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### **The Explanation of Religiosity: Testing Sociological Mechanisms Empirically**

**Jörg Stolz**

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Observatoire des Religions en Suisse | Unil - Batiment Vidy  
CH-1015 Lausanne - [info.ors@unil.ch](mailto:info.ors@unil.ch) - [www.unil.ch/ors](http://www.unil.ch/ors)

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Observatoire des religions en Suisse (ORS)

# The Explanation of Religiosity: Testing Sociological Mechanisms Empirically

**Jörg Stolz**

## **Abstract**

The goal of this article is to present and test a new "unified framework" for the explanation of Christian and "alternative" religiosity. The model reconstructs and integrates the most important theories explaining religiosity (deprivation, regulation, socialization, cultural production, and ethnicity) as complementary causal mechanisms in a rational-action based framework. The different mechanisms are operationalized and tested on representative data from Switzerland. A multi-level model is used to estimate effects in order to allow for the fact that theoretical mechanisms can be located on aggregate or individual levels. Substantively, I find for the Swiss case that Christian religiosity can be best explained by a religious socialization mechanism. Deprivation, social control, religious tradition of the canton as well as gender and age mechanisms also play a certain role. State regulation, ethnicity or the secular culture of the canton, on the other hand, have no explanatory power. Alternative religiosity can be explained to a much lesser extent than Christian religiosity. The most important mechanisms involve deprivation, gender, and age.

## **The author**

Jörg Stolz is professor of sociology of religion at the University of Lausanne, Switzerland. He is also the director of the Observatory of Religion in Switzerland (ORS). His publications are centred on questions of religion and immigration. Special interests are: evangelicalism, new forms of religiosity, conversion, societal attitudes towards religions and sects, combined quantitative and qualitative methods.

## The Explanation of Religiosity: Testing Sociological Mechanisms Empirically

Jörg Stolz

### 1. Introduction<sup>1</sup>

In the discussion about the explanation of religiosity of the past decades, a fierce battle between various theories has been fought. Rational-choicers (Stark/Finke 2000) were convinced that secularization theorists (Bruce 1999, 2002) were wrong and vice versa. Others have proposed socialization approaches (Voas 2003, 2005) or a new combination of modernization and deprivation theory (Norris/Inglehart 2004). In this - sometimes very heated - debate, the positions of the various opponents have been almost unanimously considered to be utterly incompatible. It would seem that one had to believe *either* that religiosity was influenced by macro-factors like rationalization or differentiation *or* that individuals were rationally choosing religion (and would demand less religion in regulated markets) *or* that individuals were mainly influenced by the fact that they had or had not been exposed to religious socialization in their childhood. Similarly, one purportedly had to choose one's camp by deciding if individuals were either rational and influenced by opportunities, *or* influenced by norms and culture. In contrast to these views, Stolz (2007) has recently argued that such decisions are neither necessary nor feasible. He claims that religiosity cannot be explained by one factor only as many theorists seem to believe. Rather, very different mechanisms may all - and sometimes in combination - produce religiosity in different times and places. It is therefore useful to draw up a list of different theoretical mechanisms. In order to do this, he extracts social mechanisms from the most important current sociological theories and integrates them into a unified rational-action based framework. He then argues that the relative importance of one or another mechanism in a given historical context depends on historical parameters and is an empirical question

The goal of this paper is to briefly present and then apply the general model by Stolz to empirical data and thus to investigate which of the theoretical mechanisms are important in order to explain Christian and alternative religiosity in *one special case*, namely Switzerland in 1999. A special point is made by distinguishing Christian and alternative religiosity in order to be able to capture the overall phenomenon of "religiosity" more comprehensively than is often done and to apply multi-level models where appropriate. I try to contribute to the literature by showing:

- that a general explanatory model may be constructed that integrates all the important explanatory mechanisms based on rational-choice

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<sup>1</sup> I would like to thank Steve Bruce, Stefan Huber, Jeanne Rey and David Voas for very helpful comments, Jean-Philippe Antonietti for statistical advice and Christine Rhone for correcting the text. The usual disclaimers apply.

- that and how such a model may be operationalized and tested on empirical data
- that models that try to explain religiosity should do so for different kinds of religiosity that may have strongly differing structures of explanatory factors
- that multi-level models are appropriate in cases where theories presuppose different "levels of reality".
- what substantive explanatory factors are needed to explain the Swiss case concerning Christian and alternative religiosity.

Substantively, I find that for the Swiss case, Christian religiosity can be best explained by a religious socialization mechanism. Deprivation, social control, religious tradition of the canton as well as gender and age also play a certain role. State regulation, ethnicity or the secular culture of the canton, on the other hand, have no explanatory power. Alternative religiosity can be explained to a much lesser extent than Christian religiosity. The most important mechanisms involve deprivation, gender, and age. The plan of the paper is standard: I define the terms religiosity, explanation, and theoretical mechanism (section 2); present the general model with the different mechanisms (section 3); go into questions of method and operationalization (section 4); present the results (section 5); and close with a discussion (section 6).

## 2. Defining the terms

### 2.1 Religiosity

I define *religiosity* as *individual* preferences, emotions, beliefs, and actions that refer to an existing (or self-made) religion. 'Religion' then denotes the whole of cultural symbol-systems that respond to problems of meaning and contingency by alluding to a transcendent reality which influences everyday life but cannot be directly controlled. Religious symbol-systems incorporate mythical, ethical and ritual elements as well as 'salvation goods' (see for similar definitions: Geertz 1993; Pollack 2003). Note that – following these definitions – religiosity is an individual and religion a cultural phenomenon. If an individual prays, sacrifices, believes, loves or fears his god - then this is 'religiosity'. 'Christianity', 'Islam', 'Christian Science' or 'Raelianism', on the other hand, are religious symbol-systems, that is, 'religions'. With the data used in this paper, I can tap specifically two types of religiosity: a "Christian religiosity" and an "alternative religiosity".

### 2.2 Explanations and mechanisms

Explanations are not just descriptions, typologies or 'conceptual frameworks', but very concrete answers to 'why-questions'. A phenomenon is said to be explained if one can show how it results from a set of initial conditions and a generative (and therefore causal) mechanism (Hedström/Swedberg 1998). The "social causality" incorporates a. opportunities, norms, and cultural resources in a situation, b. "rational"

action, based on preferences by various individuals reacting to these situations and c. the fact that these reactions may have various intended and unintended effects. Important authors in the field of explanatory sociology are, for example, Boudon (2003), Coleman (1990), or Goldthorpe (2000). A new formulation of the model that summarizes and integrates the advances of recent decades appears in the books by Hartmut Esser (1996, 1999, 2000).

It is important to note that by explaining "religiosity", we try to account for phenomena which are situated on different levels. We do not want just to explain actions (such as church attendance), but also, for example, preferences (e.g. how important the church is to an individual) or beliefs (e.g. if one believes in the resurrection of Jesus Christ). We thus have to watch for mechanisms that can account not just for action, but also for the formation of preferences and beliefs.

### **3. Mechanisms that generate religiosity: An integrated model**

In what follows, I will sketch the general theoretical framework and the different mechanisms that are said to generate religiosity according to different sociological approaches. The central idea of this "integrated model" is very simple. Recently, German scholar Hartmut Esser has presented a new sociological model that combines sociology and rational choice. He argues that individuals react "rationally" not just to opportunities but also to norms and culture. The choices are based on preferences that have often been formed by socialization but may also sometimes be rationally "chosen". This model is used as a "baseline" for reconstructing existing explanations of religiosity. We then see that what is often presented as completely opposed "theories" are just different (and complementary) theoretical mechanisms in the more general framework.

#### **3.1 The general model**

Since the theoretical background of the model has been presented in detail elsewhere, I only sketch it very briefly here, adapting it to the specific needs of my case.

1. The explananda are distributions of individual preferences, emotions, beliefs and actions (= distributions of religiosity)
2. Individual formation of preferences, beliefs and emotions, as well as actions, take place in *situations*. Situations incorporate opportunities, institutional rules, and cultural framing. Opportunities consist of factual options faced by individuals, that is, the means actors control in a situation in order to reach their goals (Esser 1999: 52). Economists often focus almost exclusively on this level. A second element of situations consists of institutional rules, e.g. societal norms, roles, or constitutions that are backed up by positive or negative sanctions (Esser 1999: 53). The third element of situations is cultural frames.

