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The popular legitimacy of European health care systems: a multilevel analysis of 24 countries

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This paper provides an empirical study of the between-individual and between-country differences in the popular legitimacy of European health care systems. In order to explain two dimensions of popular legitimacy (satisfaction and support for state responsibility), we assess the impact of self-interest motives (income and personal health), ideology (egalitarianism) and institutional arrangements (level of service provision, and private and government health expenditure). For this purpose, data from the European Social Survey round 4 (ESS-4, 2008-2009) is analysed by means of multilevel models. Universal high support for state responsibility is found, while satisfaction varies considerably, with particularly low levels found in Eastern European and former Soviet Union countries. It appears that individuals are not guided by self-interest motives and ideology alone. In addition to these factors operating in interaction, the results suggest that state-provided health care might be in the interest of all. Introducing a patient perspective could advance our understanding of health care legitimacy.

Keywords: popular legitimacy, health care systems, Europe, self-interest, ideology

1. Introduction

During the last few decades, European health care systems have been the subject of almost continuous policy reforms (Bonoli and Palier, 1998). Many of these reforms have been ad hoc interventions aimed at containing rising expenditure on health care (Mossialos, 1997). With regard to the financing of health care, there is a notable evolution towards growing reliance on private expenditure, from out-of-pocket payments and health insurance schemes (Thomson, Foubister and Mossialos, 2010). Health care reform will remain high on the political agenda, given that the financial sustainability of European health care systems will be put to the test even more in coming years. While the current economic crisis undermines the financial foundations of health care systems, demand on them is increasing as a result of continuous advances in medical science and the ageing of European populations (Gevers, Gelissen, Arts and Muffels, 2000; Wendt, Kohl, Mischke and Pfeifer, 2010).

The debate on the privatization and sustainability of health care brings the question of public legitimacy to the fore. Are the young, active and healthy still willing to contribute to the increasingly expensive health care of the rapidly growing number of elderly people? What are the views of citizens on the role governments should play in the organization of health care systems? Do specific institutional settings lead to higher levels of popular legitimacy? These are important questions, given that in a democratic society, the legitimacy of government institutions is a prerequisite for citizens to put their trust in these arrangements (Kohl and Wendt, 2004) and to accept paying taxes and contributions (Kohli, 2005).

In this paper, we provide an empirical study of the popular legitimacy of European health care systems. We attempt to explain between-individual and between-country differences in perceived legitimacy, using self-interest and ideological dispositions, as well as institutional characteristics, as predictors. For this purpose, data from the European Social Survey round 4 (ESS-4, 2008-2009) is analysed by means of multilevel models. By focusing on a single branch of the welfare state, namely health care, we subscribe to the view that individuals can have differentiated perceptions according to the specific welfare programmes and target groups concerned (Jaeger, 2006; van Oorschot and Meuleman, 2012). Therefore, different welfare programmes deserve separate attention. A distinctive feature of health care systems is that their main component constitutes the provision of services and not of monetary transfers, as in for example pension schemes or unemployment plans (Bambra, 2005; Wendt, Kohl, Mischke and Pfeifer, 2010). Furthermore, the risks covered are universal (in the sense that all individuals make use of health care services at certain stages of their lives) and largely beyond individual control.

We believe that this paper contributes to the field of welfare legitimacy in various ways. First, we argue for a multi-dimensional operationalization of health care legitimacy. Both the preferred role of government and the satisfaction with health care systems are important components and should be studied in combination (for a similar approach, see Wendt, Kohl, Mischke and Pfeifer, 2010). Second, the number of European countries

included in the ESS-4 is larger than in previous similar datasets, which enables us to include various Eastern European and former Soviet Union countries in the study. This is an important addition, given the specificity of the evolution of health care systems in this region (Borisova, 2011; Mossialos, 1997; Thomson, Foubister and Mossialos, 2010; Wagstaff and Moreno-Serra, 2009). Third, rather than studying the effects of self-interests and ideologies on perceived legitimacy separately, we apply an interaction model as suggested by Gelissen (2000).

In the following section, we give an overview of previous research concerning the perceived legitimacy of health care institutions and the three dominant theoretical stances in the field of welfare arrangements: self-interest, ideology and institutional characteristics. Data, measurement and analysis strategy are explained in the next section. Finally, the results are reported and elaborated on in the discussion and conclusion, with attention paid to policy implications and suggestions for further research.

2. Health care legitimacy: theory and previous research

2.1 Legitimacy as a multi-dimensional concept

There are strong theoretical arguments to assume that the popular legitimacy of institutions such as health care is a multi-dimensional concept. Rothstein (2001) describes how perceived legitimacy depends on both public approval of the value of a certain policy (substantial justice) and the way it is implemented in practice (procedural justice). Substantial justice in terms of a health care system rests on the assumption that citizens to some degree endorse the guiding principles on which the system is founded (Kohl and Wendt, 2004). Despite a slightly increasing reliance on private funding, European health care systems share the basic principle that governments play a dominant role in regulating the financing, production and consumption of services. Therefore, in the European setting the first dimension of health care legitimacy implies the normative belief that extensive public sector responsibility for health care is preferable (Roller, 1995). Procedural justice in this regard presupposes positive evaluations by citizens of how their government has actually implemented health care services relative to what it had promised (Rothstein, 2001). In contrast to the first dimension, this second dimension of legitimacy thus depends on actual experiences of received care (Kohl and Wendt, 2004; Rothstein, 2001). Analysing the preferred role of government and satisfaction with health care as two distinct but interrelated dimensions is indispensable in developing a more complete and nuanced view of the popular legitimacy of health care systems (Kohl and Wendt, 2004; Wendt, Kohl, Mischke and Pfeifer, 2010).

Previous empirical research has shown that these two dimensions do indeed produce different results. While support for government intervention in health care is strong across European countries (Gelissen, 2000; Jaeger, 2006; Marmor, Okma and Latham, 2010; Mossialos, 1997; Wendt, Kohl, Mischke and Pfeifer, 2010), reported levels of satisfaction are much lower and show substantial variation between countries (Kohl and Wendt, 2004; Mossialos, 1997; Wendt, Kohl, Mischke and Pfeifer, 2010).

