0.032	0.231	0.140	0.459	0.797
<i>VALUJOB</i>	0.768	0.281	0.169	0.114	0.207	-0.014	0.604
<i>FAILFAMI</i>	0.251	0.831	0.085	0.113	0.251	0.075	0.693
<i>FAILJOB</i>	0.224	0.779	0.100	0.117	0.206	0.032	0.611
<i>FAILLOAN</i>	0.227	0.761	0.024	0.127	0.091	0.396	0.682
<i>FAILCOUP</i>	0.232	0.746	0.138	0.132	0.301	0.004	0.576
<i>KNOWCOUP</i>	0.006	0.075	0.803	0.205	-0.074	0.032	0.741
<i>KNOWFAMI</i>	0.138	0.083	0.732	0.022	0.142	-0.169	0.543
<i>KNOWJOB</i>	0.101	0.085	0.599	0.052	0.175	-0.139	0.367
<i>EXPECOUP</i>	0.159	0.137	0.127	0.823	0.046	0.032	0.682
<i>EXPEFAMI</i>	0.221	0.118	-0.022	0.801	0.066	0.062	0.666
<i>RECOJOB</i>	0.078	0.120	0.171	0.594	0.164	0.042	0.379
<i>UNCECOUP</i>	0.146	0.272	0.063	0.104	0.849	0.000	0.737
<i>UNCEFAMI</i>	0.216	0.269	0.089	0.168	0.821	0.138	0.709
<i>UNCEJOB</i>	0.304	0.114	0.240	-0.022	0.333	-0.055	0.200
<i>UNCELOAN</i>	0.260	0.284	0.008	0.109	0.235	0.827	0.782
<i>KNOWLOAN</i>	0.135	0.055	0.404	0.054	0.150	-0.405	0.300
<i>Eigenvalues</i>	6.454	2.679	2.230	1.792	1.611	1.395	
<i>R<sup>2</sup></i>	25.603	10.627	8.848	7.110	6.393	5.533	

Appendix-table 2. Principal components analysis on the rationality variables, forced to two factors. Factor loadings, communalities, eigenvalues and  $R^2$  for both factors. Rotation: Oblimin.