- These are 'models' for typical situations and processes such as 'frames' or 'scripts', as well as symbol-systems (like languages or ideologies).<sup>2</sup>
3. Individuals tackle situations with the help of knowledge, preferences, and identity. Knowledge includes cognitions, the stock of different types of expertise, and the expectations that individuals have at their disposal. Preferences are ordered evaluations by means of which individuals assess their environment. Personal identity is the sum of self-descriptions and self-evaluations of an individual (including descriptions and evaluations of him- or herself to the environment).
  4. Knowledge, preferences, and identity are influenced by two factors. First, by (primary and secondary) *socialization* of the individual that has taken place in the past.<sup>3</sup> Second, they are determined by the current situation, specifically by institutional and cultural parameters (Esser 1999: 75ff). To a certain extent, individuals choose their preferences for particular goods as well as the beliefs and feelings attached to them according to the value accorded to these goods in society (institutions and culture). If institutions and culture change, individual preferences may change accordingly. To give just one example: When the GDR broke down in 1989/90, the fact of having received a medal of honor by the GDR regime was suddenly not a plus, but a terrible stigma; preferences for and feelings attached to this "good" thus changed practically overnight.
  5. The theory assumes next, that individuals act and - to a certain extent - form beliefs and preferences in a *rational* way. An action is said to be rational if it chooses from all possible options the one promising the greatest utility. We opt for a model of 'bounded rationality' (Simon 1983); this means that we acknowledge the influence of institutional and cultural factors as well as the fact that individuals have only a limited faculty of calculation. A belief is rational if we have "good reasons" to think that it is correct, given the evidence (Boudon 1998). A preference is rational if it leads individual behaviour (according to its own subjective standards) towards furthering the overall well-being and utility of the individual (Elster 1986: 14).

The main goal of the following pages is to reconstruct existing theories inside this framework, identifying the exact mechanisms that lead from initial situations to individual's rational adaptations and to more or less religiosity as the outcome.

### 3.2 Deprivation

The first mechanism we introduce argues that deprivation of different kinds leads to or reinforces religiosity. Deprivation may be defined as a situation

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<sup>2</sup> The distinction between opportunities, institutions, and cultural frames is an analytical one. In concrete empirical cases, the three 'domains' are very often linked in various ways (Esser 1999: 51).

<sup>3</sup> In our view, rational-action and socialization theory are complementary.

in which an individual is not able to satisfy one or several needs.<sup>4</sup> Thinking back to our general theoretical framework, we see that, in this mechanism, *lack of opportunities and resources* (e.g. low income, low social status) is the main factor leading to the rational adaptation of individuals. The theoretical mechanism is straightforward: Individuals who find themselves in depriving circumstances will seek a solution to their problems. It may therefore be rational to turn to a religion that offers help in various forms. Religions can help by (a) referring to myths and thus provide 'meaning' to deprivations, e.g. theodicies; (b) embedding suffering into ritual actions and strict rules of conduct (e.g. prayers, sacrifice, religious service, ethics); (c) rendering suffering bearable through a specific 'habitus', e.g. being one of the "chosen few"; (d) promising hope and good outcomes for the future (Weber 1985 (1922) : 299 ff., Niebuhr 1957, Glock 1963, Stark/Bainbridge 1985, Norris/Inglehart 2004: 19). Apart from these rather intangible goods, religious groups may also offer very concrete help with housing, food, comfort, finances, medical care, etc. (Gill/Lundsgaarde 2004). The theory also states that rational individuals will seek the solution to their problem that seems the most efficient, reliable, and inexpensive. Thus, when secular alternatives are available that seem to "work better", individuals will switch out of religion and into the secular (Glock 1963, Stark/Bainbridge 1985). Already emphasized by Max Weber, the deprivation mechanism was strongly propagated in the 1950s and 60s. It fell from grace in the sociological debate from the 1980s onward (with an exception concerning the Stark/Bainbridge 1985 theory of "compensators"). Deprivation theory has had an important revival with the recent book by Norris/Inglehart (2004), who argue that levels of religiosity in countries worldwide are influenced by two factors only: level of deprivation (or human (in-)security) and religious tradition.<sup>5</sup> If the deprivation mechanism holds, the following hypotheses follow:

- Individuals who are objectively disadvantaged in the social structure (poor, low social status, low income, low education, no partner) should be more religious.
- Individuals who feel subjectively unhappy and depressed, or "have problems", should be more religious.
- Deprivation and religiosity should be more closely correlated in contexts where secular alternatives are lacking. This is an important point since, in contexts with viable secular alternatives, individuals will "treat" their problems and deprivations increasingly in a secular way.

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<sup>4</sup> Deprivation depends on needs and possibilities to fulfil them. Needs are influenced by biological, psychological, and social factors. Among the social factors, social comparison with reference groups is very important (relative deprivation).

<sup>5</sup> An important problem for the Norris/Inglehart theory is, however, that the proposed correlation seems to hold strongly only on the aggregated, but not on the individual level.

### 3.3 Regulation

A second mechanism may be termed regulation. I define regulation very broadly as the ways in which the state or social groups influence individual or collective actors through enforceable rules and norms. Relating this mechanism to our general framework, we see that here it is mainly *norms* that lead actors to various types of rational adaptations. Two main theoretical approaches to regulation can be distinguished, one concerning "supply", the other one "demand". The supply-side regulation mechanism, proposed by "rational-choice-theorists" is as follows (Iannaccone 1991/1992; Finke/Stark 1992; Stark/Iannaccone 1994). The state regulates the supply of religion by applying rules and norms, thus favoring some religious groups and discriminating others. In extreme cases, it establishes one state religion and bans all or other religions (as is the case in current Saudi Arabia) or it bans or hinders religion altogether (as was the case in former East Germany). In moderate cases, such as modern Germany, Italy or Sweden, some religious groups with "official recognition" enjoy various advantages. Other unrecognized groups are therefore disadvantaged. Such regulations, rational-choicers say, prevent the religious market from working properly; it will be rational for "recognized" religious groups and church leaders to become lazy and they will supply - as all monopolists do - a product which is too expensive and insufficiently attuned to customer needs. As a result, customers do not find the religious product they are looking for and - as a rational adaptation - will not "consume" as much as they would have done in a free market. Hence, overall religiosity goes down. The supply-side-regulation argument has received much attention in the last decades, since it was presented as part of a "new paradigm" (Warner 1993). At the same time, it has been severely criticized theoretically (Bruce 1999) and the overall empirical evidence for the mechanism seems rather weak (Chaves/Gorski 2001, Norris/Inglehart 2004). Furthermore, Voas/Olson/Crocket have shown that one cannot make the case for (or, for that matter, against) the market argument by using the independent variable "pluralism", since this necessarily leads to mathematical artefacts.

The demand-regulation story is very different told less often. The state and social groups can regulate individuals' demand for religion: positive or negative sanctions may apply to religious membership, participation, belief (or at least absence of visible disbelief) may be positively or negatively sanctioned. Rational individuals will now follow the rules and show or abstain from showing religiosity in order to gain social approval and/or avoid punishment.<sup>6</sup> Such a regulation of demand may be a deliberate state policy (Borowik 2002, Froese/Pfaff 2005); it may also be the result of anonymous social control in small (e.g. rural) communities or generally in social groups with strong and/or many social ties (McLeod 1998, Sherkat 1997, Olson 1999) Especially if we look at historical evidence, there can be no doubt, that "regulation of demand" has been a very important element of the religiosity, say, in Europe up until the 20th century. The normative pressure

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<sup>6</sup> Conversely, the state may also ban or hinder all individual religiosity.

on individuals to belong to a certain confession, to follow the prescribed rites and, hide disbelief and to abstain from seeking out religious or magical alternatives was very high indeed (e.g. Poos 1995, Swanson 1990).

