

Live and let...?

Measuring and explaining the strictness of embryo research laws in 21 countries

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Abstract

The regulation of embryo research is a controversial issue. Different countries have come to very different regulatory responses, ranging from very liberal and science-friendly regimes to restrictive regulations. This paper tries to explain this variation. Based on a newly created dataset on the strictness of embryo research regulations in 21 OECD countries over 26 years, several hypotheses are put to a test using cross-section regressions and graphical methods. The hypotheses are divided into two broad theoretical strands: one strand states that embryo research policies are “politics as usual”, determined by partisan politics within institutional constraints. The other strand holds that deep-seated cultural and denominational differences can explain more of the variation. The results confirm theses which hold that religion still plays a major role in politics: Catholic countries indeed have stricter regulations than more secular protestant countries. A partisan hypothesis is only partly supported: As expected, strong Christian democratic parties are associated with strict regulations if the institutional context generates few veto players. However, the reverse does not hold true for leftist parties, whose preferences concerning embryo research seem not to be as clear-cut.

1. Introduction¹

Embryo research and its regulation is a policy field where the fact that politics is a matter of conflicting interests and values becomes most obvious. For the churches and other opponents of embryo research the case is clear-cut. The human embryo is a human being, should enjoy the same protection as any other human being, and embryo research that is not done in the embryo's interest is identical to murder. The proponents of embryo research hold against this that the human embryo cannot be considered a human being, as it is a very early stage of human development, merely a batch of cells. Moreover, this batch of cells may – according to the proponents – be the raw material for many breakthroughs in medical research; breakthroughs that could lead to cures for hitherto incurable diseases. It could even be considered unethical *not* to research the therapeutical potential of embryonic cells, as it would mean withholding potential cure from the sick (cf. Mulkay 1997; Lauritzen 2001).

These clashing interests and values cannot be reconciled easily. There seem to be no possible package deals, no side-payments. The political system has to devise collectively binding decisions about which kinds of research shall be allowed within its jurisdiction and which shall be banned. But what are the determinants of these decisions?

The situation provides an interesting test for classical theories of policymaking. On the one hand, embryo research policies have to be processed by the political system. This leads to the supposition that they are influenced by parties as the main political actors and by institutions that constrain the room for manoeuvre for these actors. On the other hand, the highly ethical nature of the problem may mean that the features of the political system are secondary to more basic cultural and societal forces. This leads to the supposition that parties and institutions do not count anymore when religion comes into play.

This paper tries to establish which of the two views is more appropriate. Do we observe “politics as usual”, the pursuit of partisan politics within institutional constraints – maybe with more ethics-laden rhetoric, but quite along the lines of other policy fields? Or do such political factors fade into the background, and the religious and cultural heritage of a country becomes a more powerful force, overriding partisan politics and institutional arrangements?

The structure of the paper is as follows: Section 2 establishes the main theories to be tested. They are sketched briefly and their implications for the policy field are formulated as hypotheses. These hypotheses are tested using a quantitative framework, so section 3 is concerned with the necessary data and appropriate methods. Section 4 comprises the main

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analysis. Section 5 summarizes the theoretical and methodological conclusions and puts them in a broader context.

2. Politics or society?

The aim of this paper is to apply two major views of policymaking and to assess their explanatory power for the policy field embryo research. Viewed in a macro-perspective, the question is whether existing policies are best explained by the political system and its major actors and structural features or by deep-seated characteristics of society.

2.1 A politics-centred view: Parties and institutions matter

According to the first view, partisan politics is at the heart of government policies. Modern mass democracies are, above all, partisan democracies, with parties occupying a major role in the formulation and implementation of policies (Schmidt 1996: 155). Hence, policies reflect the preferences of the ruling parties. Typically, this theory is applied to sectors in which economic or social conflicts prevail. These sectors are hypothesized to show most clearly the differences between left and right partisan incumbency. Put another way: partisan politics is thought to reflect the economic cleavage between labour and capital.

But partisan preferences may also be conceived in terms of another division. Following a historical-sociological view, parties have emerged in response to societal conflicts at decisive events in history (Lipset/Rokkan 1967). Even before the development of the labour-capital division, the French Revolution provided the critical juncture at which religious parties² organized in defence of Catholic views of order and morality against the emerging secular nation state. Thus, Catholic parties – and their modern descendants, Christian democratic parties – have a distinctly Christian heritage of values and norms, following their origin and history (Hanley 1994). According to this heritage, they should oppose most kinds of embryo research and advocate restrictive regulations for the policy field.

Against this hypothesis, the argument could be made that such historical derivations of partisan preferences should be taken with a pinch of salt, as ideological transformations could have led to an erosion of Christian values within nominally Christian parties, rendering them

² The terms „religious parties“, „Catholic parties“ and „Christian parties“ are used synonymously here. With the exception of Calvinist parties in the Netherlands, all Christian parties have Catholic origins (Kalyvas 1996), and Christian parties encompassing both denominations – like the German CDU – have long been dominated by the Catholic wing (Gallagher/Laver/Mair 1995: 193).

indistinguishable from secular conservatives (cf. Duverger 1966: 412f.; Broughton 1988; Lane/Ersson 1999: 108). However, even the proponents of this thesis concede that this does not hold for issues that are ethically contested, such as abortion, euthanasia and divorce (Thomas 1975; Gallagher/Laver/Mair 1995). Therefore, a strong Christian democracy should be associated with restrictive regulations on embryo research.

In sharp contrast to this, left parties have secular, even anti-clerical, origins (von Beyme 1982). Accordingly, they should be less concerned with the religious feelings of their basis. Furthermore, they have a progressive view of family and society, not viewing the family as the basic building block of society. Therefore they can be expected to draft liberal reproduction policies, e.g. liberal rules for abortion or assisted reproductive technologies (ART), which in turn may lead to liberal policies for embryo research.³ Added to this may be an optimistic belief in the benefits of scientific progress. It is for these reasons that strong left parties should be associated with permissive regulations on embryo research, and, taken together, we should observe that the partisan difference hypothesis holds for embryo research policies.⁴

The current empirical evidence for such a partisan difference hypothesis are mixed. Case studies on embryo research policies and the related policy fields of ART and abortion show no clear picture. Rothmayr et al. (2004) conclude a comparison of ten case studies on ART policies with the result that there is no systematic partisan difference: „...there is no clear pattern across our countries with respect to the left-right dimension. Political parties and interest groups from the left of the political spectrum have advocated both very restrictive policies and intermediate policies. [...] The hypothesis of partisan influence on policy choices [...] turns out to be less useful for the field of ART.“ (Rothmayr et al. 2004: 233) On the one hand, countries like France and Spain seem to confirm the view that socialist governments prefer liberal regulations (Engeli 2004; Dubouchet/Klöti 2004). However, there are counter-examples. In Belgium, the preference of the Christian democrats – which held a majority in government for a long time – was not to regulate strictly, but to keep the topic off the agenda altogether (Schiffino/Varone 2004). In Germany, the social democrats held pro-life views and

³ The policy fields abortion, ART and embryo research are closely interrelated. They share one basic question: what is the moral status accorded to the human life in its early stages of development, and how should it be protected (cf. Lauritzen 2001)? A government pursuing widely differing policies in the three fields – e.g. being lenient on questions of abortion but interdicting embryo research or vice versa would make itself vulnerable to charges of inconsistency and double standards. So, at least a minimum of consistency of partisan preferences in the three fields is to be expected, and accordingly, some empirical evidence cited subsequently will come from abortion or ART policies.

⁴ The theoretical considerations remain confined to the preferences of Christian and left parties. Liberals and green parties can be expected to have distinct preferences, too. However, they may be grouped into the liberal and conservative camp (Nielsen et al. 2002; Rothmayr et al. 2004: 233). To avoid overburdening the analysis, their influence is left unexplored in this paper, but is part of the larger research project.

called for strict regulation, just like – or even exceeding – Christian democrats. This special preference constellation is attributed to the German legacy of eugenic politics during the Third Reich (Gottweis/Prainsack 2002; Rothmayr/Ramjoué 2004). Equally mixed are the evidence at hand for abortion policies. Rucht (1994), O'Connor (1996), Field (1980) and Gindulis (2001) observe partisan influence as hypothesized: left parties tend to liberalize abortion rules, Christian democratic parties try to preserve restrictive rules. However, Minkenberg (2002) finds no systematic association between strength of Christian parties and strictness of abortion rules, and Outshoorn (1996) imposes so many exceptions, contextual factors and idiosyncrasies on partisan influence that it can no longer be considered universal and systematic.