2.2 Predictors of health care legitimacy

In relevant literature, three broad sets of predictors have been proposed to explain individual-level and country-level differences in welfare legitimacy: interests, ideologies and institutions (Blekesaune and Quadagno, 2003). In this section, we detail the theoretical expectations for the relationship between these predictors and the two aforementioned dimensions of health care legitimacy (i.e. support for government intervention and satisfaction with current health care).

Self-interest - A first line of thinking starts from the assumption that self-interest is a motivational basis for perceptions regarding public welfare arrangements such as health care. The self-interest argument rests on the rational choice theory (Becker, 1976; Downs, 1957), and assumes that individual choices are driven by instrumental rationality and the pursuit of individual gain (Taylor-Gooby, 1999; Kangas, 1997). According to this argument, different levels of health care legitimacy will be found between individuals who benefit directly from the health care system and net payers who contribute more than they consume (Gevers, Gelissen, Arts and Muffels, 2000; Jaeger, 2006). Several factors can be seen as indirect indicators of the extent to which individuals benefit from the health care system. First, old age and unfavourable health conditions are obviously related to increased health care consumption. Second, socio-economic status (as indicated by educational level, labour-market position or income) implies a combination of health risk and the resources to protect against it (Svallfors, 1991). Individuals with a lower socio-economic status have substantially higher probabilities of being confronted with health problems (Mackenbach et al., 2008; Marmot et al., 1991; Robert and House, 2000; Whitehead and Dahlgren, 1991) and are to a large extent dependent on public health care provision because they lack the financial means to obtain private care (Van Oorschot, 1999).

We hypothesize that self-interest variables affect both dimensions of health care legitimacy. According to the self-interest argument, the elderly, people in poor health and individuals with a lower socio-economic status are expected to be more supportive of public health care, because government intervention serves their material interests. Since the aforementioned self-interest factors shape concrete experiences of health care, they can also lead to different satisfaction levels compared to groups who have less contact with health care providers (Wendt, Kohl, Mischke and Pfeifer, 2010). Literature concerning patient satisfaction suggests that low-income groups receive a lower standard of care, resulting in lower satisfaction levels (Hall and Dornan, 1990; Malat, 2001). However, it has also been argued that lower-educated groups have lower expectations regarding health care, as a result of the lower degree of respect these groups experience in their daily lives (Hall and Dornan, 1990; Malat, 2001; Sitzia and Wood, 1997).

Although the self-interest argument plays a dominant role in relevant literature (for example, see d'Anjou et al., 1995; Gevers, Gelissen, Arts and Muffels, 2000; Jaeger, 2006; Kangas, 1997; Linos and West, 2003), it can be criticized on theoretical as well as empirical grounds. Self-interest theory presupposes that individuals are well-informed and behave rationally. In the specific case of health care, lay consumers encounter a serious lack of information with regard to the complex and technical details of the care provided (Taylor-Gooby, 1999:

104). Individuals are also uncertain about the medical conditions they might encounter during their life course. Since every individual could become reliant on health care, it could be argued that good-quality healthcare is in the interest of the whole population, and not only of those in poor health. In this sense, an individual could secure their own best interests by securing the interests of the group as a whole (Arhinful, 2003: 145). In this context of uncertainty, and given that health care is a quasi-public good, Taylor-Gooby (1999) argues that trust in the health care system might play a more important role than self-interest. Also empirically speaking, evidence for the self-interest argument is very mixed. Gevers, Gelissen, Arts and Muffels (2000) reported that support for welfare state provision of health care is stronger among those in poor health, but that no effects from age or educational attainment were found. Income even had an inverse effect, with greater support among those at the higher end of the income-distribution scale. Wendt, Kohl, Mischke and Pfeifer (2010), found the anticipated effect of age on support for government intervention as well as on satisfaction, but did not report any effect from social class. The latter study also shows that the dimensions of health care legitimacy have partially different antecedents. Good personal health is found to increase satisfaction with existing health care, but is unrelated to support for government intervention. Further, and contradicting the results found by Gevers et al., high-income groups are found to be less supportive of government intervention, but are at the same time more satisfied with prevailing health care services.

Ideological disposition - A second theoretical framework emphasizes that the genesis of popular legitimacy is a process that is too complex to be influenced by self-interest alone, and argues that normative considerations, value frameworks and ideological beliefs also play a role. According to this theory, opinions about health care are embedded within a broad and coherent system of ideological preferences (Feldman and Zaller, 1992; Jaeger, 2006). This ideological framework underpins the formation of attitudes and perceptions, in the sense that it serves as a set of guiding principles in the life of an individual (d'Anjou, Steijn and Van Aarsen, 1995; Gevers, Gelissen, Arts and Muffels, 2000). In this paper, we focus on a crucial ideological dimension, namely egalitarianism. Egalitarianism reflects the general idea that the well-being of all people is important, and that therefore overly large economic differences are undesirable. Public health care usually comprises components of solidarity and therefore has consequences for the realization of an egalitarian worldview. As a result, egalitarianism can be expected to affect whether citizens perceive health care systems as legitimate or not.[1]

With regard to the first dimension of legitimacy, individuals who endorse the principle of equality can be expected to be more supportive of public health care systems. Probably due to a lack of available data, the effect of ideological factors is under-explored in health care legitimacy research. To the best of our knowledge,

[1] Some might argue that welfare legitimacy is an indistinguishable component of a person's ideological position, and that therefore this argument is tautological. However, according to our view ideological preferences refer to broad and trans-situational principles, while the dimensions of healthcare legitimacy refer to evaluations of concrete objects. As such, ideological dispositions (such as egalitarianism) are conceptually different from health care legitimacy. The relationship between these concepts is an empirical matter.

Gevers, Gelissen, Arts and Muffels (2000) is the only relevant comparative study to include ideological positions. This study reached the conclusion that people of a politically left orientation are more supportive of public health care arrangements, although the effect is quite modest. Studies on the relationship between ideology and satisfaction with current health care (i.e. the second dimension of legitimacy) are lacking to date. However, given the preference for more state involvement and the resulting higher expectations, it can be expected that lower satisfaction levels might be found among those endorsing egalitarian principles.