If the regulation mechanisms hold, the following hypotheses follow:

- The more important state regulation of religious supply, the lower individual religiosity
- The higher positive (negative) sanctioning of religious demand (religiosity) by the state or society, the higher (lower) individual religiosity

Note that states may (and do) use regulation of demand and supply simultaneously, which can lead to opposite effects on religiosity. Thus, while regulation of supply may on the one hand lead to a lazy monopolistic church, thus stifling demand, regulation of demand may sanction religious practice positively, counterbalancing the first effect. It therefore seems important to operationalize and measure the different causal mechanisms with care.

### 3.4 Socialization

Yet another mechanism works through socialization. Since religiosity refers to religions, that is, religious symbol systems, individuals have to learn "religious content" before they can even become religious (except, of course, if they create a "religion" themselves). They have to acquire knowledge, preferences and identity related to myths, rites, ethics, salvation goods, etc. (De Roos/Iedema/Miedema). Socialization may be defined as an interactive, both voluntary and involuntary, process of transmission and learning in which individuals teach and learn norms, values, behavior, expertise, meanings and identity, and in which socialized individuals may integrate these elements into their personality by internalization (compare to Esser 2000: 371). Thinking back to our general theoretical framework, we see that socialization is one of the most important ways of building preferences. Socialization itself then may, but does not necessarily have to, involve rationality.<sup>7</sup> Five separate forms of this mechanism have been identified in the literature. First, parents are likely to transmit their personal religious preferences, beliefs and practices to their children – even if they do not consciously try to do so. Other things being equal, high parental religiosity leads to higher religiosity of children. This mechanism may be described as "social learning" (De Roos/Iedema/Miedema 2004) "sedimenting of beliefs" (Bruce 1999) or "transmission of religious human capital" (Iannaccone 1990). Empirical studies show that the power of this transmission is influenced by various contextual factors and by the type of values, beliefs or practices (Hoge/Petrillo/Smith 1982, De Roos/Iedema/Miedema 2004, Lindner/Gunnoe/Moore 2002). Second, parents will teach religious values to their children if they believe that these values are "important" and "useful", independently of whether they themselves are personally religious or not.

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<sup>7</sup> I argue that socialization mechanisms are completely compatible with "rational-choice" arguments, even if socialization processes are often not (or only in a very broad sense) "rational".

The central factor here is societal norms and "social productions functions" (Lindenberg). A study by David Voas (2003), for example, seems to suggest that baptism of children was considered an important social convention if not a religious duty in England before the 1940s, so that even children of mixed marriages were very likely to be baptized. After the 1940s, however, these societal norms withered, and since then children in mixed marriages have a very low probability of being baptized. Third, religiously homogamous couples are more likely to transmit religious membership, behavior, and belief than religiously heterogamous couples (Voas 2003, Need/De Graaf 1996, Iannaccone 1990). Individuals in religious heterogamous couples have not made religious membership an important criterion for the choice of their partner; it is therefore likely that they do not put much emphasis on religion or the religious socialization of their children in general. However, even if individuals in heterogamous couples wanted to transmit their religious heritage, various structural barriers exist. Fourth, peers influence the religiosity of individuals through both religious socialization and social control (Lindner Gunnoe/Moore 2002). Fifth, religious education in school or in church can influence religiosity. As Linder Gunnoe/Moore (2002: 614) note: "Religious schooling fosters religiosity by reinforcing parents' socialization efforts and by channeling adolescents into religious peer groups." If socialization theory holds, the following hypotheses follow:

- Individuals will be more religious if their parents have been more religious.
- Individuals will be more religious if they have grown up in a society or religious group in which religion is positively sanctioned, since parents will give religious socialization independent of their own religiosity.
- Individuals will be more religious if they come from religiously homogamous couples than if they come from "mixed marriages"
- Individuals will be more religious if they have had religious schooling.
- Individuals will be more religious if they have been members of religious youth groups.

### **3.5 Production of religious and secular culture**

The next mechanism is termed "production of religious and secular culture". Traditional secularization theory argues that the differentiation of modern society leads to the existence of a number of differentiated "societal systems" producing secular culture, that is, means of interpreting the world (Wilson 1966, Wallis/Bruce 1995). While a number of these systems exist, in terms of culture, special focus must go to the media, science and leisure. We can transform this macro-proposition into an explanatory macro-micro-macro mechanism by stating the following: The higher the share of secular cultural interpretations and products in all the cultural interpretations and products in a given society or social group, the higher the probability that a given individual will think, interpret, and act in a secular way. Conversely, the higher the religious share of cultural interpretations and products, the higher the probability that the individual will react in a religious way.

Thinking back to our general model, we see that this mechanism influences, on the one hand, the cultural frames and, on the other hand, the opportunities of individuals. Let us take some examples concerning cultural frames. If religious production of culture is salient, it is probable that a Tsunami, the crash of the stock market, a broken leg, or the birth of a particularly heavy baby will be interpreted religiously as the will of God or the result of religious laws. If, on the other hand, secular production of culture is preponderant, the same phenomenon will rather be interpreted in secular – e.g. geological, economic, medical or statistical – terms. Alternatively, look at opportunities. We may choose to be informed by a religious or a secular newspaper, radio or TV-station, send our child to secular or religious scouts, and go to a secular or religious concert. The most important competition is probably to be seen between religious activities and leisure opportunities. As Luhmann (1982) has well pointed out, modernization has the effect that religious activities are increasingly pushed into the "leisure sphere" of the individual. Here, the individual has to decide "rationally" which - secular or religious - actions produce most "satisfaction". Religious activities thus have to compete with phenomena as diverse as sports, doing nothing, playing an instrument, watching TV, going out, shopping, etc. (Gruber/Hungerman 2006, Schulz 2001). Such a culture hypothesis has been presented concerning not only the relative "share" of religious or secular cultural products, but also the type of religious traditions (Norris/Inglehart 2004). Here, it is argued that "the distinctive world-views that were originally linked with religious traditions have shaped the cultures of each nation in an enduring fashion; today, these distinctive values are transmitted to the citizens even if they never set foot in a church, temple, or mosque." (ibid. 17). While Norris/Inglehart apply this hypothesis only to nations, it is clear that it might just as well apply to regions or even smaller geographical areas, if they were influenced historically by a religious tradition. If the cultural mechanism holds, the following hypotheses follow:

- the more important the secular leisure possibilities in a given country or geographic district, the lower the religiosity
- the more important the secular media possibilities in a given country or geographic district, the lower the religiosity
- the more important the contact with the humanities and the sciences in a given country or geographic district, the lower the religiosity
- countries or regions with different religious traditions should differ concerning aggregated religiosity

### 3.6 Ethnic/cultural assertion of identity

A further mechanism is called "ethnic and cultural assertion of identity" (Bruce 1999). Identity may be defined as the set of descriptions that individuals or a social group construct about themselves and their relations to their environment. These descriptions and hypotheses are always find support on distinctions (about what one is *not*), including norms and values that may be used in power struggles (Tajfel 1981, Esser 1999). Identity may be considered ethnic, if it supposes a common descent and rests on a common language, culture, nationality or religion (Barth 1969, Esser 1988). According to Bruce (1999), this mechanism is especially important for two types of actors. First, we have individuals negatively affected by rapid social and cultural change and/or political or cultural repression or conflict. These individuals see their acquired human, social and cultural capital being devalued by rapid social change or by oppression. It therefore becomes rational for them to fight for the importance of their ascribed identity markers, of their cultural-ethnic and religious identity. In this way, they can regain social worth. Well-known examples are Polish or Quebec Catholics as well as Protestants and Catholics in Ireland. Second: immigrants will often gather in the host country and build social networks and communities, in order to conserve their cultural (and often religious) identity and to receive help with integration. This may lead to a special emphasis on religion and religiosity in "diaspora groups" (e.g. Baumann/Salentin 2006; Warner/Wittner 1998; Bouma 1997). If the ethnic/cultural identity mechanism holds, the following hypotheses follow:

- Individuals have a higher probability of being religious if they are negatively affected by rapid social and cultural change or if their cultural identity is under threat from a culturally different group
- Immigrants have a higher probability of being religious

## 4. The Swiss context

Surrounded by Germany, Liechtenstein, Austria, Italy, and France, the Swiss Confederation is among the smallest but richest countries of Western Europe. It consists of 26 cantons (of which six are half-cantons). Switzerland is a multicultural country with four national languages (French, German, Italian, and Romansh). According to the Swiss national Census, in 2000 there were 41.8% Roman Catholics, 0.18% Christ Catholics, 33.0% Reformed, 1.46% Evangelicals, 1.81% Orthodox, 0.95% other Christian, 4.26% Muslim, 0.24% Jews, 0.29% Buddhists, 0.38 Hindus, 0.11 other religions, 11.11% no religion and 4.33% no indication (Stolz 2006, Baumann/Stolz 2007). Switzerland provides an interesting case for testing different mechanisms of religiosity, since it includes extremely rural and modernized cantons, cantons with a virtually absolute separation of church and state, others where church and state are closely linked and three regions with different language and ethnic cultures.