This lack of systematical partisan influence might be due to institutional constraints. A large family of theories which can be broadly termed “institutionalist” emphasises that the margin for partisan politics is determined by the institutional environment within which parties pursue their goals. One of the most popular members of this theory family is Tsebelis' (1995; 2002) veto player theory. This theory states that institutions first and foremost determine the number of actors that have veto power over a policy. The more veto players a political system has, the less distinct partisan preferences can prevail. So, the postulated associations between partisan preferences and the strictness of embryo research laws should be visible in political systems with few veto players but not – or not as clearly – in systems with many veto players. Empirical results are however still equivocal. Timmermans (2004: 169) ascribes the incremental ART policymaking in the Netherlands to the logic of institutional arenas which favour consensus over clear priorities. On the other hand, there are plenty of studies which explicitly state that institutions did not have an impact on morally contested policies. Studlar/Tatalovich (1996) observe a convergence of abortion policies in the USA and Canada despite the different institutional configurations. Similar results are presented by Minkenberg (2002: 229) who compares the abortion policies of western industrialised nations and claims that institutional factors cannot explain the empirical variety. This result is confirmed in a quantitative study by Gindulis (2001). In a similar vein, a case study by Montpetit (2004) on ART policies in Canada shows how blockades and pressures towards consensual solutions may arise even in majoritarian democracies. Rothmayr et al. are equally cautious about ascribing systematic influence to institutional factors (Rothmayr et al. 2004: 238).

So, while it is plausible that embryo research policymaking follows the same logic as policymaking in other fields – partisan actors trying to pursue their preferences given

institutional constraints – it remains to be tested whether this withstands systematic cross-national comparison. The hypotheses can be stated as thus:

Hypothesis 1: The strength of Christian democratic parties is positively associated with the strictness of embryo research laws. The strength of this relationship is dependent on the number of veto players, with more veto players meaning a weaker relationship.

Hypothesis 2: The strength of left parties is negatively associated with the strictness of embryo research laws. The strength of this relationship is dependent on the number of veto players, with more veto players meaning a weaker relationship.

2.2 A society-centred view: Culture and religion

A second view holds that the “politics as usual” view has to be replaced or complemented by cultural influence factors. Theories that see cultural and religious factors as important in shaping public policies have long been neglected in political science. This is due to the enduring dominance of the secularisation thesis, which holds that religion has lost its influence on politics and society in the course of modernization and societal differentiation (Weber 1920; Luckmann 1967). Yet, the universal version of the secularisation thesis has come under severe criticism (Stark 1999), and even its former proponents have revised their view (compare Berger 1969 with Berger 1996). The most elaborate criticism comes from Casanova (1994) who differentiates secularisation into three processes. According to him, an institutional differentiation of state and church can be observed, as well as an erosion of individual religious ties. But this does not mean that religion has lost its influence on the public sphere (the third process) and has become a phenomenon of the private sphere. On the contrary, according to Casanova (1994), we witness a “deprivatization“ of religion and a Renaissance of religious arguments in public discourse. This view can be supplemented by a temporal differentiation. Secularisation has been a major social process during the industrialization, and it has eroded pre-modern religious ties. However, this process has slowed down or stopped without reaching its logical endpoint, the complete insignificance of religion (Inglehart 1997; Minkenberg 2002: 255). A historical macro perspective also leads to the conjecture that religion is still an important factor: the Catholic church is a social institution that is older than the modern nation state and influences the worldviews and loyalties of millions of adherents.

So, there are good theoretical reasons to believe that religion acts as a cultural heritage and still shapes public policies. The contemporary values and norms of societies reflect the religious legacies of the past, transmitted through socialization in family and community (Castles/Flood 1993: 295): „...the fact that a society was historically shaped by Protestantism or Confucianism or Islam leaves a cultural heritage with enduring effects that influence subsequent development. Even though few people attend church in Protestant Europe today, historically Protestant societies remain distinctive across a wide range of values and attitudes. The same is true for historically Roman Catholic societies, for historically Islamic or Orthodox societies, and for historically Confucian societies.“ (Inglehart/Baker 2000: 49) In comparative political science, this idea is most clearly reflected in Castles' (1993, 1998) concept of “families of nations” that groups nations according to shared cultural and historical characteristics. Prominent amongst these characteristics is the question which denomination is dominant in a society.

Applying these ideas to the policy field at hand, the hypothesis is that the larger the proportion of Catholics in a society is, the more restrictive embryo research policies will be. This assumption can be justified in general terms by referring to the strong role of absolute moral values in the Catholic Church, the conservative stance towards family and reproduction and the stronger fixation to these religious doctrines (Martin 1978: 120; Castles 1998: 53). It can also be justified by looking at the official statements of the Catholic church, which leave no room for interpretation: „The living human embryo is – from the moment of the union of the gametes – a human subject with a well defined identity, which from that point begins its own coordinated, continuous and gradual development, such that at no later stage can it be considered as a simple mass of cells. From this it follows that as a human individual it has the right to its own life; and therefore every intervention which is not in favour of the embryo is an act which violates that right.“ (Pontifical Academy for Life 2000)

Empirical evidence in related policy fields is relatively clear-cut. A Catholic cultural impact can be observed in abortion policies (Githens 1996; Gindulis 2001; Minkenberg 2002) and divorce rules (Minkenberg 2003), with Catholic societies consistently exhibiting strict rules that are shaped according to absolute moral values.⁵ However, Ramjoué and Klöti (2004) state that the lack of restrictive legislation on ART in Italy is paradoxically due to the strong role of the Church in Italy. Their argument is that the Church is afraid that any law the political system can produce will not be strict enough to meet its doctrines, so it rather blocks comprehensive legislation altogether (Ramjoué/Klöti 2004: 54).

⁵ cf. Castles 1998: 302 for an overview of policy fields in which a Catholic cultural impact is visible.

It remains to be tested whether this result can be found in other countries or whether it reflects Italian idiosyncrasies. Besides this, testing whether there is a systematic influence of Catholicism towards stricter embryo research laws does not only mean trying to explain differences in policies. It is also a crucial test for the secularisation hypothesis. If it turns out that Catholic societies do indeed exhibit stricter embryo research laws, all is well for opponents of the secularisation thesis, and a policy field has been identified that contradicts a universal secularisation thesis. If, on the other hand, there is no distinct Catholic cultural impact in a policy field that is conspicuously at odds with Catholic moral values and – according to its official statements – very important for the Catholic Church, the secularisation thesis receives strong support. The hypothesis can be stated as thus:

*Hypothesis 3: The proportion of Catholics in a society is positively associated with the strictness of embryo research laws.*⁶

3. Data and method

In order to assess which of the sketched theories of policymaking is best suited to explain national differences in embryo research policies, three basic components are needed: an operationalisation of the concept of interest, operationalisations for the supposed influence factors, and an adequate methodology for judging whether there are any meaningful associations between the two sets of variables. As has been seen in the discussion of empirical evidence, much of the existing literature tackles the issue using case studies and small n comparisons.⁷ This paper takes a different approach and tries to quantify the strictness of embryo research laws, thereby opening the policy field to quantitative analysis. As new grounds are entered with this attempt, this section will comprise a relatively large part of the paper.

3.1 How to measure the strictness of laws – the dependent variable

A central problem political scientists are faced with when trying to find the determinants of the strictness of laws is to find adequate measures for this concept. This paper proposes a

⁶ At this point it should be clear that the distinction made at the outset – politics versus society – is of course a simplification. One mechanism for the transmission of Catholic power and preferences into policies is the election considerations of the parties. However, it seems legitimate to ask whether partisan politics or religious beliefs are more salient in influencing embryo research policies.

⁷ With the exception of Gindulis' (2001) quantitative study of the determinants of abortion policies.

measure based on the various techniques of embryo research that may or may not be allowed. Nine basic techniques have been identified. Data for 21 OECD countries and 26 years⁸ have been gathered, indicating whether these basic techniques are allowed (coded 0) or forbidden (coded 1). In some cases, qualifications are added, these cases were coded 0.5. The techniques and their coding can be gathered from table 1; they range from therapeutical applications of embryo research to much-contested applications in stem cell research, where human embryos are used as raw material. Added up, these binary variables constitute the Embryo Research Index (ERINDEX).