The effects of self-interest and ideology are not necessarily mutually exclusive. For example, Gevers, Gelissen, Arts and Muffels (2000) suggest that the effect of self-interest is mediated through ideology. In other words, social-structural variables shape ideological positions, which in turn affect perceived welfare legitimacy. Alternatively, Gelissen (2000) suggests that the interplay between interests and ideologies might be a matter of moderation rather than mediation. Such an interaction effect would imply that the effect of ideologies might differ between different interest groups. In this paper, the interactions between ideology, and health and income are focused upon, since these latter indicators are most obviously related to the actual level of health care use, which might in turn impact upon perceived legitimacy. In line with the rationale of 'game theory', that your own success depends upon the other's choice (Hardin, 1968; Myerson, 1991), it could be expected that for both support for public health care arrangements and for satisfaction, the effect of an egalitarian viewpoint would be stronger for those having more encounters with health care, i.e. people with poor health. Besides, if trust rather than true self-interest motivation is at play (Taylor-Gooby, 1999), a stronger effect from egalitarianism among those in poor health is also expected. Since lower-income groups are more heavily dependent on public health care arrangements and are greater users of health services, a similar reasoning holds here. As such, we expect a stronger effect from the ideological views of these groups on support for state responsibility. With regard to satisfaction, these groups are hypothesized to have also a stronger effect from egalitarianism, since confidence about receiving health care is lower among low-income groups (Wendt, Mischke, Pfeifer and Reibling , 2011).

Institutional characteristics - A third and final set of potentially relevant predictors is found at the country level rather than at the individual level. A dominant hypothesis in the field is that individual perceptions of health care legitimacy are shaped by the institutional characteristics of the welfare state (Blekesaune and Quadagno, 2003; Esping-Anderson, 1990; Korpi, 1980; Papadakis and Bean, 1993). Much research on welfare attitudes departs from Esping-Anderson's regime typology (Gelissen, 2000). Yet, this typology is limited to the work-welfare nexus (Ferragina and Seeleib-Kaiser, 2011) and has been criticized for ignoring welfare service provision, rendering its application to the field of health care problematic (Alber, 1995; Bambra, 2005; Jensen, 2008; Moran, 2000; Reibling, 2010; Wendt, 2009). Accordingly, different typologies for health care systems have been developed (for an overview, see Wendt, Frisina and Rothgang, 2009; Reibling, 2010). However, European health care systems seem too divergent to fit into the ideal-type distinction between National Health Service (NHS) and Social Health Insurance (SHI) systems (Wendt, Kohl, Mischke and Pfeifer, 2010; Wendt, Frisina and Rothgang, 2009). This applies to the EU-15 countries (Wendt, Frisina and Rothgang, 2009)

and the Eastern European and former Soviet Union countries (Borisova, 2011). Instead, the few existing cross-national studies on health care legitimacy have used the institutional characteristics of health care systems to capture the institutional setup (Gevers, Gelissen, Arts and Muffels, 2000; Kohl and Wendt, 2004; Wendt, Kohl, Mischke and Pfeifer, 2010). Similarly, we argue for the use of a multi-dimensional operationalization of institutional characteristics, rather than applying a general welfare or health care typology. Following the lead of Kohl and Wendt (2004), we conceptualize the impact of institutional settings by drawing on what is called the 'production process of health care services'. In this model, attention is paid to both the input (expenditure, number of personnel, facilities, etc.) and output (services delivered, quality of those services and subjective satisfaction with the system) processes of the health care system. Expenditure is measured by including figures on government and private expenditure on health. However, measuring the real output of the health care system is a very complicated methodological challenge (Allin et al., 2007). As with many other studies, we do not have information about the actual quality of health services. In order to approximate this as closely as possible, we use a similar approach to Kohl and Wendt (2004) and formulate an index on the level of service provision, which captures the total input of health services.

It can be hypothesized that higher support for government intervention in organizing health care will be found in countries where there is generous government spending (Gevers, Gelissen, Arts and Muffels, 2000) and a high level of service provision. Similarly, it has been previously argued that support is higher where the proportion of private financing is lower (Ardigo, 1995). However, previous research has shown that institutional effects on support for government intervention are relatively weak (Wendt, Kohl, Mischke and Pfeifer, 2010). In contrast, satisfaction levels are expected to be influenced more by institutional characteristics because of the association with actual experiences (Wendt, Kohl, Mischke and Pfeifer, 2010). Using aggregated measurements, Kohl and Wendt (2004) showed that a higher absolute level of health care expenditure is strongly related to higher levels of satisfaction. This is not a surprising finding, given that this factor also reflects the general economic development of a country. Similarly, higher satisfaction levels can be expected in the case of lower proportions of private expenditure. However, no significant effect was found by Wendt, Kohl, Mischke and Pfeifer (2010). In the same study, the largest institutional effect on satisfaction was found for a numerical input (the number of general practitioners). At the aggregated level, the availability of health care facilities is also shown to be positively related to satisfaction (Kohl and Wendt, 2004).

In sum, based on self-interest we expect older, sick, low-income, low-educated, unemployed and pensioned citizens to be more supportive of government responsibility for organizing health care. In addition, higher levels of support are also hypothesized for those holding a more egalitarian view, and in countries with a larger government expenditure on health care, a smaller private share of expenditure, and a high level of service provision. Next, we assume that old age and poor health will impact upon satisfaction levels. The low-income and lower educated are expected to be more satisfied with the country's health care system, while egalitarians are assumed to be less satisfied. Lastly, countries with high government expenditure on health care, a smaller

proportion of private expenditure and a high level of service provision are expected to report higher satisfaction levels among their citizens.

3. Data and methods

3.1 Dataset: European Social Survey

Data for this study was taken from the fourth round of the European Social Survey (ESS-4, 2008-2009). The ESS is a biennial survey designed to record and explain Europe's changing institutions, attitudes, beliefs and behaviour patterns. Respondents were selected using a strict probability sample of the resident national population aged 15 or above living in private households. Data was collected via face-to-face interviews, each of around an hour in duration (European Social Survey, 2007). Response rates varied at around 63% (European Social Survey, 2009). Data from 24 countries is included in our study: Belgium, Switzerland, the Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, the United Kingdom, Greece, Croatia, Hungary, Ireland, Latvia, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Sweden, Slovenia and Ukraine. Turkey and Israel are excluded, because they are not European countries. Four other countries are excluded because of missing information on the design weight (Lithuania) or household income (Bulgaria, Slovakia and Cyprus). The total number of respondents is 46,591.