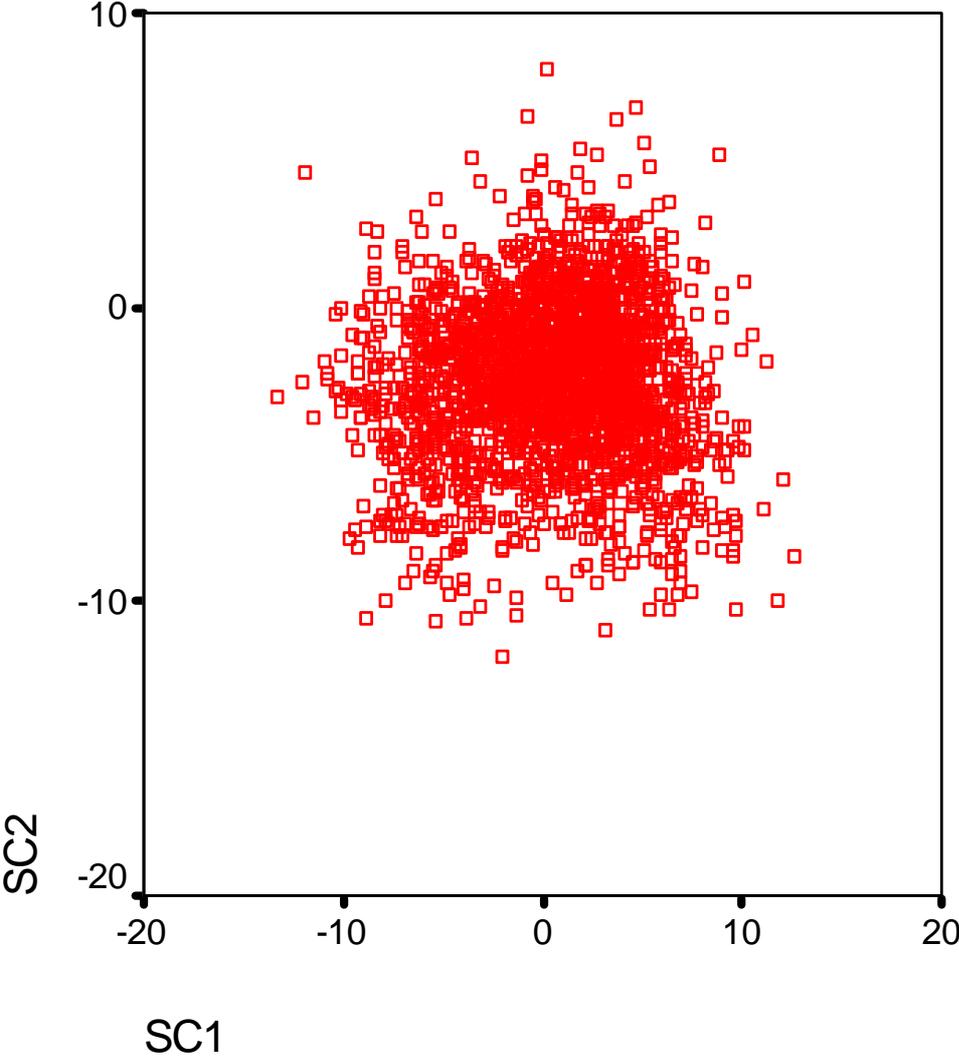
<i>Variables</i>	<i>Factors</i>		<i>Communalities</i>
	<i>1</i>	<i>2</i>	
<i>VALULOAN</i>	0.854	0.201	0.747
<i>VALUFAMI</i>	0.839	0.201	0.720
<i>VALUCOUP</i>	0.786	0.270	0.618
<i>VALUJOB</i>	0.720	0.253	0.519
<i>UNCELOAN</i>	0.448	0.388	0.256
<i>EXPEFAMI</i>	0.356	0.208	0.133
<i>EXPECOUP</i>	0.295	0.249	0.109
<i>UNCEJOB</i>	0.264	0.211	0.084
<i>FAILFAMI</i>	0.323	0.749	0.564
<i>FAILCOUP</i>	0.287	0.708	0.501
<i>FAILJOB</i>	0.285	0.694	0.482
<i>FAILLOAN</i>	0.363	0.665	0.457
<i>UNCEFAMI</i>	0.286	0.547	0.306
<i>UNCECOUP</i>	0.185	0.538	0.290
<i>RECOJOB</i>	0.186	0.264	0.079
<i>KNOWJOB</i>	0.061	0.215	0.047
<i>KNOWFAMI</i>	0.078	0.213	0.045
<i>KNOWCOUP</i>	0.026	0.201	0.043
<i>KNOWLOAN</i>	0.040	0.116	0.014
<i>Eigenvalues</i>	6.454	2.679	
<i>R<sup>2</sup></i>	25.603	10.627	

Finally the pattern of data is tried to be “forced” into two variables, as MDS analysis indicated. The results of this procedure can be seen in Appendix-table 1. Table shows that the first factor is characterised by variation towards value-orientation, whereas the second factor shows high loadings on failure-awareness variables. This configuration can be easily interpreted visually with the rotated component plot presented Appendix-figure 1. If the plot is compared to the similar plot based on the dimensions produced by MDS (Figure 4), it can be easily seen that the structure is *somewhat* similar to the dimensionality produced with MDS. On Factor 1 the variation is between value-orientation and away from it. On the second factor the variation is between uncertainty and certainty. However, the analysis seems to fail to provide an anticipated interpretation quite as clearly as the previous method. In principal components analysis the impact of knowledge-related questions seems to be somewhat underestimated as a way to control uncertainty when compared to value-orientation.