Variable	Description of Procedure	Coding
THR	Therapeutic research: non-harming research, „intended to be in the interests of the embryo, which is going to be transferred in a woman's womb.“ (Gratton 2002: 3)	0 (allowed) / 1 (forbidden)
TSS	Therapeutic sex selection: the selection of the child's sex after genetic testing in order to avoid hereditary diseases that are bound to Y-chromosomes.	0/1
GLTH	Germ line therapy: the manipulation of the human germ line in order to change genetically determined characteristics in the earliest stages of human development.	0/1
NTHR	Non-therapeutic research: „research that is not done for the direct benefit of the individual embryo and is likely to harm it and lead to its destruction.“ (Gratton 2002: 3)	0/1
NTHRAGE	The age or stage of development until which non-therapeutic research may be done. ⁹	0 (no time limit) 0.5 (up to 14 days after fertilisation) 1 (forbidden in principle)
EPRES	Embryo production for research purposes: the production of embryos solely for the purpose of research.	0/1
ESCR	Embryonic stem cell research: research on human embryonic stem cells (which must necessarily have been created using human embryos).	0 (use and production of stem cells allowed) 0.5 (use of imported stem cell lines allowed, but no production) 1 (completely forbidden)
THERCLON	Therapeutic cloning: cloning human embryos via somatic cell nuclear transfer (SCNT) in order to obtain research embryos.	0/1
REPCLON	Reproductive Cloning: cloning human embryos via SCNT in order to obtain a human child (the „Dolly the sheep“ procedure)	0/1
ERINDEX	Sum of the aforementioned variables.	0 to 9

Table 1: Composition of Embryo Research Index

⁸ Ranging from 1978, the birth of the first test-tube baby, and hence the onset of the policy-problem, to 2003.

⁹ The 14-day-limit is due to biological considerations. 14 days after the fertilisation the embryo establishes itself in the uterus. Up to this point, it can still be stopped by contraceptives. The 14-day-limit is ethically highly contested, however, it is often used.

Main source for the data is the survey on the legal situation in the EU countries done by Gratton (2002) for the European Group on Ethics and new Technologies and the survey of the Council of Europe (1998). These data have been cross-checked and complemented using www.bionetonline.org, legal studies (Eser et al. 1990; Koch 2001), case studies (Bleiklie et al. 2004) and e-mail correspondence with the relevant ethics councils and ministries.¹⁰

A further layer of complexity that has to be dealt with is that different countries have chosen different policy instruments to regulate embryo research. Most of the observed countries have passed a law, however they may also have a constitutional provision (Ireland), a ministerial decree or regulation (Italy and Greece) or be members of an international treaty (Portugal). The variable ERINDEX ignores these differences. It only accounts for *whether* the aforementioned techniques are allowed or forbidden, but not for *how* it is done.¹¹

One last qualification has to be added: what about observations where no regulation is in place? In other words: what is the legal situation *before* an embryo research law is passed? Does this mean that everything is allowed and the embryo research index should be coded 0? I have decided to compare only the strictness of actually existing regulations. A theoretical reason for this decision is that it is difficult to speculate about the situation in lawless spaces. The assumption that everything was allowed when there was no law in place is dubious, leads to extensive counterfactual legal speculations and is futile for the research problem at hand. Besides this, dire methodological problems arise if missing laws are coded as the most liberal form of embryo research regulations. This approach would make it impossible to distinguish the factors influencing the *speed* of lawmaking from the factors influencing the *content* of the laws.¹²

Taken together, the embryo research index allows an intersubjective and reproducible way of judging the strictness of embryo research regulations, as well as the tracing of changes in the legal situation. In 2003, the situation in the 21 countries under study is as follows:

¹⁰ A large proportion of clear yes/no and allowed/forbidden answers in the e-mails shows that it is possible to cast the measurement problem in binary items.

¹¹ However, to probe the robustness of the results, the results using this full data set were compared with the results using only the strictness of actual *laws*.

¹² Consider an example: Country A has a very strong social democracy throughout the whole observation period, as well as a liberal embryo research law, say, with ERINDEX = 2. This country appears as evidence that social democrats pass liberal laws. Country B has an equally strong social democracy, however, for a long time it has no law. At the end of the observation period, it passes a very strict law. When the no-law-situation is coded 0, this country also appears to lend support for the social democracy – liberal law thesis (as it consists of many observations that confirm this); however, the real conclusion for country B should be: Social democratic countries legislate *late*, but *strict*.

Country	THR	TSS	GLTH	NTHR			THER		REP	ERINDEX	
				NTHR	AGE	EPRES	ESCR	CLON	CLON		
BEL		0	0	0	0	0.5	0	0	1	0	1.5
ITA		0	0	0	0	0	0	0	1	1	2
GBR		0	0	1	0	0.5	0	0	1	0	2.5
AUS		0	0	0	0	0	1	0	1	1	3
NZL		0	1	1	0	0	0	0	1	0	3
DEN		0	0	0	0	0.5	1	0	1	1	3.5
FIN		0	0	0	0	0.5	1	0	1	1	3.5
GRC		0	0	0	0	0.5	1	0	1	1	3.5
NEL		0	0	1	0	0.5	0	0	1	1	3.5
SPA		0	0	1	0	0.5	1	0	1	1	4.5
SWE		0	0	1	0	0.5	1	0	1	1	4.5
POR		0	0	0	1	1	1	0.5	1	1	5.5
FRA		0	0	1	1	1	1	0.5	1	1	6.5
AUT		0	1	1	1	1	1	0.5	1	1	7.5
GER		0	1	1	1	1	1	0.5	1	1	7.5
NOR		1	0	1	1	1	1	1	1	1	8
IRE		1	1	1	1	1	1	1	1	1	9
SUI		1	1	1	1	1	1	1	1	1	9

Table 2: Strictness of Embryo Research Policies 2003. Canada, USA and Luxembourg missing due to lack of regulation in 2003.

As can be seen from table 2, there is considerable variation in the strictness of embryo research laws in cross-national comparison (between). However, as can be concluded from table 3, there is only little variation over time (within). This means that once embryo research laws were in place, they were only seldom and incrementally modified.¹³

Variable		Mean	Std. Dev.	Min	Max	Observations
ERINDEX	overall	5.42	2.52	1	9	N = 223
	between		2.31	1.5	9	n = 19
	within		.90	3.10	10.09	T-bar = 11.73

Table 3: Descriptive statistics for ERINDEX

3.2 How to measure religiosity et al. – the independent variables

Three main concepts have been outlined in the theory section. These main concepts must now be translated into observable entities.

¹³ This is an interesting fact in itself, but has also methodological consequences.

For the strength of Christian democratic and left parties, data on cabinet seats for these two party families are used. The data are available from the dataset by Armingeon/Beyeler/Menegale (2002).¹⁴

As has been discussed, the main feature of veto player theory is to translate institutional features of a political system into information about the number of actors with veto powers. Basically, these are the members of the governing coalitions (Tsebelis 2002: 79). So, veto players will be operationalised using the number of parties in the governing coalition. Source for the data is McDonald/Mendes 2002. This indicator may appear minimalistic, however, it can be shown that it is a valid indicator for the construct “dispersion of power”, and that it performs as well as more elaborate indicators (cf. Roller 2003: 26).¹⁵

As a central theoretical argument of this paper is that partisan preferences and institutional context interact, interaction terms are generated. The argument is not new in political science, however, interactions are seldom modelled explicitly. Therefore, a little digression on the topic is warranted. In a simple regression model, the coefficient for variable X indicates the slope of the regression line. This slope is constant, independent of the values other variables take on. However, if an interaction term $X \times Z$ is introduced to the model, the effect of X is no longer considered constant, but dependent on the values of Z (Aiken/West 1991: 10). For the research question at hand, we expect a negative coefficient for the interaction terms partisan strength \times number of veto players, because the larger the number of veto players is, the smaller the impact of partisan strength should be.

For two reasons, it is helpful to centre the independent variables before generating interaction terms. The first reason is an interpretation issue: If an interaction between X and Z is part of an estimation, the coefficient for X states the effect size of X , when Z equals 0. This is dubious when the value 0 for Z is meaningless or impossible – no country has 0 veto players. When the variables are centred, however, the value 0 is the mean of Z , therefore, the coefficient for X states the effect of X when Z has a mean value, which is a convenient interpretation (Aiken/West 1991: 38). The second reason is rather technical: centring the variables avoids multicollinearity, which would otherwise plague the model if interaction terms are added (Jaccard et al. 1990: 30).