3.2 Indicators

Dependent variables - Two dimensions of legitimacy are studied in this paper: the responsibility of the state for organizing health care and satisfaction with health care services. The former is assessed using responses to the question to what extent "it should be the government's responsibility to ensure adequate health care for the sick?" Answers were recorded on a 10-point scale, from 'not at all' (0) to 'entirely' (10). Satisfaction with health care services is based on an index that combines the responses to two questions. First, "Please say what you think about the overall state of health services in [country] nowadays?" Answers ranged from 'extremely bad' (0) to 'extremely good' (10). For the second item "Please tell me how efficient you think the provision of health care in [country] is", the answers varied from 'extremely inefficient' (0) to 'extremely efficient' (10). The large correlation (0.673) between these two items points to the unidimensionality of the index.

Independent variables: individual level - To examine whether self-interest motives shape opinions on the legitimacy of European health care systems, the age group, household income level, level of educational attainment, labour-market position and health condition of the respondents are included in the analyses. Age is assessed using five categories (15-20; 21-35; 36-49; 50-64; 65+). Net household income was questioned by means of deciles of the actual household income range in the given country. It is weighted based on the modified OECD (Organization for Economic Co-operation and Development) scale, which gives a weight of 1 to the first adult in a household, 0.5 to all other adults (> 14 years old) and 0.3 to children (Hagenaars et al., 1994). To enhance the comparability of the scores across high-income and middle-income countries in the sample, we created five household income categories relative to each country's median income: less than 50%

of the country's median income, 50-80%, 80-120% (the reference category) and more than 120%. Information on household income was missing for 21.3% of the respondents. They are included in the analyses, but in a separate category. The level of education of respondents is assessed using five categories based on the modified ISCED-97 (International Standard Classification of Education) provided by the ESS-4. The first category includes respondents who did not complete primary education and those who completed primary or the first stage of basic education at most. The other categories are 'lower secondary or second stage of basic', 'upper secondary', 'post-secondary-non-tertiary' and 'tertiary'. The latter comprises individuals who completed the first or the second stage of tertiary education and is used as the reference category. To describe the labour market position, five categories ('student'; 'unemployed'; 'sick/disabled'; 'retired'; 'other') are compared with employed respondents. Respondents were asked to indicate their state of health, using the question "how good is your health in general?" Answer categories were 'very good', 'good', 'fair', 'bad' or 'very bad'. Self-rated health is one of the most widely used indicators of health in survey research (Bardage et al., 2005) and has shown to be a strong independent predictor of mortality (Burstrom and Fredlund, 2001; DeSalvo et al., 2006). Others have recoded this item into two (Wendt, Kohl, Mischke and Pfeifer, 2010) or three (Gevers, Gelissen, Arts and Muffels, 2000) categories. However, additional analysis (results not reported) showed a linear effect from health and we therefore introduce this variable linearly into the analysis. We recoded the health variable, therefore higher scores designate better health.

The ideology hypothesis is assessed by means of an index capturing the egalitarian viewpoint of respondents. Respondents indicated to what extent they agreed with the following statements: "For a society to be fair, differences in people's standard of living should be small" and "Large differences in people's incomes are acceptable to properly reward differences in talents and efforts". The first item was recoded, therefore higher scores point to a more egalitarian stance. Finally, gender is included in the analysis (0 = male, 1 = female), since several studies have shown that men and women hold differing views regarding the legitimacy of the welfare state (Gelissen, 2000) and the health care system in particular (Blekesaune and Quadagno, 2003; Gevers, Gelissen, Arts and Muffels, 2000).

Independent variables: institutional characteristics - To assess the role of the institutional context of a country's health care system, we include two financial indicators (government expenditure and private expenditure) and a composite indicator for the level of service provision. All figures were obtained from the World Health Organization[2] (http://data.euro.who.int/hfadb/). Government expenditure on health is indicated in PPP (Purchasing Power Parity) dollars (absolute figure). Private expenditure is expressed as a percentage of the total expenditure on health. This relative measurement reflects the priority the government gives to health care, given the prevailing level of economic development and wealth (Kohl and Wendt, 2004). In line with Wendt and Kohl (2010), we included figures for specialists, general practitioners, pharmacists and nurses, and midwifery personnel for the composition of the index on the level of service provision (see Table 1). Each

[2] Data from the OECD was available for only 19 of the 24 countries. Robustness checks on this restricted sample showed that the effect of the level of service provision does not differ according to the data used.

indicator was firstly expressed as a percentage of the EU average. The index for the level of service provision was then constructed as the average value of these percentages.

(insert Table 1 around here)

3.3 Statistical methods

To test our hypotheses, we make use of multilevel models. This approach enables us to estimate the effects of independent variables at both the country and the individual level and takes into account the dependence between respondents from the same country. It also allows calculation of the intraclass correlation coefficient (ρ), which explores the proportion of variance that is explained by country-level characteristics (Hox, 2010). To allow comparability of the coefficients and interpretation of the interactions, metric independent variables are standardized (Hox, 2010). Missing data is deleted list-wise because of low rates (0.0% - 3.1%) for all dependent and independent variables except for income, where missing values are assigned to a separate category. In order to ensure the generalizability of the sample, design weight is used to correct for slightly different probabilities of selection (European Social Survey, 2007). All models are estimated using the MIXED procedure implemented in SPSS version 19.

4. Results

Before reporting the findings of the multilevel models, we start with some descriptive analyses. Figure 1 shows that overall, Europeans seem to be very supportive of the role of government in organizing health care (overall mean: 8.65; SD: 1.71). Between-country variation in support for government intervention is limited (the intraclass correlation equals 6.5% = 0.19/[0.19 + 2.73]). By contrast, satisfaction levels are substantially lower (overall mean: 5.13; SD: 2.27) and vary considerably between European countries. In general, the former Soviet Union countries followed by the Eastern European countries, report (very) low satisfaction, with the lowest level being found in Ukraine (2.51). The most satisfied are the Swiss (6.95) and the Belgians (7.23). This large variation between countries is also indicated by the high intraclass correlation coefficient of 27.5% (1.42/[1.42 + 3.74]). These findings provide initial support for distinguishing between the two aspects of legitimacy.

(Insert Figure 1 around here)

To gain insight into the determinants of both dimensions of legitimacy, we turn to the multilevel analysis (see Table 2). For each of the two dependent variables, two models are estimated (each with a different interaction term included). We start by describing individual-level differences in perceived legitimacy, before discussing the impact of country-level characteristics. Then, for each set of predictors the relationship with the first aspect (support for government intervention – Models 1a and 2a) is discussed, before the relationship with satisfaction (Models 1b and 2b).