## 5. Method

### 5.1 Data

The data stem from a joint file of two surveys. First is the survey "Religion et lien social" (Campiche et al 2004).<sup>8</sup> This study is based on telephone interviews carried out in 1999. The population includes all individuals living in Switzerland aged between 16 and 75. Sampling was done in a two-stage, random way, first sampling communes, and then individuals inside the communes individuals. Response rate was 54%; the number of interpretable interviews was 1562. Second was the ISSP-study in Switzerland in 1999. This survey was a posted questionnaire to people who had already participated in the survey "religion et lien social". 1212 Individuals completed this additional questionnaire. This leads to the fact that for some items only a restricted sample of individuals is available. Analysis below will take this into account very carefully. Tests show an overall good representativity for standard demographic variables. Specifics can be found in Campiche et al 2004. For the purposes of this paper, individuals belonging to non-Christian religions had to be excluded from analysis, since non-Christian religions in Switzerland are so small that they appeared in the sample with too modest frequency to allow valid analysis.

### 5.2 Operationalizing Christian and alternative religiosity

I use four indicators in order to measure Christian religiosity: Importance of religion in general (7-point scale), frequency of prayer (5-point scale), frequency of Christian religious service (5-point scale), belief that God exists and that he has shown himself in Jesus Christ (5-point scale). These indicators tap belief, preferences, individual and collective practice and are

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<sup>8</sup> The project has benefitted from financial aid through the National Science Foundation. Project-Nr.: 12-52643.97.

highly correlated. I use four indicators in order to measure alternative religiosity: Belief in astrology (yes/no), belief that some fortune tellers can really see in the future (yes/no), belief that good luck charms really sometimes work (yes/no) and belief in reincarnation (5-point scale). These items only tap beliefs.<sup>9</sup> With factor analysis techniques I built two scales for the two types of religiosities respectively (see appendix, table A1 and A2). These two variables will be the "dependent" variables of further analyses. They measure two clearly different types of religiosities and are empirically not correlated.

### 5.3 Operationalizing the mechanisms

#### *Deprivation*

"Objective" deprivation was operationalized by two variables: income (11-point scale) and education (7-point scale). These two indicators were combined to form a "structural deprivation index". "Subjective" deprivation by the variables of self-reported class-membership (5-point scale) and happiness (4-point scale).

#### *Socialization*

Religious socialization was captured by five indicators, two tapping primary and three secondary socialization. A summated index of parents' church going when the respondent was 12 years old measured parents' religious practice in the formative years of the respondent (11-point scale). A dummy variable indicated if parents are religiously homogeneous, that is, if mother and father belong to the same denomination (Catholic, Reformed etc.). A dichotomous variable indicated if the respondent has been "confirmed" a rite which presupposes a period of catechism. An interval scale measured years of religious education in school. And a further dichotomous question asked if the respondent had attended a religious youth group at the age between 16 and 20. Using factor analysis techniques, these variables were combined to form a "religious socialization index",

#### *Regulation of demand*

In our theoretical section we have argued that religious demand may be regulated by social norms. We assume that these norms will be stronger in small villages, rural contexts and where norms of religious practice and belonging have not visibly been broken. Regulation of demand is measured in this study by three indicators. One is an index of community size (less than 3000; 3000 - 9999; 10000 - 100000; more than 100000 inhabitants). A second indicator is a dichotomous variable distinguishing urban and rural living contexts in Switzerland created by the FOS (federal office of statistics)

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<sup>9</sup> It is clear that especially "alternative religiosity" could be operationalized more satisfactorily, including practice and preferences and using a different type of response range. For the present study I have to use what items I have.

in Switzerland.<sup>10</sup> A third indicator is the percentage of individuals without religion in the community where individuals live, calculated on the basis of the national census from 1990. Using factor analysis techniques, these variables were combined to form a "regulation of demand index".

### *Ethnicity*

Nationality was captured by using a dummy variable for "naturalized Swiss" (the official term for a person who has acquired Swiss nationality after having had a different nationality before) and "foreigner", Swiss being the reference category. Mother language was likewise captured by creating a dummy variable for French-speaking and one for Italian-speaking individuals (German-speaking being the reference category).

### *Regulation of supply*

As already noted, the 26 Swiss cantons all have adopted different ways degrees of regulating religion (Becci 2001), leading to very weak regulation in, for example, Geneva and Neuchâtel and very strong regulation in cantons like Zurich or Berne. Regulation of supply was measured with an adapted version of the well-known scale by Chaves/Cann (1992). I adapted the scale in order to capture the differences in regulation between Swiss cantons as precisely as possible. The scale was constructed as a summated rating scale incorporating the following items:

- a. there is a single, officially designated state church (0 = no; 1 = yes)
- b. degree of official state recognition of some denominations but not others (0 = weak recognition, 1 = strong recognition)
- c. the state appoints or approves the appointment of church leaders (0 = no; 1 = yes)
- d. the state directly pays church personnel salaries (0 = no; 1 = yes)
- e. there is a system of ecclesiastical tax collection on individuals (0 = no; 1 = payment optional; 2 = payment mandatory)
- f. there is a system of ecclesiastical tax collection on moral persons (profit-oriented companies) (0 = no; 1 = yes)
- g. degree with which the state directly subsidizes, beyond mere tax breaks, the operating, maintenance, or capital expenses for churches (0 = no; 1 = weak; 2 = strong)

This leads to a scale which ranges from 0 - 9 points. Additional explanations concerning this scale can be found in the appendix. Coding was done relying on Frey (1999), Cattacin et al. (2003) and Informationsstelle für Steuerfragen (1999). The result of the coding is as follows: 1 (GE), 3 (NE,

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<sup>10</sup> This indicator is based on the idea that "urban" contexts are made of cities and agglomerations. A city has more than 10000 inhabitants; an agglomeration includes more than 20000 individuals, integrates different communities and disposes of a "central zone" which is made up of different community centres (Schuler 1997: 177ff.).

BS, AG, AR), 4 (AI, GL, GR, SG, SO, ZG, SH, OW, NW, TG, SZ, LU), 5 (VS, FR, TI, UR), 6 (JU, BL, VD), 8 (BE, ZH).<sup>11</sup>

### *Production of culture*

Production of culture was operationalized concerning leisure opportunities, closeness to the scientific world and religious culture. Leisure opportunities were operationalized as the mean state expenditure for culture in different cantons per capita from 1990-1998 (Bourquin 1999).<sup>12</sup> While this is only an indirect measure for total leisure possibilities, it nevertheless captures some of the leisure opportunity differences between cantons. Cantons with few large leisure facilities such as theatres, museums, opera will have lower state expenditure for culture per capita.<sup>13</sup> Closeness to the "scientific world" was coded on the basis of the information found in the Statistisches Jahrbuch der Schweiz 1998. Specifically, we operationalized it as the percentage of state expenditure on education related to total state expenditure per canton (including communes) (pp. 414). Religious culture was coded with two dummies, one for Reformed culture, one for mixed (Reformed and Catholic) culture, Catholic being the reference category.

### *Individual-level and social-level variables*

While most of the theoretical concepts implied by our theories may be measured on the individual level, some are clearly relating to a social level. This is especially the case for regulation of religious supply, where different cantons show different types of religious regulation. The same applies for variables concerning the production of culture, where we want to look at, say, state expenditure for culture or education in different cantons. Problems of this kind have to be addressed with multi-level models (Hox 1995, 2002; Snijders/Bosker 2000). In our case, we use a two-stage-model, in which one level concerns the cantons, while the other level concerns the individuals.