¹⁴ Data for the years 2001 to 2003 were added according to the criteria set out by Armingeon/Beyeler/Menegale (2003) using the European Journal of Political Science Political Data Yearbooks.

¹⁵ The original dataset by Tsebelis (1995; 2002) calculates the number of veto players using more sophisticated methods (e.g. taking into account the composition of the second chamber). Unfortunately, this dataset has many missing data after 1995. However, the correlation between the number of governing parties and Tsebelis' original variable is 0.93, so it can be considered a good proxy.

Religiosity of a society will be operationalised using the proportion of Catholics in a country. Source for the data is the CIA world fact book. The proportion of Catholics is considered to be time-invariant, with the exception of Germany, where the large shift due to reunification is accounted for.¹⁶

	Strength Christian democrats	Strength left parties	Veto players	Christian democrats × veto players	Left parties × veto players	Proportion Catholics
Strength Christian democrats	1.00					
Strength left parties	-0.22	1.00				
Veto players	0.33	-0.00	1.00			
Christian democrats × veto players	0.22	-0.01	0.09	1.00		
Left parties × veto players	-0.03	-0.48	0.12	-0.16	1.00	
Proportion Catholics	0.24	-0.11	0.16	0.21	0.15	1.00

Table 4: Intercorrelation matrix for independent variables

The intercorrelation matrix of the independent variables used (Table 4) shows no major problems a priori. Especially the relatively modest correlation between Christian democratic strength and the proportion of Catholics is reassuring, as it shows that a Catholic population and a strong Christian democracy in government do not go hand in hand.

3.3 The pitfalls of pooling – why cross-section regressions are used

With these translations of theoretical concepts into observable entities, the research question can now be tackled with quantitative methods. As data are available for a set of units (countries) over several time periods (years), the dataset has the structure of a time-series cross-section (TSCS) dataset (Hicks 1994). However, pooled regression models will not be used for the analysis. This is due to theoretical as well as empirical considerations. First, the theoretical debate on the merits and pitfalls of pooled analysis is by no means concluded (cf. Plümpner/Manow/Troeger 2003; Beck/Katz 2004; Wilson/Butler 2004 for the state of the debate). The pitfalls are many, and a model specification that is not appropriate to the data structure can do more harm than good. This leads to the second consideration. As can be

¹⁶ For Greece, the proportion of Catholics is coded as a missing value, as there is considerable debate whether the Greek-orthodox faith is more like Catholicism, more like Protestantism or a denomination sui generis, cf. Castles 1998:55; Madeley 2003: 40; Mavrogordatos 2003: 127. In this way, Greece will be excluded from analyses using this variable. However, subsequent tests reveal that the results are robust against different operationalisations of Greek orthodoxy.

gathered from Table 3, most of the variation in embryo research policies lies in the between-dimension: there is five times as much variation between the countries as there is within the countries over time. This calls into question most of the ambitions of TSCS analysis. A pooled model applied to these data will be plagued by autocorrelation, that is, successive observations on the dependent variable are not independent from each other (Beck 2001: 275). Put another way: the number of observations would be artificially inflated without yielding meaningful additional information. If most of the information lies in the cross-sections anyway, it seems sensible to use simple cross-section regressions which avoid the perils of TSCS models. As this method only allows conclusions on the differences between countries, the analysis will be augmented by a closer look at some instances of revisions of established embryo research regulations.

An eye has to be kept on the problem of the (relatively) small n . The number of independent variables is kept small, and additional control variables like GDP are not added, in order to not put too much strain on the small dataset.¹⁷ This is also the reason that the test of a partisan thesis is confined to two major party families. While it might be interesting to probe into the influence of liberal and green parties, the inclusion of their strength in the models as independent variables aggravates multicollinearity and overburdens the data. Another imperative of the small n is the use of outlier analysis to check whether the found relationships are robust patterns across the whole dataset.

¹⁷ As 21 Western, industrialized (and Christian) OECD countries have been chosen, we can assume a roughly similar level of economic and technological development. In this way, the absence of control variables like GDP can be justified. On the downside, this selection precludes generalizations beyond this set of nations.

4. Analysis

According to the methodological considerations, the analysis will start with a comparison of different cross-section regression models. In these models, the mean strictness of embryo research regulations is the regressed on the mean of the supposed independent variables for the whole period 1978-2003.¹⁸

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Strength Christian democrats	0.01 (0.04)		0.03 (0.04)	-0.00 (0.04)	0.00 (0.05)	0.03 (0.04)	0.03 (0.05)
Strength left parties	-0.06 (0.06)	-0.02 (0.07)		0.01 (0.05)	-0.02 (0.08)	0.02 (0.04)	-0.03 (0.07)
Veto players	-0.05 (0.54)	-0.43 (0.55)	-0.41 (0.52)		-0.43 (0.67)	-0.39 (0.54)	-0.32 (0.65)
Christian democrats × veto players	-0.09** (0.03)		-0.07** (0.03)			-0.07* (0.03)	-0.05 (0.03)
Left parties × veto players	-0.10 (0.06)	-0.03 (0.06)			-0.03 (0.07)		-0.01 (0.06)
Proportion Catholics	0.06** (0.02)	0.03 (0.02)	0.04** (0.02)	0.02 (0.02)	0.03 (0.02)	0.04* (0.02)	
Constant	5.71*** (0.65)	4.90*** (0.71)	5.78*** (0.67)	4.87*** (0.67)	4.90*** (0.75)	5.74*** (0.70)	5.49*** (0.79)
Observations	17	17	17	17	17	17	18
R-squared	0.55	0.17	0.40	0.11	0.17	0.41	0.19

Table 5: Regression of the means

With the help of the models in table 5, first substantial conclusions arise. Concerning Christian democratic influence, we can tentatively conclude that it is present. However, it is strongly constrained by the institutional context. This can be seen in the coefficients for Christian democratic strength and the corresponding interaction terms. The former are only slightly positive. However, this has to be linked to the negative coefficients of the interaction terms. They indicate that Christian democratic strength indeed has an influence on strictness of embryo research laws, albeit heavily mediated by the number of veto players.¹⁹

¹⁸ The strictness of regulations in 2003 could have been used instead of the mean as a dependent variable, the main conclusions do not change.

¹⁹ The importance of this combination of influence factors can be seen in model (2): with the omission of Christian democratic strength and the interaction term, the overall model fit drops considerably.

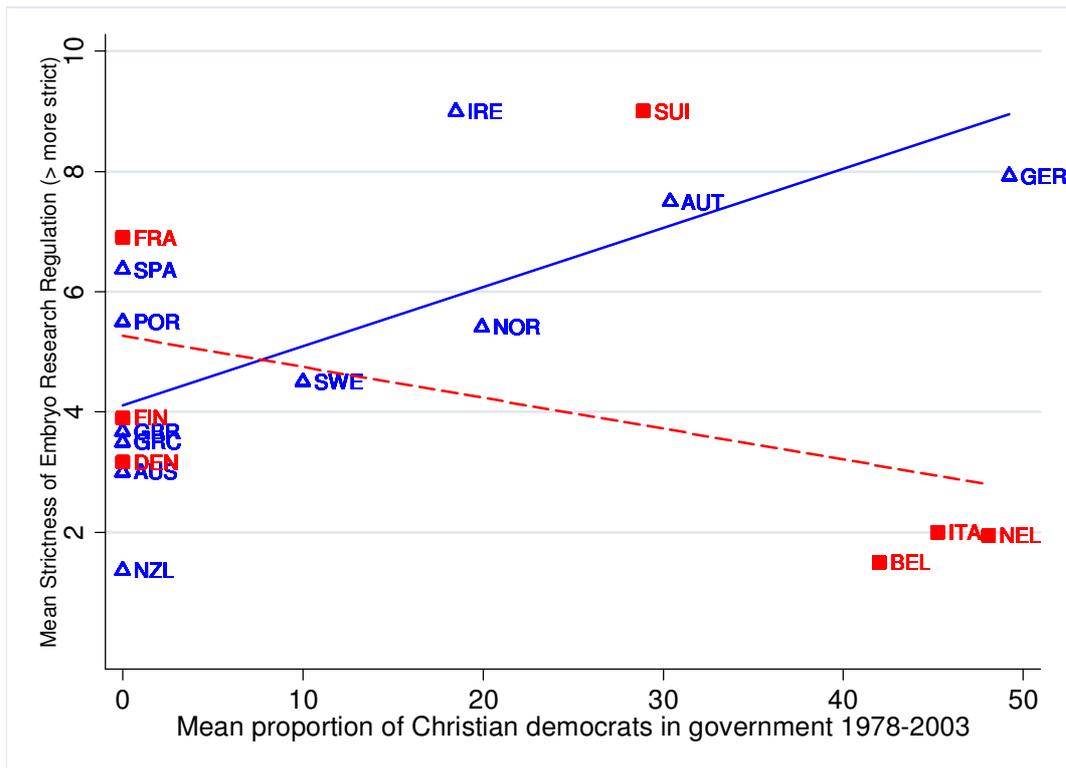


Figure 1: Relationship between mean strictness of embryo research regulations and mean strength of Christian democrats; separated for countries with few veto players (triangles, solid line) and many veto players (squares, dashed line)

This is most clearly visible in a graph separately plotting the relationship between strength of Christian democracy and strictness of embryo research laws for the countries with less than average veto players and more than average veto players (Figure 1). The group with less than average veto players (triangles, solid line) exhibits the hypothesized relationship: the greater the strength of Christian democracy, the more restrictive the embryo research laws. The group with more than average veto players (squares, dashed line) does not exhibit this pattern. On the contrary, the cluster of countries in the bottom right is composed of countries that have drafted rather liberal rules despite their structurally strong Christian democracy.