Some evidence for the self-interest hypothesis is found (see Table 1, Model 1a), as people with low incomes, pensioners and women are more in favour of public health care arrangements, while the two youngest age groups are less so. However, the contention that the oldest age group (the largest consumers of health care) are the biggest supporters of public health care arrangements due to self-interest proves not to be supported. After controlling for ideological beliefs, the oldest age group is actually less in favour of public health care arrangements. The finding that the lower educated, who are on average more frequent users of health care, are less in favour of public health care arrangements than people with a tertiary educational degree, also contradicts the self-interest hypothesis. Models 1b and 2b illustrate that satisfaction levels are also shaped by self-interest variables to some extent. It appears that pensioners and the sick and/or disabled are more satisfied, while women are less satisfied. The observation that unhealthy respondents report lower satisfaction levels suggests that the frequency of visits to doctors seems to impact on satisfaction levels. Clear differences related to age can also be found. Respondents younger than 36, as well as the oldest age group, seem to be more satisfied with their country's health care systems, compared to the middle aged. The lower educated are more satisfied with the services, while no differences are found between income groups.

(Insert Table 2 around here)

Another line of reasoning argues that attitudes towards the legitimacy of welfare state policies are predicated by individual ideological beliefs. Individuals who endorse egalitarian principles are indeed the greatest supporters of public health care provision (Table 1, Model 1a) and seem to be less satisfied (Table 1, Model 1b). From additional analyses (results not reported) it appears that the main effect from egalitarianism (models without interaction-terms) is almost as large for satisfaction levels (B= -0.15, SE = 0.01) as for state responsibility (B = 0.19, SE = 0.01). However, these processes seem to be highly interrelated rather than exclusive. Ideology and self-interest indicators appear to interact in an interesting way. With regard to support for government responsibility in organizing health care, the effect of egalitarianism is stronger for those in poor health (see Figure 2). While non-egalitarians in good health are more supportive of state responsibility than non-egalitarians in poor health, the opposite is true for egalitarians. For the latter, the highest support for state responsibility is found among those in poor health. For satisfaction levels, the effect of egalitarianism is stronger among the two lowest-income groups, compared to respondents whose income is at least 80% of the country's median income (see Figure 3). This results in higher satisfaction levels among low-income non-egalitarians than for non-egalitarians with a higher income. Conversely, among egalitarians the highest-income groups are more satisfied with the health care system than their counterparts with a lower income. In relation to health and egalitarianism, it seems that satisfaction levels among non-egalitarians do not differ according to health status (Figure 4). However, the effect of egalitarianism becomes stronger when better health is reported, resulting in large disparities in satisfaction among egalitarians. The least satisfied are the unhealthy respondents subscribing to more egalitarian values.

(insert Figures 2, 3 and 4 around here)

A last theoretical stance explores how the institutional characteristics of a national health care system affect its popular legitimacy. These characteristics do not seem to affect attitudes on state involvement, but they do affect satisfaction. Government expenditure seems to be a very important determinant of satisfaction, which is also illustrated by the observation that it can explain 18% of the between-country variation in satisfaction (0.18 = [1.44 - 1.18]/1.44, results not shown). The level of service provision does not show a significant association with satisfaction, independent from government expenditure. However, when included separately in the model, it becomes clear that citizens are more satisfied in countries with a higher level of service provision (0.56, SD: 0.21, results not shown).

Discussion and conclusion

The objectives of this paper were to study attitudes concerning the legitimacy of public health care in 24 European countries and to explore to what extent these are shaped by self-interest motives, ideology and institutional characteristics. Analysing data from the fourth round of the European Social Survey (ESS-4), several important conclusions can be drawn.

Firstly, consistent with other studies (Gelissen, 2000; Gevers, Gelissen, Arts and Muffels, 2000; Jaeger, 2006; Kohl and Wendt, 2004; Marmor, Okma and Latham, 2010; Wendt, Kohl, Mischke and Pfeifer, 2010), we find overwhelming support in all European countries for government intervention in health care provision. This high level of support can be interpreted in the light of the general character of health risks (Gevers, Gelissen, Arts and Muffels, 2000). In contrast, satisfaction levels seem to vary considerably among Europeans (Kohl and Wendt, 2004; Mossialos, 1997; Wendt, Kohl, Mischke and Pfeifer, 2010). The Eastern European and former Soviet Union countries in particular show very low satisfaction levels. This is not such a surprising finding, two decades after the collapse of the Soviet Union and the societal disruption that resulted from it (UNICEF, 1997). In addition, it is very likely that the lower satisfaction levels go hand in hand with the relatively poor (mental) health of Eastern Europeans (Carlson, 2004; Missinne and Bracke, 2012) and their lower life expectancy (for a review, see Bobak and Marmot, 1996; Brainerd and Cutler, 2005). In addition, levels of satisfaction seem to vary substantively within this region, which can also be linked to health care outcomes. Indeed, a recent study has shown that what are termed the 'restricted quasi-Semashko' health care type (among others, Ukraine) and the 'regional diverse' type (Russia) are the worst performing in terms of mortality, while the liberalized countries (among others, the Czech Republic) and reformed countries (among others, Hungary, Poland and Latvia) perform the best (Borisova, 2011). This trend is reflected in the satisfaction levels.

Next to the small between-country variation in support for government arrangements in health care, small differences are also noticeable between groups of individuals. Some support is found for the self-interest hypothesis in the observation that support for state involvement is lower among younger age groups, and higher among people with a low income (similar to Wendt, Kohl, Mischke and Pfeifer, 2010), pensioners and women (similar to Blekesaune and Quadagno, 2003; Gevers, Gelissen, Arts and Muffels, 2000). However, the

contention that individuals behave truly rationally is challenged by the empirical observation that state responsibility is not perceived differently by certain groups where self-interests could be easily imagined, such as the sick or disabled, the unemployed (in contrast to Blekesaune and Quadagno, 2003; Gevers, Gelissen, Arts and Muffels, 2000) and the lower educated (similar to Gelissen, 2000). These findings support the claim by Taylor-Gooby (1999) that receiving quality health care is in the interest of all individuals and that trust in receiving such care is essential. Notably, lower levels of trust in receiving care are reported among those in poor health and among the lower educated (Wendt, Mischke, Pfeifer and Reibling, 2011).