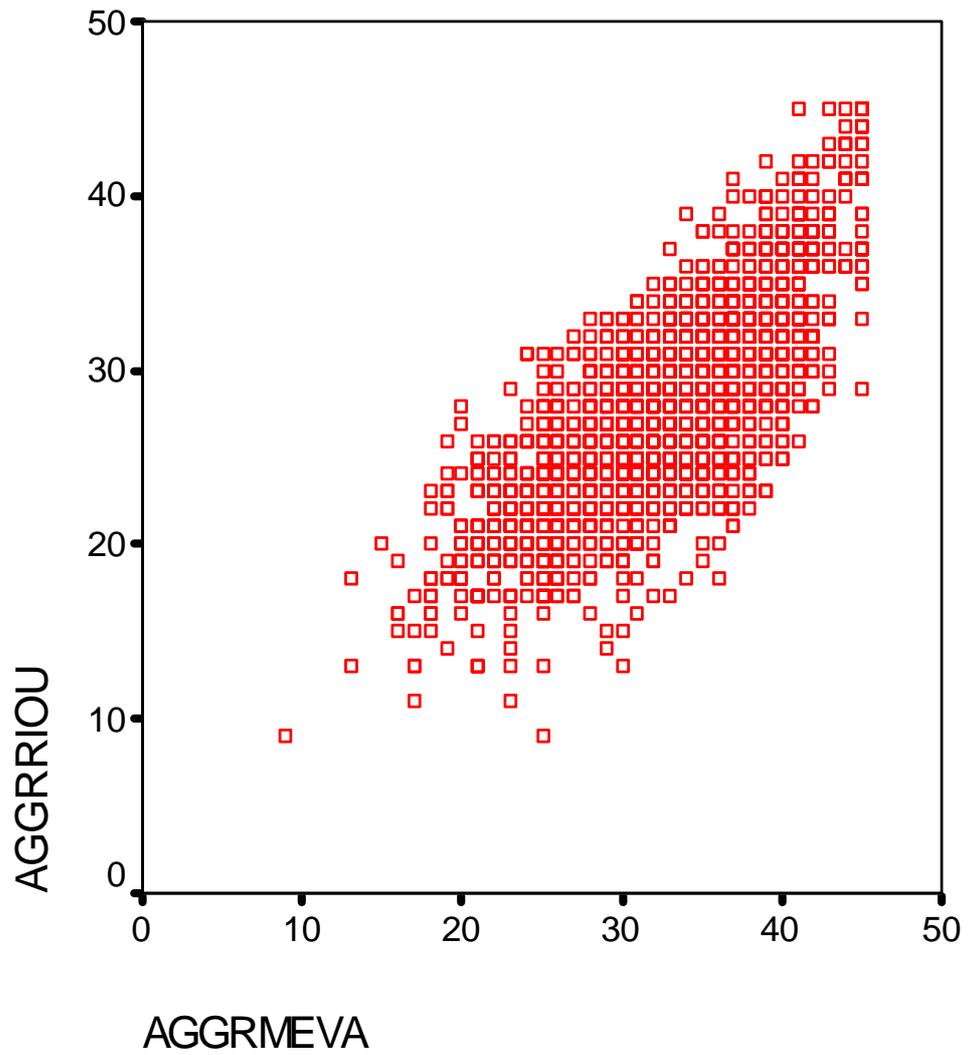


Appendix-figure 1. Rotated factor plot for two-dimensional solution in PCA.

**Appendix D. Comparison of the different methods of constructing the variables for rationality dimensions.**



Appendix-figure 2. Cases when rationality variables are aggregated using dimensional coordinates as weights.



Appendix-figure 3. Cases when rationality variables aggregated from the original variables with nine highest absolute coordinate values on both dimension.

**Appendix E. Parameter estimates for univariate logistic model for the tests of connection of background variables ideal type groups of rationality.**

Appendix-table 3. Parameter estimates for univariate logistic model for the tests of connection of background variables ideal type groups of rationality.

		<i>Ideal types</i>	<i>Coeff.</i>	<i>St. Err.</i>	<i>Odds</i>	<i>95% CI</i>	
						<i>Low</i>	<i>Up</i>
<i>Amount of loans</i>		<i>Instrum.</i>	-0.004	0.033	0.996	0.934	1.062
		<i>Value</i>	-0.162	0.041	0.850	0.785	0.921
		<i>Axiol.</i>	-0.164	0.040	0.849	0.784	0.919
<i>Income</i>		<i>Instrum.</i>	0.031	0.120	1.031	0.815	1.306
		<i>Value</i>	-0.350	0.159	0.704	0.516	0.963
		<i>Axiol.</i>	-0.862	0.174	0.422	0.300	0.594
<i>Marital Status (ref. widowed)</i>	<i>Single</i>	<i>Instrum.</i>	-1.008	0.438	0.365	0.155	0.861
		<i>Value</i>	-1.351	0.439	0.259	0.110	0.612
		<i>Axiol.</i>	-0.795	0.443	0.452	0.189	1.076
	<i>Cohabitation</i>	<i>Instrum.</i>	-1.341	0.446	0.262	0.109	0.627
		<i>Value</i>	-1.305	0.442	0.271	0.114	0.645
		<i>Axiol.</i>	-0.870	0.448	0.419	0.174	1.007
	<i>Married</i>	<i>Instrum.</i>	-0.699	0.427	0.497	0.215	1.148
		<i>Value</i>	-0.751	0.424	0.472	0.205	1.084
		<i>Axiol.</i>	-0.747	0.434	0.474	0.202	1.109
	<i>Separar./ Div.</i>	<i>Instrum.</i>	-1.347	0.488	0.260	0.100	0.677
		<i>Value</i>	-0.916	0.471	0.400	0.159	1.006
		<i>Axiol.</i>	-1.066	0.488	0.344	0.132	0.896
<i>Children</i>		<i>Instrum.</i>	0.115	0.043	1.122	1.030	1.222
		<i>Value</i>	0.174	0.043	1.191	1.094	1.295
		<i>Axiol.</i>	0.096	0.044	1.101	1.011	1.200
<i>Unemployment (ref. is now)</i>	<i>No</i>	<i>Instrum.</i>	0.038	0.236	1.038	0.654	1.649
		<i>Value</i>	-0.262	0.224	0.769	0.496	1.194
		<i>Axiol.</i>	-0.498	0.216	0.608	0.398	0.928
	<i>Has been within 5 years</i>	<i>Instrum.</i>	-0.134	0.324	0.875	0.464	1.651
		<i>Value</i>	-0.382	0.315	0.683	0.368	1.265
		<i>Axiol.</i>	-0.185	0.294	0.831	0.467	1.478