## **5.5 Hypotheses**

Table 1 gives on the "predicted" side to the left an overview over our hypotheses, distinguishing 7 causal mechanisms and two types of religiosity. These hypotheses imply a knowledge of how the mechanisms have been operationalized. Hypothesis (1) expects that religious regulation of supply will diminish both Christian and alternative religiosity. Hypothesis (2) expects that secular culture will diminish both Christian and alternative religiosity. Hypothesis (3) expects that traditional Catholic culture will lead to more Christian religiosity (compared to Protestant culture). Hypothesis (4) expects that (Christian) religious socialization will further Christian, but not alternative religiosity. Hypothesis (5) expects deprivation to raise both types of religiosity. Hypothesis (6) expects that the stronger the social norms (e.g.

<sup>11</sup> I thank René Pahud de Mortanges for help with questions of cantonal church law. The specifics of the operationalization and coding can be obtained from the author.

<sup>12</sup> The data were provided by Mr. Yvan Cuhe by the OFS.

<sup>13</sup> A problem with this operationalization is that it focuses on high culture, whereas popular culture might be also relevant. Unfortunately, I have not been able to track down indicators for popular culture by canton, though.

the smaller the community), the higher Christian religiosity but the lower alternative religiosity. Hypothesis (7) expects that foreigners or naturalized Swiss as well as French- or Italian speaking individuals will show more Christian religiosity than individuals with the Swiss nationality and German-speaking Swiss. Drawing on previous research (Campiche/Dubach 1992), we can hypothesize that women will show more Christian and alternative religiosity than men and that older individuals will show more Christian but less alternative religiosity than younger individuals.

**Table 1** *Hypotheses: predictions and findings*

	Predicted		Actual	
	Christ. rel.	Alt. rel.	Christ. rel.	Alt. rel.
<b>COLLECTIVE</b>				
(1) Regulation of supply	-	-	()	()
(2) Secular culture	-	-	()	()
(3) Religious (Catholic) culture	+	()	(+)	()
<b>INDIVIDUAL (theories)</b>				
(4) (Christian) socialization	+	-	++	()
(5) Deprivation	+	+	(+)	(+)
(6) Regulation of demand (norms)	+	-	(+)	()
(7) Ethnicity (e.g. foreigner, French -sp.)	+	()	(+)	()
<b>INDIVIDUAL (control)</b>				
(8) Gender (woman)	+	+	(+)	+
(9) Age	+	-	(+)	(-)

Legend: (-) = > -0.20 = moderately negative relationship; () = n.s. = no relationship; (+) = < 0.20 = "moderately positive relationship"; ++ = 0.20-0.40 = positive relationship"; +++ = > 0.40 = strong positive relationship"

## 5.6 Data analysis

Data analysis was conducted with the statistical packages SPSS for data exploration and data preparation and HLM for the multi-level modelling. All variables were standardized. As a result, the regression coefficients given in the tables below are standardized coefficients. We can thus compare the relative importance of different causal factors.

## 6. Findings

### 6.1 Explaining Christian religiosity

What theoretical mechanisms do explain religiosity in Switzerland? Let us first look at Christian religiosity (Table 2). The columns give out 5 models of multiple multi-level regressions (the zero-order correlations can be seen in

the appendix). These models consist of interlinked equations both on a collective and an individual level. The coefficients presented are the standardized regression coefficients which measure the “influence” of each indicator on the dependent variable “Christian religiosity” while controlling for all other variables in the model. Since regression coefficients change depending on what other variables are incorporated in the model, my data analysis strategy consists of a series of models in which I start with simple models and then add continually new sets of explanatory indicators in order to see how well these new indicators explain the dependent variable, how the coefficients for the variables that were already in the model change and how overall explained variance reacts. In what follows I will comment the models one by one.

*Model 1.* In this model I only enter state regulation of religious supply (measured by the regulation index) and secular culture (measured by state expenditure on culture and education). Here, we are on the collective level, that is, we look only at how well the explanatory indicators explain the difference in mean Christian religiosity between cantons. The theories expect that cantons with high regulation and strong state expenditures on secular culture will show low Christian religiosity. Clearly, we find no evidence for these theoretical mechanisms in model 1. None of the regression coefficients are significant and explained variance is, of course, close to zero (0.5%).<sup>14</sup>

*Model 2.* In this model we still remain on the collective level. However, we add the indicators measuring religious tradition of the different cantons. Cantons in Switzerland are traditionally either Protestant, Catholic or mixed (Protestant and Catholic). The variables used in this model are dummy-variables, the base category being “Protestant”. The regression coefficients thus show the difference of the respective category to the “Protestant”-category. The hypothesis was that cantons with a Catholic tradition would show stronger religiosity than Protestant cantons (as has been often shown in various studies on the level of countries in Western Europe). Model 2 shows that traditionally mixed (Catholic and Protestant) as well as Catholic cantons reveal more Christian religiosity than cantons with Protestant tradition. The fact that regulation does not explain anything, while religious tradition is the one important factor which explains inter-cantonal differences is shown – graphically striking – in table 4 and 5. The failure to find the regulation of supply mechanism at work despite the very strong differences in religious regulation between cantons is theoretically highly interesting.<sup>15</sup> The overall explained variance in model 2 rises to 3.6%.<sup>16</sup>

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<sup>14</sup> We calculate explained variance for both levels combined with a formula  $R\text{-Square} = ((U0+R0)-(U1+R1))/(U0+R0)$  given by Hox 2002: 68. The formula relates the given model to a “baseline model” which no variables included and which gives in our case:  $U0 = 0.03646$  and  $R0 = .96864$ .

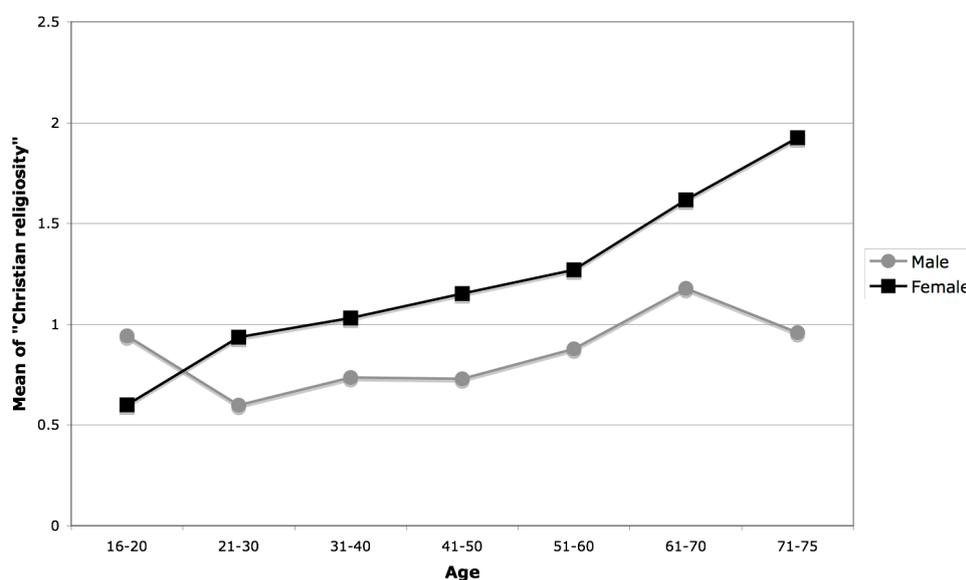
<sup>15</sup> Note that in model 2 state regulation now shows a significant (but very small) effect on Christian religiosity – but here the effect is positive, that is, it goes against the expectations of market theory.

<sup>16</sup> It is interesting to note that if we had conducted an analysis only on the collective level, we probably would have stopped the analysis here, reporting that explained variance on the collective level was .814 (.752 adj.). We would not have noticed that the variance explained on the collective level is only a relatively small part of the overall variance of Christian religiosity (namely, in this case: 3.6%).