The only marked exception to this rule is Switzerland. Switzerland is the only country with strong Christian democrats and many veto players that has managed to draft a restrictive regulation on embryo research.²⁰ An explanation for this special role might lie in the fact that Switzerland has very strong elements of direct democracy (Neidhart 1970; Wagschal 1997; Gerber/Hug 2001). According to observers of Swiss biomedical policy, direct democracy was

²⁰ The special role of Switzerland can also be seen in the fact that the model fit for nearly all of the specifications gets significantly better when Switzerland is left out of the analysis (results of the Jackknife analysis not reported here for reasons of brevity). Another exception to this rule is Italy, see below

a useful means for advocates of strict regulation to promote their views in the agenda setting phase as well as in legislation (Rothmayr/Serdült 2004), a result that is complemented by the fact that the strict Swiss abortion policies can also be attributed to direct democracy (Gindulis 2001). Another explanation completely in line with veto player logic is that Swiss political parties were – according to the relevant case study – not divided on the issue of biomedical policy: „a majority of the political parties were promoting rather restrictive policies on the grounds of various beliefs, bridging the left-right divide and allowing for a broad coalition of right- and left-wing forces for restrictive policies in parliament.“ (Rothmayr/Serdült 2004: 191) This constellation of preferences means that the sheer number of veto players becomes irrelevant, as their ideological distance shrinks and some veto players are absorbed (Tsebelis 2002). Recent events serve to reinforce this conclusion for the Swiss case: the new *Stammzellengesetz* is a slight liberalization of the old rules.²¹ It was formulated in relative consensus between the large parties (Hirter/Linder 2004: 21) and under the threat of a referendum. Proponents of the slight liberalization finally were victorious in the referendum and could defend it against demands for stricter rules. However, the shadow of the referendum has presumably influenced the policy, and a marked liberalization that would have put Switzerland on the level of Finland or the United Kingdom would assumedly have been defeated (NZZ 2004a; NZZ 2004b). The theoretical lesson of the Swiss case can be put bluntly: the sheer counting of veto players is not helpful for Switzerland, the exact preference constellation and the instrument of direct democracy are more important.

The Netherlands can serve as an example for the veto player thesis: the Bill Containing Rules relating to the Use of Gametes and Embryos (Embryos Act) is relatively liberal and was passed by a three-party coalition of Christian democrats and liberals. According to observers, it reflects the need to find a consensus within the governing coalition as well as within society (Derckx/Hondius 2002: 404). It thus completely meets the theoretical expectations that Christian democrats cannot achieve their goals if institutional conditions create many veto players, or, more precisely, veto players whose preferences do not correspond.

These findings on Christian democratic influence are obviously at odds with the thesis that Christian democrats are Christian by label only (Broughton 1988). However, the findings also suggest that such a conclusion can easily emerge when looking at the policy effects of strong Christian democracy without taking into account institutional obstacles.

A note of caution is in order: as should already be clear from the methods section, the aforementioned conclusions only pertain to the cross-sectional dimension, that is, the

²¹ 6.5 on the embryo research index, which puts Switzerland roughly in the same league as Spain and France in the 1990s.

comparison between countries. That strong Christian democrats under conditions of few veto players are associated with strict embryo research laws in cross-country comparison does not necessarily mean that *within* a country, once Christian democrats gain power, they tighten the grip on embryo research and pass stricter laws. The only instance for this is the Italian Assisted Medical Procreation Law. In 2001, a conservative coalition comprising Christian democrats took over government in Italy, managed to pass a very strict law on assisted reproduction and embryo research in 2004, and won a referendum that challenged this law (Lorenzi 2005). On the one hand, this supports the suppositions about Christian democratic preferences. On the other hand, like the Swiss case, it shows the problems of measuring veto players by counting government parties. When government parties agree on an issue, their sheer number becomes irrelevant. Polarization and veto logic may have hindered comprehensive legislation on embryo research and assisted reproductive technologies in Italy for a long time (Ramjoué/Klöti 2004), but as soon as a government coalition agreed on the issue and was strongly supported by the Catholic Church, a law could be passed.

To get more solid evidence for the thesis that partisan preferences constrained by veto players determine policies in the field of biomedicine, it would be desirable for the results to be symmetrical. That is, the results for Christian democracy should be mirrored in the results for leftist parties. However, the results are far from convincing. The models show no influence of leftist government participation, the interaction term between leftist strength and number of veto players is insignificant, too. Graphical evidence is also inconclusive (Figure 2). It is true that the expected pattern emerges: In countries with only few veto players (triangles, solid line), the alleged relationship between strong left parties and liberal embryo research rules holds. In countries with many veto players (squares, dashed line), it does not hold. Still, there is much unexplained variation left in the data, the regression lines do not describe the pattern very well. Besides this, figure 2 shows a major problem of interaction analysis: the number of cases in each of the two groups gets rather small, and what is worse: the variation on the independent variable in the „squares group“ with many veto players is not very large. In other words: the countries in the group with above-than-average veto players all have medium-strength left parties. A valid conclusion about the effects of strong or weak left parties is not possible for this group, as there are no cases with really strong or really weak left parties that could provide strong evidence for or against the theory.

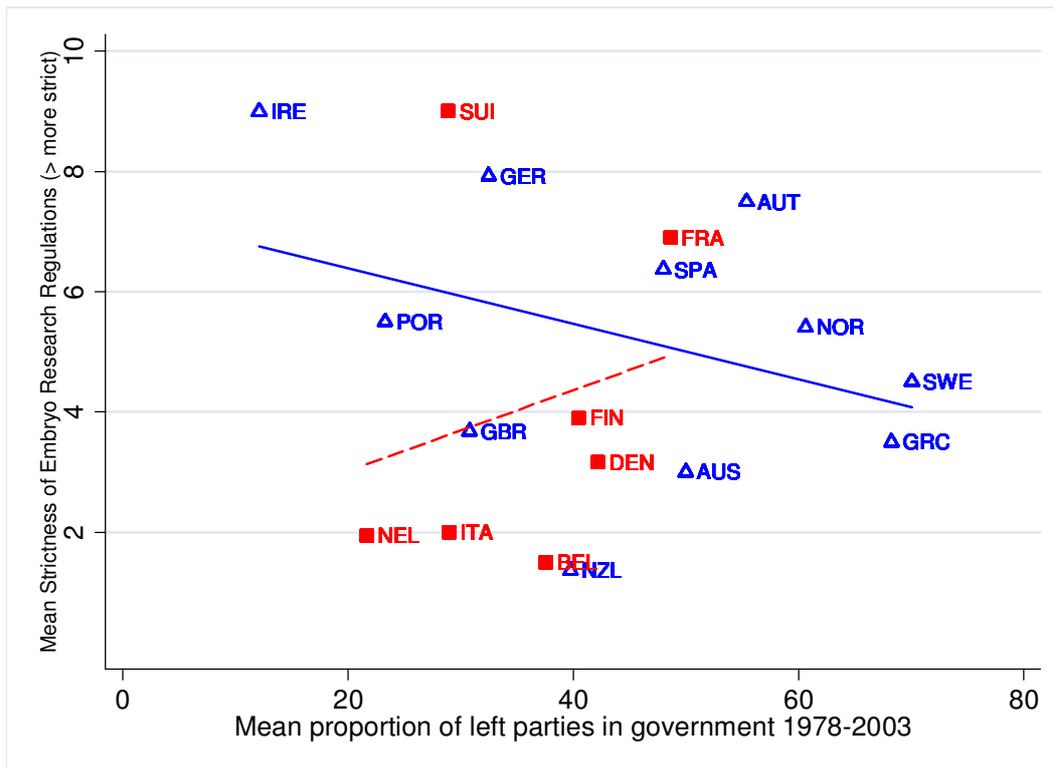


Figure 2: Relationship between mean strictness of embryo research regulations and mean strength of left parties; separated for countries with few veto players (triangles, solid line) and many veto players (squares, dashed line)

So, the evidence for left parties' preferences for liberal regulation, constrained by veto players, is not as good as the evidence for the complementary thesis about Christian democrats. There might be a similar pattern that left parties indeed have preferences for more liberal regulation and can only prevail when only few veto players are present. However, this influence is not very systematic.