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(Table continued.)

		<i>Ideal types</i>	<i>Coeff.</i>	<i>St. Err.</i>	<i>Odds</i>	<i>95% CI</i>	
						<i>Low</i>	<i>Up</i>
<i>Age (ref. &gt; 62)</i>	<i>18-30</i>	<i>Instrum.</i>	-1.043	0.259	0.352	0.212	0.586
		<i>Value</i>	-1.657	0.250	0.191	0.117	0.312
		<i>Axiol.</i>	-0.865	0.253	0.421	0.256	0.691
	<i>31-40</i>	<i>Instrum.</i>	-0.861	0.261	0.423	0.254	0.706
		<i>Value</i>	-1.548	0.254	0.213	0.129	0.350
		<i>Axiol.</i>	-1.011	0.261	0.364	0.218	0.607
	<i>41-50</i>	<i>Instrum.</i>	-0.628	0.261	0.534	0.320	0.890
		<i>Value</i>	-1.265	0.252	0.282	0.172	0.462
		<i>Axiol.</i>	-0.829	0.261	0.437	0.262	0.728
	<i>51-62</i>	<i>Instrum.</i>	-0.448	0.267	0.639	0.379	1.078
		<i>Value</i>	-0.790	0.253	0.454	0.276	0.745
		<i>Axiol.</i>	-0.575	0.266	0.563	0.334	0.947
<i>Class (ref. Working)</i>	<i>Service</i>	<i>Instrum.</i>	-0.077	0.132	0.926	0.715	1.199
		<i>Value</i>	-0.459	0.134	0.632	0.486	0.821
		<i>Axiol.</i>	-0.339	0.133	0.712	0.549	0.925
	<i>Self-empl., farmers</i>	<i>Instrum.</i>	-0.227	0.223	0.797	0.515	1.233
		<i>Value</i>	-0.123	0.211	0.884	0.585	1.337
		<i>Axiol.</i>	0.003	0.208	1.003	0.667	1.508
<i>Education (ref. Higher)</i>	<i>Basic or less</i>	<i>Instrum.</i>	0.017	0.211	1.017	0.673	1.538
		<i>Value</i>	0.363	0.223	1.438	0.928	2.226
		<i>Axiol.</i>	0.792	0.232	2.208	1.401	3.478
	<i>Intermed.</i>	<i>Instrum.</i>	-0.075	0.193	0.928	0.636	1.353
		<i>Value</i>	0.228	0.206	1.256	0.838	1.882
		<i>Axiol.</i>	0.425	0.219	1.530	0.996	2.350
<i>Gender (ref. Female)</i>	<i>Male</i>	<i>Instrum.</i>	0.009	0.124	1.009	0.791	1.288
		<i>Value</i>	0.113	0.125	1.120	0.876	1.431
		<i>Axiol.</i>	-0.219	0.125	0.803	0.629	1.027
<i>Place of residence (ref. Rural)</i>	<i>Urban</i>	<i>Instrum.</i>	-0.337	0.155	0.714	0.527	0.968
		<i>Value</i>	-0.446	0.154	0.640	0.473	0.867
		<i>Axiol.</i>	-0.690	0.150	0.502	0.374	0.674

## Appendix F. The social explanations of the ideal types of rationality.

Appendix-table 4. Parameter estimates for the main effects of the multivariate model with interaction terms. Coefficient and its standard error, Odds and 95 % confidence interval for it. (The parameter estimates of the interaction terms are reported in text.)