*Model 3.* This is the first model in which both variables on the collective and the individual level are simultaneously entered. We include the indicators measuring the mechanisms "socialization", "deprivation", "regulation-demand" and "ethnicity" but still omit "control" variables. The socialization mechanism finds strong support in the data (beta = .42). The higher the religious socialization by parents, school and peers, the higher the Christian religiosity of children when they have become adults. The deprivation mechanism finds some, but not unequivocal support in the data. The structural deprivation index is significantly related to Christian religiosity: the lower an individual finds itself concerning education and income, the higher religiosity. However, the subjective indicator of deprivation – self-reported happiness – is related contrary to the prediction of the theory. In fact, the happier individuals are, the more often they are (in a Christian way) religious. At a first glance, this may be taken as evidence against deprivation theory. However, the indicator "happiness" can also be criticized. For (un-) happiness may be the cause of religiosity just as well as its effect. Thus deprived person may become religious and due to religions' compensatory power it may then see itself as particularly happy. The mechanism involving regulation of demand finds no support in this model. This is interesting, since all zero-order correlations show the predicted direction and are highly significant. On the level of zero-order correlations, individuals have a lower probability of being (in a Christian way) religious if they live in larger communities, if they live in an urban area and if the percentage of individuals without religious affiliation in their village or city is higher. It might be hypothesized that such associations are "caused" by differences of socialization and deprivation in the different (e.g. urban or rural) areas. The ethnicity mechanism is only very slightly supported by the data. In model 3 only the effect of being a "naturalized Swiss" has a (small) positive effect: Naturalized Swiss show a slightly higher Christian religiosity. Note that in model 3 the religious tradition variables on the collective level are not significant anymore. We can interpret this by saying that the "confessional tradition" works through individual level variables. Explained variance in this model rises to 23.1%

*Model 4.* In this model we enter standard control variables. As might have been expected, the regression coefficients for the socialization and deprivation indicators are reduced. Interestingly, we see a very strong interaction between gender and age. While there is little difference in religiosity between old and young men, age makes a lot of difference for women: Older women show a lot more Christian religiosity than men. This interaction is shown graphically in table 2. We also see that individuals who work part time have a slightly lower probability of Christian religiosity than individuals who are not working (base-line group). Furthermore, other Christians (e.g. Evangelicals, Orthodox) have a clearly higher probability and individuals with no official religiosity a lower probability of showing Christian religiosity. This model explains variance 34.8% of the variance of Christian religiosity.

Table 2 Christian religiosity, age and gender<sup>17</sup>



*Model 5.* This model is similar to model 4 in that indicators from all explanatory theories as well as control variables are included. The one difference is that we exclude variables for which only limited N were available. This means that we use only three variables for our religious socialization index (excluding number of years of religious education), that we use only the variable "education" in order to measure "structural deprivation" and that we exclude the variable "happiness". In this way we can run the analysis on a much larger data-set (N = 1451 instead of N= 741/733).<sup>18</sup> The findings are largely similar which gives our analysis additional support.<sup>19</sup> The explained variance is 31.8%.

<sup>17</sup> The variable Christian religiosity is standardized and has therefore mean = 0 and sd = 1. For better visibility, I added 1 to all values of this variable.

<sup>18</sup> See section 5.1. Basically, we can reach a higher N by excluding variables from the ISSP dataset.

<sup>19</sup> The two notable differences are that "structural deprivation" is not significant anymore and that "foreigner" instead of "naturalized Swiss" becomes significant.

# The Explanation of Religiosity: Testing Sociological Mechanisms Empirically

Table 2 *Multi-level multiple regression: Christian religiosity*

	Multiple multi-level regression				
	Model 1	Model 2	Model 3	Model 4	Model 5
<b>COLLECTIVE LEVEL</b>					
<b>Regulation rel. supply</b>					
State regulation	-.02	.07*	.06	.03	.04
<b>Secular culture</b>					
State expend. on culture	-.12	.02	.12	.10	.04
State expend. on educ.	-.07	-.05	.01	.01	-.03
<b>Religious tradition</b>					
Traditionally mixed		.19**	.11	.12	.11*
Traditionally catholic		.21**	.09	.14*	.09*
<b>INDIVIDUAL LEVEL</b>					
<b>Socialization</b>					
Religious socialization index			.42**	.34**	.33** <sup>20</sup>
<b>Deprivation</b>					
Structural deprivation index			.18**	.11**	.04 <sup>21</sup>
Happiness			.08*	.05	-. <sup>22</sup>
<b>Regulation rel. demand</b>					
Regulation of demand index			-.08	-.08*	-.08*
<b>Ethnicity</b>					
Naturalized Swiss			.08**	.07*	.03
Foreigner			.02	.05	.07**
French-speaking			-.01	.01	-.00
Italian-speaking			.05	.05	.03
<b>Control</b>					
Gender (woman)				-.03	-.00
Age				.10*	.07*
Gender * Age				.17*	.20**
Full time				-.06	-.04
Part time				-.09**	-.06**
Roman/Christ Catholic				-.04	-.01
Other Christian				.19**	.14**
No Religion				-.16**	-.19**
df (coll)	17	15	15	15	15
df (ind)	--	--	741	733	1451
U (coll)	.032	.003	.013	.007	.001
R (ind)	.969	.966	.761	.649	.684
ExplVar (coll.)					
ExplVar (combined) <sup>23</sup>	0.5%	3.6%	23.1%	34.8%	31.8%
BIC					
AIC					

<sup>20</sup> I use an indicator for socialization without number of years of religious education.

<sup>21</sup> I use only education and not the indicator built jointly on education and income.

<sup>22</sup> I omit the indicator for happiness.

<sup>23</sup>  $U0 = .03646$ ;  $R0 = .96864$ .