In literature regarding the welfare state, only the study by Wendt, Kohl, Mischke and Pfeifer (2010) has addressed individual predictors of satisfaction with health care. Our findings partly corroborate their study, as these authors also reported higher satisfaction levels among healthy individuals and the oldest age group. However, contrary to this study, we find higher satisfaction levels among younger respondents, while no differences are found across income levels. The contradiction of this last finding might result from the alternative, more subjective indicator of financial means used by the previous authors. In contrast to income, we find that education matters to a great extent. We have reason to believe that the higher satisfaction levels reported by the lower educated result from the lower expectations these groups hold. Drawing on the extensive literature concerning patient satisfaction (for an overview, see Sitzia and Wood, 1997), previous studies have also found older (Cohen, 1996; Lee and Kasper, 1998) and healthy people (Hall and Dornan, 1990; Lee and Kasper, 1998) to have higher levels of satisfaction. With regard to gender, results are inconsistent, with most studies reporting higher satisfaction levels among women (Hall and Dornan, 1990) or no significant association (Cohen, 1996).

The egalitarian values held by individuals seem to underpin their evaluation of health care legitimacy, with higher support for public health care arrangements (see also Gevers, Gelissen, Arts and Muffels, 2000) and lower satisfaction levels among egalitarians. It appears that the main effect of egalitarianism on satisfaction is almost equal in extent as its effect on state responsibility. Since satisfaction levels are even more likely to be shaped by actual experiences, this observation corroborates the contention that ideological dispositions are conceptually different from perceptions of health care legitimacy.

As already stated by Taylor-Gooby (1985), and Gevers, Gelissen, Arts and Muffels (2000), our results show that self-interest motives and ideology are indeed not mutually exclusive, but operate in interaction. For people in poor health, egalitarianism is more strongly associated with support for state responsibility. With regard to satisfaction, a stronger association with egalitarianism is found among people in poor health and among low-income groups. In the latter case, this results in opposite associations of income with satisfaction, depending on ideological stance. To date, only one author (Gelissen, 2000) has examined such interactions explicitly and with regard to the welfare state in general, instead of the health care system in particular. Future research will have to examine whether these interactions can be explained, as hypothesized, by the lower levels of trust in

receiving safe and high-quality medical care (see Wendt, Mischke, Pfeifer and Reibling, 2011) or whether other mechanisms are involved.

Finally, the results are in line with our hypothesis that institutional characteristics exert greater influence on satisfaction levels than on support for state responsibility, due to a stronger relationship with personal experiences. In particular, the absolute financial input by government (see also Wendt, Kohl, Mischke and Pfeifer, 2010) seems to be the most prevalent institutional factor. It is somewhat counterintuitive that the level of service provision, which is most directly noticeable to patients, is less strongly associated with satisfaction than the absolute levels of government expenditure (see also Kohl and Wendt, 2004). However, the relationship between monetary input and the level of service provision is not straightforward and depends on public policy (Wendt and Kohl, 2010). In addition, caution over over-interpretation is warranted, as measurements of health expenditure are rather hard to interpret in transition countries (Borisova, 2011). For example, the transition to new schemes (either patient-based or fee-for-service) in post-communist countries involved increased government health spending, but did not automatically lead to improved health outcomes (Wagstaff and Moreno-Serra, 2009; Moreno-Serra and Wagstaff, 2009). It would be interesting for future research to bring the patients' perspective into the picture, as suggested recently in health care typology literature (Borisova, 2011; Reibling, 2010; Wendt and Kohl, 2010). The difficulty in assessing the level of service provision (Kohl and Wendt, 2004) and the actual quality of health services (real output) (Campbell, Roland and Buetow, 2000) hamper research. This limitation also hindered us in empirically assessing the theoretical reasoning that satisfaction levels are more related to actual experiences than are attitudes concerning the role of government. However, this argument was supported by the findings of Wendt, Kohl, Mischke and Pfeifer (2010), who showed a significant relationship between the quality of services and satisfaction, using the amount of time spent by doctors as an indicator. A further limitation is that the possible underlying mechanisms between the predictors and the aspects of legitimacy remain unclear. Very recently, one study using the same data (Svallfors, Kulin and Schnabel, 2012) examined whether risk perceptions, beliefs about welfare use and welfare sustainability, and values, can explain different attitudes towards state involvement. However, they conclude that mechanisms should be sought elsewhere. With regard to satisfaction, knowledge about the intervening mechanisms is also lacking (Lee and Kasper, 1998). Kohl and Wendt (2004) have pointed to the normative expectations citizens hold with regard to the health care system, but we were unable to include these in our study. However, little evidence exists that satisfaction automatically results when expectations are met (Thompson and Sunol, 1995). In this paper, we have only concentrated on an overall pattern of attitudes regarding health care. Future research might benefit from a more in-depth analysis of differences between countries.

In conclusion, Europeans continue to demand that their governments organize health care services, despite the important (future) challenges of financial sustainability. This indicates that future attempts for retrenchment of government intervention might face strong opposition. However, the large disparities between European countries in satisfaction levels regarding care, and the very low levels reported in the

Eastern European and former Soviet Union countries in particular, should alert policy makers if they want to prevent erosion of the perceived legitimacy of health care systems. Furthermore, the multi-dimensional nature of health care legitimacy and the non-unidirectionality of its predictors should encourage researchers to investigate this topic in greater detail.