	<i>Ideal types</i>	<i>Coeff.</i>	<i>Std. Er- ror</i>	<i>Odds</i>	<i>95% CI</i>	
					<i>Lower</i>	<i>Upper</i>
<i>Loans</i>	<i>Risk</i>	0.233	0.178	1.263	0.890	1.790
	<i>Axiological</i>	0.174	0.198	1.190	0.808	1.754
	<i>Value</i>	0.261	0.198	1.298	0.880	1.915
<i>Income</i>	<i>Risk</i>	2.458	0.859	11.684	2.168	62.962
	<i>Axiological</i>	2.033	0.850	7.637	1.444	40.378
	<i>Value</i>	1.102	0.901	3.011	0.515	17.609
<i>Singles</i>	<i>Risk</i>	0.876	0.356	2.401	1.195	4.824
	<i>Axiological</i>	0.538	0.331	1.712	0.894	3.278
	<i>Value</i>	0.248	0.350	1.282	0.645	2.548
<i>Cohabitation</i>	<i>Risk</i>	0.329	0.338	1.390	0.716	2.698
	<i>Axiological</i>	0.323	0.341	1.381	0.708	2.695
	<i>Value</i>	-0.533	0.339	0.587	0.302	1.141
<i>Divorced/separated</i>	<i>Risk</i>	1.181	0.547	3.257	1.115	9.517
	<i>Axiological</i>	0.318	0.559	1.375	0.460	4.111
	<i>Value</i>	0.528	0.539	1.695	0.589	4.876
<i>Widowed</i>	<i>Risk</i>	0.251	0.881	1.285	0.229	7.219
	<i>Axiological</i>	-0.222	0.743	0.801	0.187	3.436
	<i>Value</i>	0.308	0.671	1.361	0.365	5.074
<i>Not unmployed</i>	<i>Risk</i>	-0.294	0.887	0.745	0.131	4.241
	<i>Axiological</i>	-0.845	0.778	0.430	0.094	1.974
	<i>Value</i>	1.206	0.889	3.339	0.585	19.079
<i>Unemployed</i>	<i>Risk</i>	0.183	1.120	1.201	0.134	10.778
	<i>Axiological</i>	-0.702	1.014	0.495	0.068	3.611
	<i>Value</i>	-0.163	1.183	0.849	0.084	8.628

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	<i>Ideal types</i>	<i>Coeff.</i>	<i>Std. Er- ror</i>	<i>Odds</i>	<i>95% CI</i>	
					<i>Lower</i>	<i>Upper</i>
<b>&gt;62</b>	<i>Risk</i>	-0.505	0.566	0.603	0.199	1.830
	<i>Axiological</i>	0.148	0.477	1.159	0.455	2.950
	<i>Value</i>	0.180	0.484	1.198	0.464	3.092
<b>51-62</b>	<i>Risk</i>	0.383	0.453	1.467	0.604	3.561
	<i>Axiological</i>	0.591	0.411	1.805	0.806	4.043
	<i>Value</i>	0.722	0.434	2.059	0.879	4.824
<b>41-50</b>	<i>Risk</i>	0.438	0.426	1.549	0.672	3.572
	<i>Axiological</i>	0.638	0.413	1.893	0.843	4.249
	<i>Value</i>	0.272	0.429	1.313	0.567	3.042
<b>31-40</b>	<i>Risk</i>	0.341	0.423	1.406	0.614	3.220
	<i>Axiological</i>	0.246	0.404	1.279	0.579	2.821
	<i>Value</i>	0.367	0.426	1.443	0.626	3.325
<b>Service</b>	<i>Risk</i>	0.766	0.262	2.150	1.287	3.592
	<i>Axiological</i>	0.366	0.241	1.443	0.899	2.314
	<i>Value</i>	0.102	0.250	1.108	0.678	1.809
<b>Self-employed, farmers</b>	<i>Risk</i>	1.105	0.374	3.020	1.452	6.284
	<i>Axiological</i>	0.795	0.345	2.214	1.126	4.355
	<i>Value</i>	0.423	0.353	1.526	0.765	3.047
<b>Education</b>	<i>Risk</i>	-0.114	0.486	0.892	0.344	2.314
	<i>Axiological</i>	-0.420	0.434	0.657	0.281	1.537
	<i>Value</i>	0.761	0.473	2.140	0.847	5.407
<b>Urban</b>	<i>Risk</i>	0.222	0.272	1.249	0.732	2.131
	<i>Axiological</i>	0.190	0.236	1.209	0.762	1.920
	<i>Value</i>	0.178	0.246	1.195	0.737	1.938