Table 3: Christian religiosity and regulation (level of cantons)<sup>24</sup>

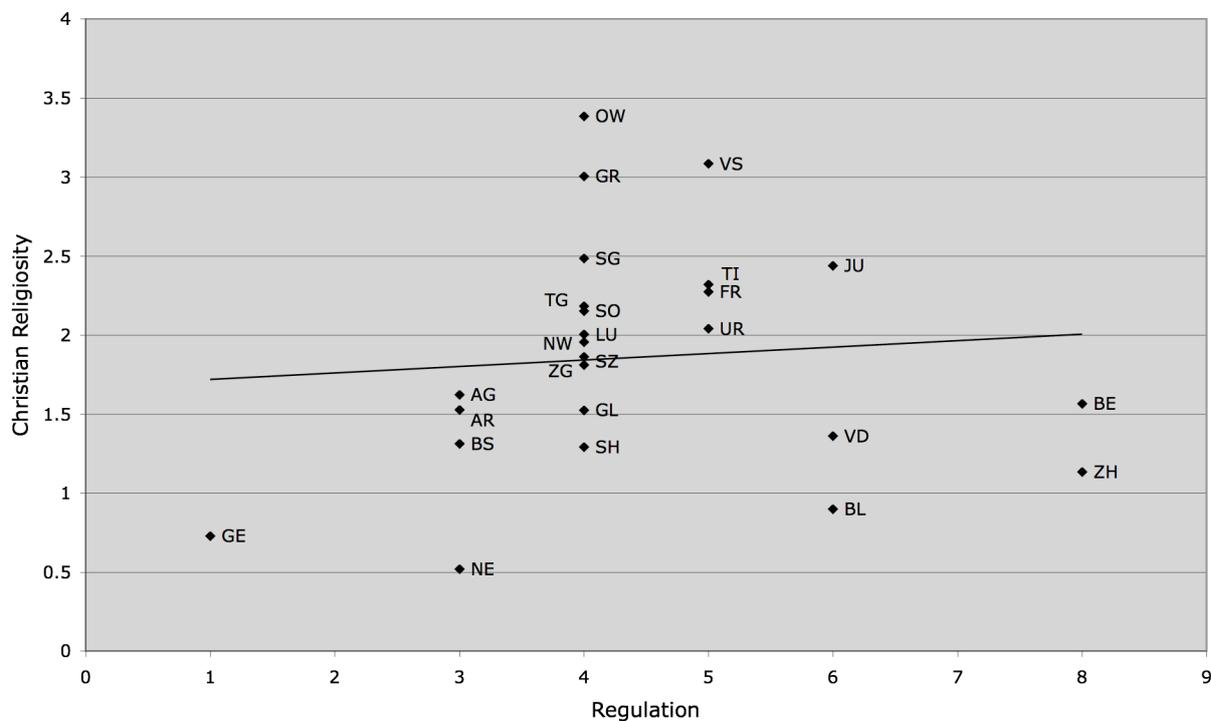
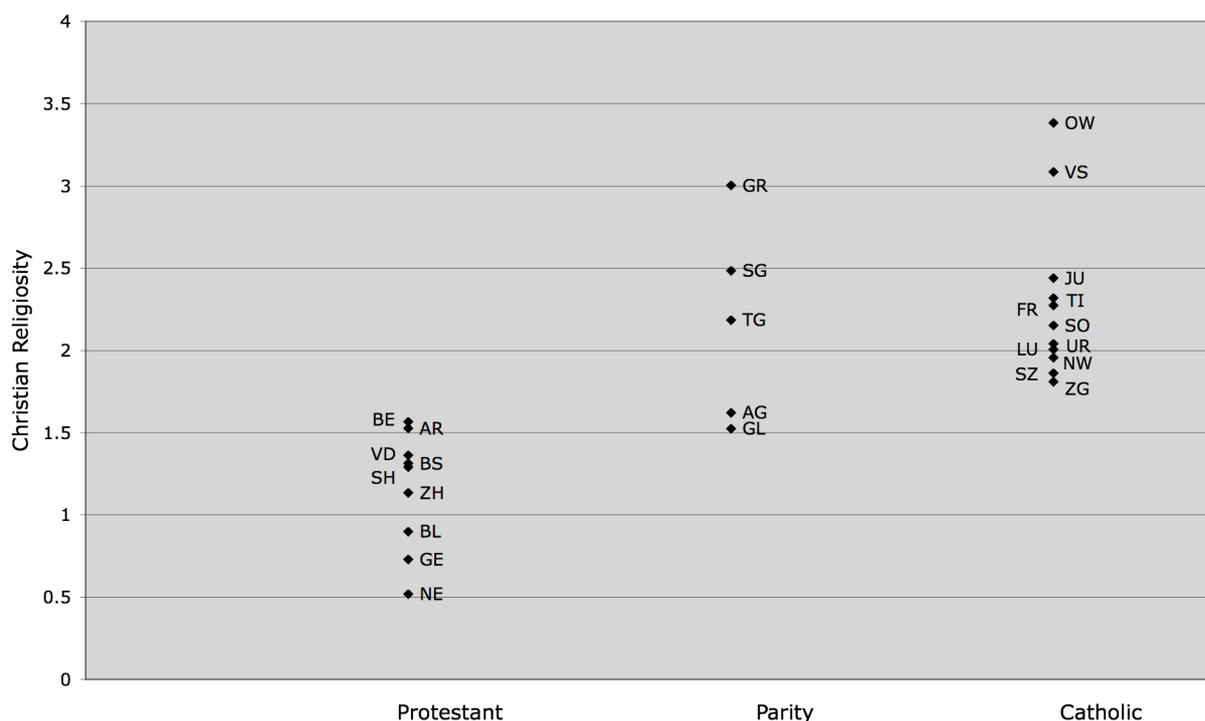


Table 4: Christian religiosity and religious tradition (level of cantons)



<sup>24</sup> I have added 2 to the standardized variable Christian religiosity for better visibility. This has no effect on the association between the variables.

## 6.2 Explaining Alternative Religiosity

We now turn to the explanation of alternative religiosity (table 3). The strategy of analysis remains similar to the procedure used above.

*Model 1* enters only the indicators measuring regulation (supply) and secular culture. State expenditure on culture has a significant effect, but it is so small that I do not think it wise to interpret it (also, it is not significant on the zero-order correlation level).

*Model 2* includes the two dummy variables measuring religious tradition of canton (Protestant tradition being the baseline category). None of the indicators in this model shows a significant effect. Note that the intercantonal variance concerning alternative religiosity is in itself very low. 1.2% of total variance is explained through "canton" and our additional variables do not explain anything of this variance. While this may seem disappointing at first sight, it is nevertheless important considering that we started out with a very strong theory – the market theory. This theory predicted that the major explanatory factor should be religious regulation which varies tremendously among Swiss cantons. It predicts that alternative religiosity should be much stronger in cantons with less regulation. This is clearly not the case for Switzerland.

*Model 3* enters the indicators for socialization, deprivation, regulation (demand) and ethnicity. Only two indicators show significant effects. First, the structural deprivation index has a significant effect: individuals with higher levels of structural deprivation (lower levels of education and income) show higher levels of alternative religiosity. Second, French speaking individuals seem to show a little less alternative religiosity than German speaking individuals (the base-line category). Explained variance rises to 6.3% in this model.

*Model 4* adds the control variables. The most important effect is related to the gender variable: Women show much more alternative religiosity than men. Again, we find an interaction between age and gender: Younger women find alternative religiosity to be significantly more interesting than older women, while the effect is not significant for men. Furthermore, we find that Roman Catholics have a slightly higher and Other Christians a slightly lower probability to be alternatively religious. In this model we are able to explain 13.2% of alternative religiosity.

*Model 5* again drops several variables, thus allowing us to raise the N (from 651 to 986).<sup>25</sup> Again, the substantive conclusions are very similar to those from model 5 (the one exception being that the age variable now becomes significant). Explained variance is at 11.9% in this model.

All in all, explained variance is much lower for alternative religiosity than for Christian religiosity. This may be due to mainly two factors. First, alternative religiosity might be more reliably measured by using more and better items which might lead to higher explained variance. Second, additional explanatory variables might have forced up explained variance. Note, specifically, that religious socialization (the most important predictor of

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<sup>25</sup> See footnote 19.

Christian religiosity) is only geared to Christian, but not alternative religious socialization.

**Table 6** *Multi-level multiple regression: alternative religiosity*

	Model 1	Model 2	Multiple multi-level regression		Model 5
			Model 3	Model 4	
<b>COLLECTIVE LEVEL</b>					
<b>Regulation rel. supply</b>					
State regulation	-.012	.001	-.005	.016	-.009
<b>Secular culture</b>					
State expend. on culture	-.066*	-.052	-.006	-.004	-.054
State expend. on educ.	.081	.060	-.019	-.010	.043
<b>Religious tradition</b>					
Traditionally mixed		.052	.080	.061	.016
Traditionally catholic		-.008	.058	.007	-.061
<b>INDIVIDUAL LEVEL</b>					
<b>Socialization</b>					
Religious socialization index			-.071	-.070	-.073*
<b>Deprivation</b>					
Structural deprivation index			-.171**	-.168**	-.151**
Happiness			-.039	-.032	.-.
<b>Regulation rel. demand</b>					
Regulation of demand index			.023	.024	.017
<b>Ethnicity</b>					
Naturalized Swiss			-.056	-.052	-.045
Foreigner			-.050	-.054	-.085
French-speaking			-.056*	-.079	-.072
Italian-speaking			-.032	-.063	-.020
<b>Control</b>					
Gender (woman)				.298**	.275**
Age				-.098	-.122**
Gender * Age				-.186**	-.161**
Full time				.076	.093
Part time				.044	.068
Roman/Christ Catholic				.102*	.108**
Other Christian				-.084*	-.096**
No Religion				-.030	-.030
df (coll)	17	15	15	15	15
df (ind)	--	--	669	661	986
U (coll)	.00507	.00923	.00063	.00023	.00813
R (ind)	.99145	.99025	.93999	.87102	.87624
ExplVar (combined) <sup>26</sup>	0.7%	0.4%	6.3%	13.2%	11.9%

<sup>26</sup> U0 = .01174 ; R0 = .99179.

## 7. Summary and discussion

This study has tried to make both a substantive and methodological contribution by presenting the first comprehensive application of a new unified theoretical framework for the explanation of religiosity to a special, namely the Swiss, case. This new framework postulates seven distinct "generative mechanisms" that "produce" religiosity and are all integrated on a common "rational action" basis. Such a theoretical integration has several advantages. It provides researchers with a guide to possible causal mechanisms in a given socio-historical setting, it renders the mechanisms explanatory and operationalizable, cleanses them from unnecessary theoretical assumptions and leads to more systematic empirical research. When applying the framework, I have used multi-level multiple regression models in order to explain Christian and alternative religiosity in Switzerland. Since I started with strong theory and clear hypotheses, the results are interesting even when we do *not* find significant relationships. Table 1 summarizes the findings by comparing our predictions to the findings.