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Tables and figures

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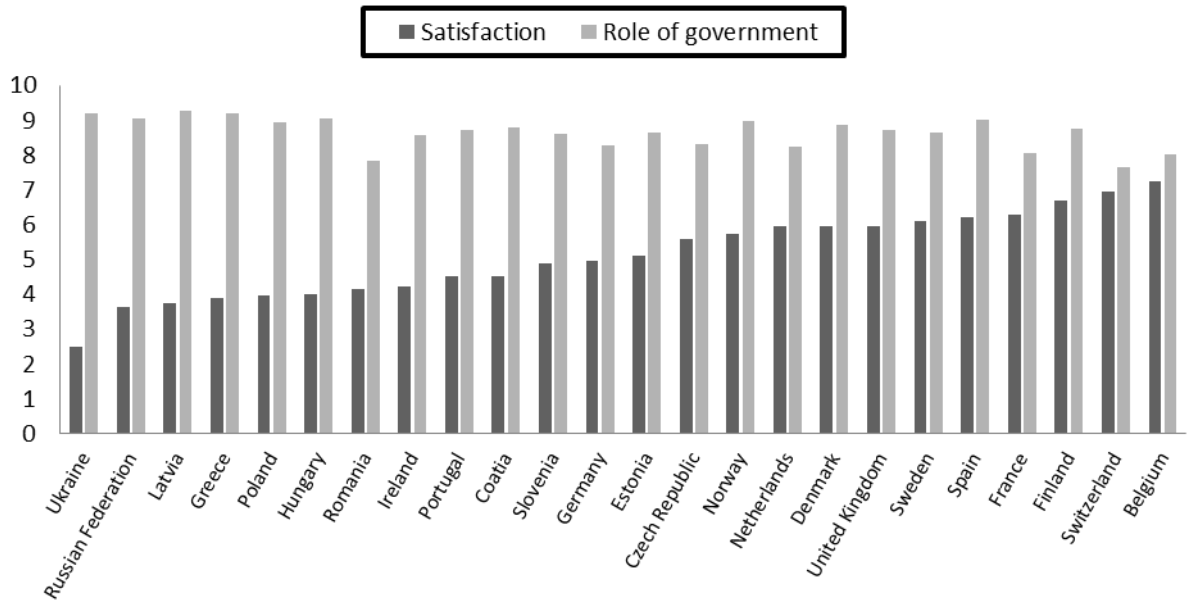

Figure 1 : Country mean satisfaction levels and support for the role of government in organizing health care in Europe, ESS-4, 2008-2009 (weighted data)

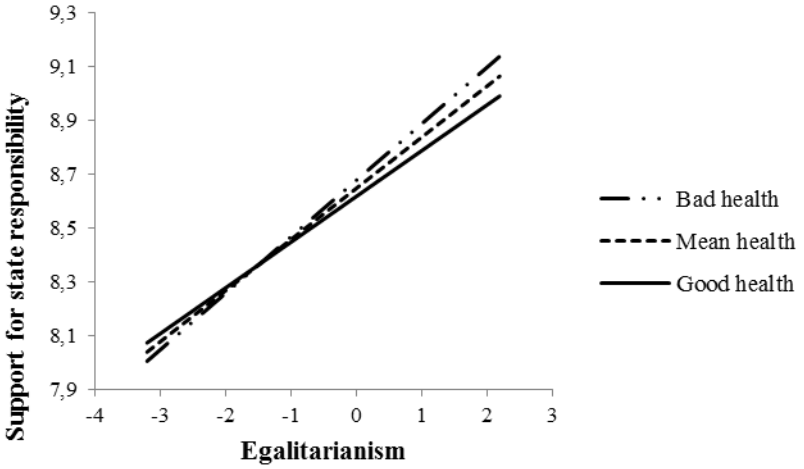

Figure 2: The relationship of egalitarianism and support for state responsibility with the country's healthcare system in Europe by health status, ESS-4, 2008-2009 (weighted data)

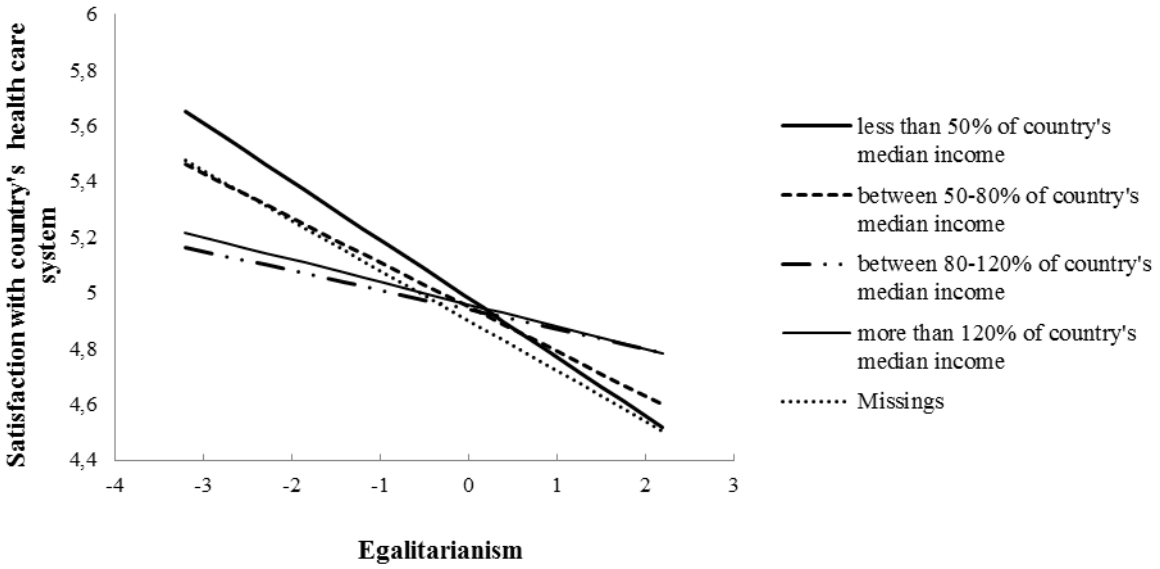

Figure 3: The relationship of egalitarianism and satisfaction with the country's healthcare system in Europe by income, ESS-4, 2008-2009 (weighted data)