How can this lack of symmetry in the results be explained? If Christian democrats fulfil their preferences for strict regulation in contexts with few veto players, why should the opposite not hold true for left parties? The results hint at a problem with the assumptions about left parties' preferences on biomedical issues. On the one hand, there are countries like the United Kingdom and New Zealand. On a closer look, they confirm the thesis that left parties prefer liberal embryo research regulations. Both countries have regulations that are amongst the most liberal in the Western world²² and were passed by strong labour governments. On the other hand, the German social democracy was a supporter of the very restrictive *Embryonenschutzgesetz* in 1990 (Rothmayr/Ramjoué 2004), and a government coalition led by the social democrats advocated only slight liberalizations to this law in 2002 (Gottweis

²² The Human Fertilisation and Embryology Regulations 2001 and the Human Reproductive Cloning Act 2001 in the United Kingdom, the Human Assisted Reproductive Technology (HART) Act 2004 in New Zealand.

2002). The most salient manifestation of this preference has been a speech of social democratic president Johannes Rau, in which he openly criticized the attempts to liberalize the German embryo protection law.

All the evidence put together suggest that a partisan-and-veto-player hypothesis draws a very rough sketch of the policy field. Not more, not less. It explains parts of the picture, but upon a closer look, problems with some of the cases emerge, that suggest a closer inspection of the actor constellation in the respective countries. First, there are conditions under which even many veto players do not hinder the realization of extreme preferences.²³ Secondly, the assumption that left parties universally prefer more liberal embryo research regulations may be too crude.

The evidence for the cultural hypothesis are clearer. The coefficients for the cultural variable are significantly positive in the “good” models that take into account all relevant factors, and the model fit drops considerably when the proportion of Catholics is omitted. The relationship is clearly in line with the hypotheses: Catholic societies exhibit stricter embryo research regulations than Protestant societies.

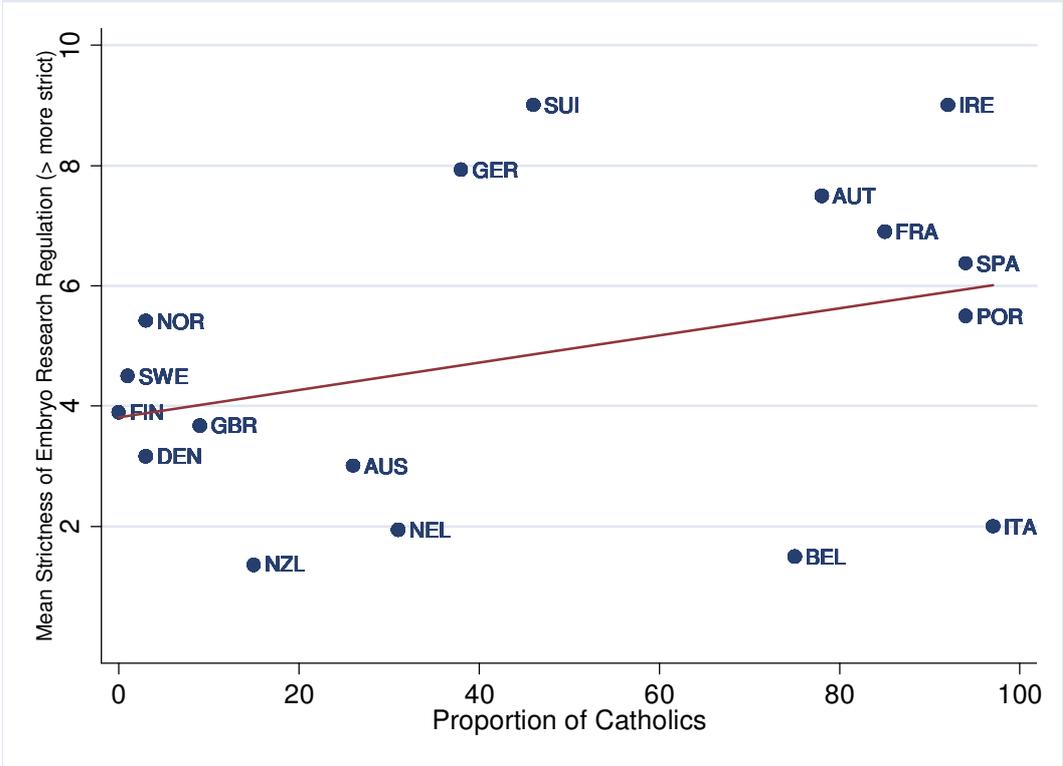


Figure 3: Relationship between mean strictness of embryo research regulations and proportion of Catholics

²³ This is of course not new and veto player theory acknowledges this fact. However, it is a reminder that veto player concepts are to be used with caution in quantitative contexts.

Figure 3 depicts this relationship. The countries can be easily grouped into two distinct clusters. First, the protestant-liberal cluster in the bottom left, which confirms expectations: all of the predominantly protestant countries have embryo research regulations that are liberal or of intermediate strictness. Secondly, the Catholic-restrictive cluster at the top right, which also confirms expectations. Predominantly Catholic countries like Ireland, Austria, Portugal, Spain and France have comparatively restrictive regulations. Viewed through another lens, the pattern corresponds in large parts to Castles' (1993; 1998) culturally-defined "families of nations": a protestant-Scandinavian cluster with liberal-to-moderate regulations, an Anglophone cluster with liberal regulations²⁴, a Romanic cluster with strict regulations, and a cluster with German-speaking nations and strict regulations. The only cases that defy a clear-cut assignment are Belgium and the Netherlands.

Several countries stand out in this figure: Switzerland and Germany have laws that are unusually strict, seen in the light of their medium proportion of Catholics. The Swiss case has already been discussed: the new *Stammzellengesetz* liberalizes the old rules and pulls Switzerland closer to the regression line. Besides this, the direct democracy has worked in favour of strict rules. The German case is perfectly explicable when considering the disproportionately (when compared to its Catholic population) strong Christian democracy. This leaves us with two odd cases in the bottom right corner: Italy has meanwhile tightened its grip on embryo research and joined its Catholic "family members". Belgium, however, remains a mystery. If there is one prediction to be made from this analysis, it is that Belgium will follow the lead of Italy and draft strict embryo research regulations as soon as a coherent Christian-democratic led government takes office.

The observed relationship between Catholicism and strict regulations on a macro-level can also be confirmed by a closer look at the influence of the Catholic church on policymaking in the field. The most recent case is Italy, where the Catholic Church has strongly urged its adherents not to participate in a referendum challenging the restrictive embryo research law. The Vatican's voice did not remain unheard and the referendum failed due to the low turnout (Arie 2005). However, in this case, the Catholic Church acted in accordance with the government's preferences. When it has to oppose left governments trying to liberalize embryo research regulations – as was the case in Spain 2003 – it can also lose (Bosch 2004). But when we abandon the view on single battles and turn to the large picture of the Catholic "culture war" against embryo research again, the role of the Catholic church is evident: in some countries it may be more powerful and successful than in others, but nevertheless it

²⁴ The exception is Ireland, the only predominantly Catholic Anglophone country.

consistently puts up fierce opposition against embryo research. Compared to this, the different varieties of protestant Churches do not speak with one voice. To give just a glimpse of the variety: the protestant Church of Austria comes to the conclusion that research on spare embryos may be carried out for outstanding research purposes (Körtner/Bünker 2001), the German protestant Church is strongly opposed (Pötter 2001), and the Anglican Church is internally divided (Mulkey 1997: 109).

So, all the evidence considered, the data lend strong support to theories that attribute a strong role to religion in embryo research policies. This is observable in the Catholic Church's role in individual country cases, as well as in the macro comparison between countries.

5. Conclusion

Several conclusions emerge from this analysis. Substantively, the denominational structure has been identified as the best predictor for explaining variation in the strictness of embryo research laws. This lends support to opponents of a secularisation thesis and shows that religion and denomination still matter, in line with Castles' (1993, 1998) argument about families of nations.

However, this analysis has to be seen in the light of the selection of countries: all countries under study were western, Christian nations. This leads to the question of how far the results can be generalised, and how they would differ if countries like Singapore or Israel had been added to the selection. In other words: having identified a distinct Catholic cultural impact with Catholic countries systematically exhibiting stricter regulations, one might ask whether there is also a distinct Christian impact. The data give some hints that such an impact may indeed be present. First, the regression models show relatively high values for the intercept, that is, the mean strictness of regulation, when all factors considered have their mean value.²⁵ Table 5 shows this most clearly: a country that has a mean proportion of Christian democrats and left parties in government, a mean number of veto players, the corresponding mean values for the interaction terms and a mean proportion of Catholics already should have an embryo research index of 5.71. Without laying too much stress on the "exact" numerical value, this means that an average country under study already has an embryo research regulation that is well above the theoretical average strictness. Second, this is complemented by the fact that several techniques that form the embryo research index are banned in nearly all of the

²⁵ This interpretation emerges because the independent variables are all centred.

countries under study (cf. Table 2). There seems to be an unanimous consensus to ban reproductive cloning, and a broad consensus to ban therapeutic cloning and the production of human embryos solely for research purposes.²⁶ So, there might – for the moment, at least – be a nearly universal worldview across Christian nations that some venues of embryo research are unacceptable.

Considering partisan politics, the thesis that Christian democrats pursue restrictive policies on embryo research if they are able to can be cautiously supported. The evidence are not as good as the evidence for the cultural hypothesis. However, we may tentatively conclude that Christian democratic parties tend to draft restrictive laws on embryo research if the institutional context is favourable and only few veto players are present. Under favourable conditions – strong support of the church, supportive referendums, coherent coalitions – they may even do so when many formal veto players are present.

The partisan difference hypothesis does not receive full-fledged support, as the expected symmetry could not be found. According to theoretical considerations, the results for Christian democracy should be mirrored in the results for left parties, that is, left parties should pursue liberal embryo research policies if the institutional context permits this. However, this thesis does not receive support from the regression models, and the graphical evidence show that the number of cases is too small to arrive at a valid judgement. Strong left parties are not always associated with liberal embryo research policies, even when they presumably have the opportunity to implement them. This may point to a problem with the assumption that left parties have liberal preferences and support embryo research.

Concerning the initial question, whether society or politics dominates policymaking in embryo research, the long and elaborate answer is “as well as”: a country’s religion, the strength of Christian democracy, the preference constellation in the governing coalition and possible direct democratic influence all contribute to the outcome of interest, embryo research policies. The short and simplified answer is that there is an advantage for a society-centred explanation: If we know a country’s denominational structure, we can have a good first guess about its embryo research policies.

²⁶ The latter two techniques are allowed in Israel and Singapore.

References

- Aiken, Leona S. / Stephen G. West (1991): *Multiple Regression. Testing and Interpreting Interactions*. London: Sage.
- Arie, Sophie (2005): In Europe, Italy now a guardian of embryo rights. *Christian Science Monitor*, 14.6.2005. <http://www.csmonitor.com/2005/0614/p01s04-woeu.html> [accessed 10.8.2005]
- Armingeon, Klaus / Michelle Beyeler / Sarah Menegale (2002): *Comparative Political Data Set 1960 – 2001*. Institute of Political Science, University of Berne.
- Beck, Nathaniel (2001): Time-Series Cross-Sectional Data: What have we learned in the past few Years? *Annual Review of Political Science* 2001(4): 271-293.
- Beck, Nathaniel / Jonathan N. Katz (2004): *Time-Series-Cross-Section Issues: Dynamics, 2004*. Working Paper. jkatz.caltech.edu/papers/ts.pdf
- Berger, Peter L. (1969): *The sacred canopy: elements of a sociological theory of religion*. Garden City (N.Y.): Doubleday.
- Berger, Peter L. (1996): Secularism in Retreat. In: *National Interest* 46, 3-12.
- Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge.
- Bosch, Xavier (2004): Spain eases embryo research. *The Scientist Daily News*, 1.11.2004.
- Broughton, David (1988): *The Social Bases of Western European Conservative Parties*. In: Girvin, Brian (ed.): *The Transformation of Contemporary Conservatism*. London: Sage.
- Casanova, José (1994): *Public Religions in the Modern World*. Chicago: University of Chicago Press.
- Castles, Francis G. (1993): *Families of Nations. Patterns of Public Policy in Western Nations*. Aldershot: Dartmouth.
- Castles, Francis G. (1998): *Comparative public policy: patterns of post-war transformation*. Cheltenham: Edward Elgar.
- Castles, Francis G. / Michael Flood (1993): Why Divorce Rates differ: Law, Religious Beliefs and Modernity. In: Castles, Francis G. (1993): *Families of Nations. Patterns of Public Policy in Western Nations*. Aldershot: Dartmouth, 293-326.
- Council of Europe (1998): *Medically assisted Procreation and the Protection of the Human Embryo. Comparative Study on the Situation in 39 States*. Strasbourg: Council of Europe.
- Derckx, Veelke / Ewoud Hondius (2002): The Rights of the Embryo and the Foetus under Dutch Law. *Electronic Journal of Comparative Law*, Vol. 6.4.
- Dubouchet, Julien / Ulrich Klöti (2004): ART in Spain. Technocratic inheritance and modernist aspirations. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 102-119.
- Duverger, Maurice (1966): *Sociologie Politique*. Paris: PUF.
- Engeli, Isabelle (2004): France. Protecting human dignity while encouraging scientific progress. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 138-154.
- Eser, Albin / Hans-Georg Koch / Thomas Wiesenbart (1990): *Regelungen der Fortpflanzungsmedizin und Humangenetik*. Frankfurt/M.: Campus.
- Field, Marilyn L. (1980): Determinants of Abortion Policy in the Developed Nations. In: Dye, Thomas R. / Virginia Gray (eds.): *The Determinants of Public Policy*. Lexington Books: Lexington, 187-195.
- Gallagher, Michael / Michael Laver / Peter Mair (1995): *Representative Government in Modern Europe*. 2nd edition. London: McGraw-Hill.