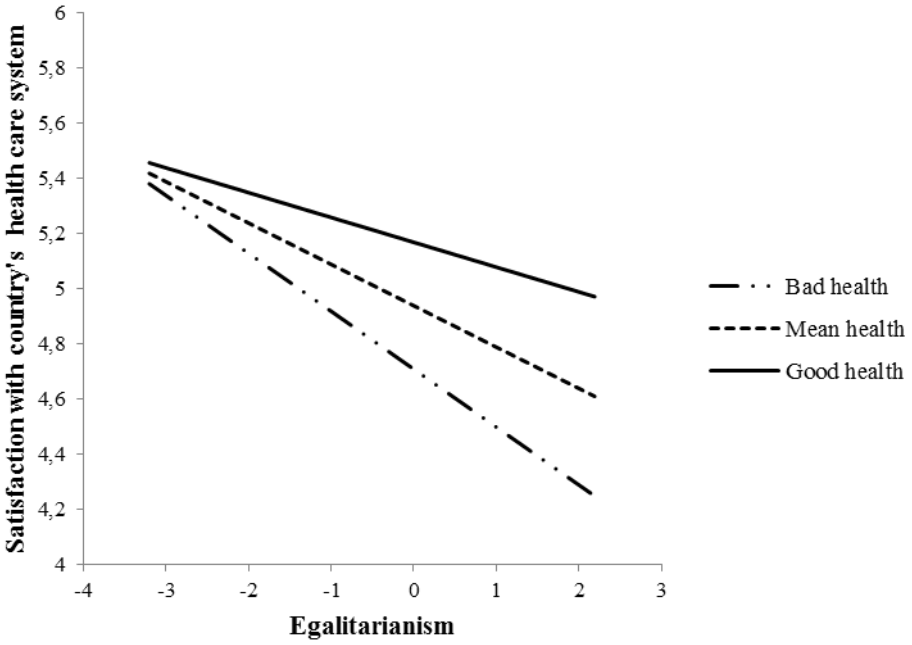

Figure 4: The relationship of egalitarianism and satisfaction with the country's healthcare system in Europe by health status, ESS-4, 2008-2009 (weighted data)

Table 1. Indicators of level of service provision (per 100,000 inhabitants)

	Specialists	General practitioners	Pharmacists	Nurses & midwives	Index level of service provision
Belgium	39.2	113.8	115.3	142.0	144.2
Croatia	41.9	55.0	60.4	55.0	81.3
The Czech Republic	65.0	70.2	56.4	89.0	108.0
Denmark	30.4	67.1	45.4	101.0	85.5
Estonia	46.6	82.2	63.9	70.0	98.9
Finland	30.5	102.1	110.0	89.0	118.6
France	34.4	164.5	116.7	80.0	142.5
Germany	46.8	65.4	60.9	80.0	94.8
Greece	81.8	27.7	88.2	36.0	100.9
Hungary	43.9	35.4	57.2	92.0	84.6
Ireland	22.7	56.7	102.2	195.0	124.2
Latvia	47.8	58.3	59.1	56.0	85.7
The Netherlands	27.9	71.4	21.0	146.0	88.7
Norway	33.0	81.0	76.9	162.0	120.3
Poland	39.5	20.5	63.5	52.0	68.4
Portugal	46.6	199.0	70.2	47.0	135.2
Romania	31.3	83.1	55.4	42.0	79.3
Russian Federation	59.7	27.3	8.1	85.0	70.9
Slovenia	40.2	49.8	52.2	80.0	82.3
Spain	13.6	73.9	80.3	76.0	84.2
Sweden	41.6	62.2	73.2	109.0	103.1
Switzerland	50.0	61.9	56.2	110.0	101.8
Ukraine	57.7	34.5	47.8	85.0	87.0
The United Kingdom	39.4	79.6	64.2	128.0	109.6
Average Europe	**42.1**	**72.6**	**66.9**	**92.0**	**100.0**

Sources: World Health Organization

Notes: The most recent figures are used and date back no earlier than 2006.

The figures for specialists are the average of the four following categories of specialists: general pediatrics; obstetrics and gynecology; medical group of specialties; surgical group of specialties.

In contrast to Wendt and Kohl (2010), the figures for nursing personnel include midwives because of data availability.

Table 2: Fixed effects of self-interest motives ideology, and institutional characteristics regarding support for two aspects of the popular legitimacy of European healthcare systems, ESS-4, 2008-2009 (weighted, standardized coefficients)

	Support for state responsibility				**Satisfaction**			
	Model 1a		Model 2a		Model 1b		Model 2b	
	B	**p**	**B**	**p**	**B**	**p**	**B**	**p**
Intercept	8.65	***	8.64	***	4.95	***	4.94	***
Individual-level characteristics								
Gender (0 = male)	0.07	***	0.07	***	-0.14	***	-0.14	***
Age (0 = 36-49 years)								
15-20 years	-0.20	***	-0.20	***	0.52	***	0.52	***
21-35 years	-0.12	***	-0.12	***	0.09	***	0.09	***
50-64 years	-0.01		-0.01		0.01		0.01	
65 years or more	-0.12	***	-0.12	***	0.31	***	0.31	***
Income (0 = 80-120% median income)								
50 % median income	0.08	**	0.08	**	0.04		0.04	
50-80% median income	0.01		0.01		0.01		0.02	
120% median income	0.00		0.00		0.02		0.02	
Missing income	-0.01		-0.01		-0.04		-0.03	
Educational level (0 = tertiary)								
No or lower education	-0.09	**	-0.09	**	0.31	***	0.32	***
Lower secondary	0.00		0.01		0.10	***	0.10	***
Upper secondary	-0.01		-0.01		-0.03		-0.03	
Post-secondary	0.06		0.06		-0.15	**	-0.15	**
Labour market position (0 = employed)								
Student	0.06		0.06		0.12	**	0.12	**
Unemployed	0.06		0.06		-0.02		-0.02	
Sick/disabled	0.08		0.08		0.15	*	0.16	**
Pension	0.08	**	0.08	**	0.17	***	0.17	***
Other	0.04		0.04		0.19	***	0.19	***
Subjective good health	-0.03	**	-0.03	**	0.23	***	0.23	***
Egalitarianism	0.19	***	0.19	***	-0.07	**	-0.15	***
Country-level characteristics								
Level of service provision	0.11		0.11		0.20		0.20	
Government expenditure	-0.03		-0.03		0.54	*	0.54	*
Private expenditure	0.06		0.06		-0.25		-0.27	
Interactions								
50% median income* egalitarianism	-0.02				-0.14	***		
50-80% median income* egalitarianism	0.02				-0.09	**		
80-120%median income* egalitarianism	-0.01				-0.01			
Missing income* egalitarianism	0.02				-0.11	***		
Subjective good health* egalitarianism			-0.02	*			0.06	***
Variance parameters								
Between countries	0.19	**	0.19	**	0.73	**	0.74	**
Within countries	2.64	**	2.64	***	3.59	***	3.59	***
-2LL	168154.36		168139.98		181901.84		181878.91	

Source: *European Social Survey*, 4th round, own calculations

*p<0.05, **p<0.01, ***p<0.001

ρ null model state responsibility: 6.5%; ρ null model satisfaction: 27.5%