- Gerber, Elisabeth R. / Simon Hug (2001): Legislative Response to Direct Legislation. In: Mendelsohn, Matthew / Andrew Parkin (eds.): Referendum Democracy. Citizens, Elites and Deliberation in Referendum Campaigns. New York: Palgrave.
- Gindulis, Edith (2001): Die Bestimmungsfaktoren der Gesetzgebung zum Schwangerschaftsabbruch im OECD-Vergleich. ZeS-Arbeitspapier Nr. 14/2001. Bremen: Zentrum für Sozialpolitik, Universität Bremen.
- Githens, Marianne (1996): Reproductive Rights and the Struggle with Change in Eastern Europe. In: Githens, Marianne / Dorothy McBride Stetson (eds.): Abortion Politics: Public Policy in Cross-Cultural Perspective. London: Routledge, 55-68.
- Gottweis, Herbert (2002): Stem Cell Policies in the United States and Germany: Between Bioethics and Regulation. Policy Studies Journal 30(4), 44-469.
- Gottweis, Herbert / Barbara Prainsack (2002): Religion, Bio-Medizin und Politik. In: Minkenberg, Michael / Ulrich Willems (Hrsg.): Politik und Religion. PVS-Sonderheft 33. Wiesbaden: Westdeutscher Verlag, 412-432.
- Gratton, Brigitte (2002): Survey on the National Regulations in the European Union regarding Research on Human Embryos. Report for The European Group on Ethics in Science and New Technologies (EGE).
- Hanley, David (1994): Introduction. Christian Democracy as a political phenomenon. In: Hanley, David (ed.): Christian Democracy in Europe. A Comparative Perspective. London: Pinter, 1-11.
- Hicks, Alexander M. (1994): Introduction to pooling. In: Hicks, Alexander / Thomas Janoski (eds.): The comparative political economy of the Welfare State. Cambridge: Cambridge University Press, 169-188.
- Hirter, Hans / Wolfgang Linder (2004): Analyse der eidgenössischen Volksabstimmung vom 28. Nov. 2004. gfs Bern / Universität Bern: VOX Nr. 85.
- Inglehart, Ronald (1997): Modernization and postmodernization : cultural, economic, and political change in 43 countries. Princeton, NJ: Princeton Univ. Press.
- Inglehart, Ronald / Wayne E. Baker (2000): Modernization, cultural change, and the persistence of traditional values. American Sociological Review 65, 19-51.
- Jaccard, James / Robert Turrisi / Choi K. Wan (1990): Interaction Effects in Multiple Regression. London: Sage.
- Kalyvas, Stathis N. (1996): The Rise of Christian Democracy in Europe. Ithaca: Cornell University Press.
- King, Gary / Robert O. Keohane / Sidney Verba (1994): Designing Social Inquiry: Scientific Inference in Qualitative Research. Princeton: Princeton University Press.
- Koch, Hans-Georg (2001): Fortpflanzungsmedizin im europäischen Rechtsvergleich. Aus Politik und Zeitgeschichte 27/2001, 44 – 54.
- Körtner, Ulrich / Michael Bünker (2001): Verantwortung für das Leben. Eine evangelische Handreichung zu Fragen der Biomedizin im Auftrag des Evangelischen Oberkirchenrats A. und H.B. der Evangelischen Kirche A. und H.B. in Österreich. Wien.
- Lane, Jan-Erik / Svante Ersson (1999): Politics and Society in Western Europe. 4th Edition. London: Sage.
- Lauritzen, Paul (2001): Introduction. In: Lauritzen, Paul (ed.): Cloning and the future of Human Embryo Research. Oxford: Oxford University Press, 1-20.
- Lipset, Seymour Martin / Stein Rokkan (1967): Cleavage Structures, Party Systems and Voter Alignments: An Introduction. In: Rokkan, Stein / Seymour Martin Lipset (eds.): Party Systems and Voter Alignments: Cross-National Perspectives. New York: Free Press, 1-64.
- Lorenzi, Rossella (2005): Italy faces embryo referendum. The Scientist Daily News, 2.6.2005
- Luckmann, Thomas (1967): The invisible religion: the problem of religion in modern society. New York: MacMillan.
- Madeley, John T.S. (2003): A Framework for the Comparative Analysis of Church-State Relations in Europe. West European Politics 26(1), 23-50.
- Martin, David (1978): A General Theory of Secularization. Oxford: Basil Blackwell.
- Mavrogordatos, George (2003): Orthodoxy and Nationalism in the Greek Case. West European Politics 26(1), 117-136.

- McDonald, Michael D. / Silvia M. Mendes (2002): *Governments, 1950-1995*.
- Minkenberg, Michael (2002): Religion and Public Policy. Institutional, Cultural, and Political Impact on the Shaping of Abortion Policies in Western Democracies. *Comparative Political Studies* 35(2), 221-247.
- Minkenberg, Michael (2003): The Policy Impact of Church-State Relations: Family Policy and Abortion in Britain, France, and Germany. *West European Politics* 26(1), 195-214.
- Montpetit, Éric (2004): Policy networks, federalism and managerial ideas. How ART non-decision in Canada safeguards the autonomy of the medical profession. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 64-81.
- Mulkay, Michael (1997): *The Embryo Research Debates: Science and the Politics of Reproduction*. Cambridge: Cambridge University Press.
- Neidhart, Leonhard (1970): *Plebiszit und pluralitäre Demokratie. Eine Analyse der Funktion des schweizerischen Gesetzesreferendums*. Bern: Francke.
- Neue Zürcher Zeitung (NZZ) Online (2004a): Stammzellenforschung kommt vor das Volk. 6.4.2004. <http://www.nzz.ch/2004/04/06/il/page-newzzDSPY55JR-12.html> [accessed 10.8.2005]
- Neue Zürcher Zeitung (NZZ) Online (2004b): Ein Ja für die Forschungsfreiheit. 28.11.2004. <http://www.nzz.ch/2004/11/28/il/newzzE23NFJIS-12.print.html> [accessed 10.8.2005]
- Nielsen, Torben Hviid et al. (2002). Traditional blue and modern green resistance. In: Bauer, Martin W. / George Gaskell (eds.): *Biotechnology – The Making of a Global Controversy*. Cambridge: Cambridge University Press, 179 – 202.
- O'Connor, Karen (1996): *No Neutral Ground? Abortion Politics in an Age of Absolutes*. Boulder: Westview.
- Outshoorn, Joyce (1996): The Stability of Compromise: Abortion Politics in Western Europe. In: Githens, Marianne / Dorothy McBride Stetson (eds.): *Abortion Politics: Public Policy in Cross-Cultural Perspective*. London: Routledge, 145-164.
- Plümper, Thomas / Philip Manow / Vera Troeger (2003): Pooled Data Analysis in the Comparative Political Economy: A Note on Methodology and Theory. Paper presented at the ECPR General Conference Marburg, 18th – 21st September 2003.
- Pötter, Bernhard (2001): Der Mensch ist keine Ware. Interview mit Manfred Kock, Vorsitzender des Rates der Evangelischen Kirche Deutschland. *Die Tageszeitung*, 13.6.2001.
- Pontifical Academy for Life (2000): Declaration on the production and the scientific and therapeutic use of the human embryonic stem cells. http://www.vatican.va/roman_curia/pontifical_academies/acdlife/documents/rc_pa_acdlife_doc_20000824_cellule-staminali_en.html (date of access: April 19th, 2004).
- Ramjoué, Celina / Ulrich Klöti (2004): ART Policy in Italy. Explaining the lack of comprehensive regulation. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 42-63.
- Roller, Edeltraut (2003): Conceptualizing and Measuring Institutions of Democratic Governance: A Critical Review and Empirical Validation of Veto-Player Indexes. Paper presented at the ECPR Joint Sessions of Workshops, 28th March – 2nd April, Edinburgh.
- Rothmayr, Christine / Celina Ramjoué (2004): Germany. ART policies as embryo protection. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 174-190.
- Rothmayr, Christine / Frédéric Varone / Uwe Serdült / Arco Timmermans / Ivar Bleiklie (2004): Comparing policy design across countries. What accounts for the variation in ART policies? In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 228-253.
- Rothmayr, Christine / Uwe Serdült (2004): Switzerland. Policy design and direct democracy. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 191-208.
- Rucht, Dieter (1994): *Modernisierung und neue soziale Bewegungen*. Frankfurt/M.: Campus.

- Schiffino, Nathalie / Frédéric Varone (2004): ART policy in Belgium. A bioethical paradise? In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 21-41.
- Schmidt, Manfred G. (1996): When parties matter: A review of the possibilities and limits of partisan influence on public policy. *European Journal of Political Research* 30, 155-183.
- Stark, Rodney (1999) 'Secularization, RIP', *Sociology of Religion* 60(3): 249–73.
- Studlar, Donley T. / Raymond Tatalovich (1996): Abortion Policy in the United States and Canada: Do Institutions matter? In: Githens, Marianne / Dorothy McBride Stetson (eds.): *Abortion Politics: Public Policy in Cross-Cultural Perspective*. London: Routledge, 75-95.
- Thomas, John Clayton (1975): *The Decline of Ideology in Western Political Parties: A Study of Changing Policy Orientations*. London: Sage.
- Timmermans, Arco (2004): The Netherlands. Conflict and consensus on ART policy. In: Bleiklie, Ivar / Malcolm L.Goggin / Christine Rothmayr (eds.): *Comparative Biomedical Policy: Governing Assisted Reproductive Technologies*. London: Routledge, 155-173.
- Tsebelis, George (1995): Decision Making in Political Systems: Veto Players in Presidentialism, Parliamentarism, Multicameralism und Multipartyism. In: *British Journal of Political Science* 25, 289-325.
- Tsebelis, George (2002): *Veto Players. How Political Institutions work*. Princeton: Princeton University Press.
- von Beyme, Klaus (1982): *Parteien in westlichen Demokratien*. München: Piper.
- Wagschal, Uwe (1997): Direct Democracy and Public Policymaking. *Journal of Public Policy* 17(2), 223-245.
- Weber, Max. (1920): *Gesammelte Aufsätze zur Religionssoziologie I*. Tübingen: Mohr.
- Wilson, Sven E. / Daniel M. Butler (2004): *A Lot More to Do: The Promise and Peril of Panel Data in Political Science*. Unpublished Manuscript.