*Substantively*, the study throws new light on the case of Switzerland. Put succinctly, we see that, in Switzerland, *Christian religiosity* could be best explained by religious socialization mechanisms. Individuals had a much higher probability of showing Christian religiosity if they had been strongly socialized by their parents, if they came from a mono-religious household and if they had Christian peer-socialization. Deprivation, social control, religious tradition of the canton as well as gender and age also played a certain role. Individuals with less education and income, living in smaller and rural communities and in traditionally Catholic (or mixed) cantons had a higher likelihood of showing Christian religiosity. The latter finding is very similar to that by Norris/Inglehart (2004) who were also able to show that religious culture was important on a collective (national) level. Furthermore, the study shows that especially older women had a much higher probability than younger women to be religious, while age was much less important for men. The mechanisms linked to state regulation, ethnicity or the secular culture of the canton had no explanatory power in our specific case. Although the Swiss cantons show tremendous differences in regulation (going from almost complete separation to the churches as state agencies), state regulation did not explain any variation of Christian religiosity. These findings are additional evidence for the view that regulation mechanism are not of primary importance for the explanation of religiosity at least in western democracies (Chaves/Gorski 2001). The predictions by the secular culture mechanism did not fare any better. This mechanism supposes that the production of secular leisure opportunities, secular media and modern science may "crowd out" religious products and interpretations. Again, the indicators used did not explain any variance of Christian religiosity. It is probable that Swiss Cantons are uniformly on a rather high level of secular production of culture and that remaining variance is not able to influence religiosity. On the other hand, we have to acknowledge that operationalization of secular culture is not entirely satisfactory and could be

much improved in future research. With a maximum of explanatory variables I was able to explain 36% of the Variance of Christian religiosity (Model 4). *Alternative religiosity* could be explained to a lesser extent than Christian religiosity. The most important mechanisms were linked to deprivation, gender and age. Individuals with lower education and lower income as well as women and younger individuals had a higher probability of being alternatively religious. All in all, it seems as if alternative religiosity is especially important for individuals searching for "empowerment" in the face of deprivation and/or social barriers and obstacles. Somewhat similar findings are reported by Houtman/Mascini 2002<sup>27</sup> and Mears/Ellison (2000). All other mechanisms (regulation of supply, secular culture, religious tradition, socialization, regulation of demand, ethnicity) had no substantial explanatory value for alternative religiosity. As was the case for Christian religiosity, the "market mechanisms" did not have any effect on alternative religiosity in our specific case. We did not find more alternative religiosity where regulation was lower; nor was alternative religiosity stronger where Christian religiosity was waning. The model including most of the explanatory variables explains 13.2% of the variance (model 4). Since previous accounts concerning the Swiss case (e.g. the contributions in Campiche/Dubach 1992) did not use the systematic approach advocated here (using a list of possible causal mechanisms and two clearly distinguishable religiosities), they have overlooked both the central part played by socialization for Christian religiosity and of deprivation for alternative religiosity.

As has been mentioned above, the present approach does not suppose that the postulated mechanisms have to be present everywhere. In fact, in Switzerland, the market-, culture- or ethnicity mechanisms do *not* seem to operate - even though they may be extremely important in other socio-historical contexts. This leads us to the question of *why* this is the case. In principle, we would now have to explain due to what "initial conditions" certain mechanisms are operable or not in a given context. I have tried to do this above, although these explanations have had to remain "post hoc". In the future, comparative research will have to try to include variables which explain the presence or absence of certain mechanisms in given countries *in the model itself*.

Concerning *methods*, this article has tried to make advances in two respects. First, not just one but two types of religiosity have been operationalized and "explained": Christian and alternative religiosity.<sup>28</sup> A lot of the literature looks only at one type of religiosity - mostly Christian, often operationalized by frequency of church-attendance and / or strength of belief in god or self-description as being more or less "religious" (e.g. Norris/Inglehart 2004, Iannaccone 1991). As this contribution shows, however, alternative religiosity is in our case not correlated to Christian

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<sup>27</sup> Although these authors also introduce a highly debatable "causal explanation" through "individualization".

<sup>28</sup> Of course, other types of religiosity exist and might be included. It seems, however, that we have here two important types which can be reasonably well established in the data and which have led to a considerable body of literature.

religiosity or to the importance one attributes to "religion" in general (see Appendix, table A1). Furthermore, the structure of the generative mechanisms are very different for alternative religiosity than for Christian religiosity. Second, we have used a multi-level model in order to investigate the various generative mechanisms which may "take effect" on different levels of social reality. The literature so far has mostly just looked at either the individual level or the collective level (mostly: at nations), neglecting other levels. As is well known in the methodological literature, such procedures are in danger of producing artefacts (e.g. ecological or atomist fallacy). For example, if we looked in our study only at the collective level and inferred from there directly to the individuals, we would be inclined to say that religious culture is the one important factor explaining individual religiosity in Switzerland. When looking at the individual level, however, we note that other factors, such as socialization, are much more important.

While the proposed application of the unified theoretical framework certainly has its limits concerning operationalization and generalizability<sup>29</sup>, I hope, nevertheless, to have been able to show the basic strength of my approach: The proposed unified framework produces testable hypotheses and its different parts can be verified or falsified for different types of religiosities and in different socio-historical contexts. Theory and empirical research are thus brought in a closer relationship than before. If this proposal will be used in future cross-national comparative research, a strongly improved state of of the art may be expected.

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<sup>29</sup> *In some instances, operationalizations could have been more fortunate (especially concerning secular culture, regulation of demand and alternative religiosity). In some cases, critics may argue that our indicators are not as tightly linked to our theoretical concepts as one might want them to be and that they may well be compatible with other theories. Finally, we have used a cross-sectional design and survey data, leading to all the problems of "causal inference" often described in the literature.*

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## Appendix

*Table A1* Factor Analysis for two types of religiosity

	Factor 1 Christian Religiosity	Factor 2 Alternative Religiosity
Importance religion	<b>.829</b>	.037
Frequency prayer	<b>.716</b>	.111
Frequency rel. service	<b>.662</b>	.055
God & Jesus	<b>.652</b>	-.211
Belief Astrology	.035	<b>.632</b>
Belief luck charms	-.048	<b>.627</b>
Belief fortune tellers	-.040	<b>.567</b>
Belief in reincarnation	.033	<b>.516</b>

Principal Axis Factoring, Rotation = Oblimin; Factor correlation  $r = -.007$ . The factor analysis was also carried out on the polychoral correlations (instead of the Pearson Correlations) and yielded essentially similar results. This analysis was carried out in R.

**Table A2**     *Zero-order correlations: Christian and alternative religiosity*

	Christian religiosity	Alternative religiosity
<b>COLLECTIVE LEVEL</b>		
<b>Regulation - supply</b>		
State regulation	.119	-.106
<b>Secular culture</b>		
State expend. on culture	-.357	-.386
State expend. on educ.	-.144	.417
<b>Religious tradition</b>		
Traditionally mixed	.353	.430
Traditionally catholic	.558**	-.234
<b>INDIVIDUAL LEVEL</b>		
<b>Socialization</b>		
Frequ. rel.service parents	.381**	-.067*
Parents mono-religious	.169**	-.035
Religious youth group	.222**	-.073
Years' rel. education	.184**	-.012
<b>Deprivation</b>		
Education	-.146**	-.158**
Household income	-.119**	-.154**
Class-membership	-.073*	-.049
Happiness	.078**	-.031
<b>Regulation - demand</b>		
Community size	-.134**	.014
urban/rural	.108**	.039
% of non-religious	-.199**	-.043
<b>Ethnicity</b>		
Naturalized Swiss	.031	-.040
Foreigner	.067**	-.041
French-speaking	-.067**	-.082**
Italian-speaking	.082**	-.019
<b>Control</b>		
Gender (woman)	.178**	.167**
Age	.200**	-.214**
Full time	-.136**	-.028
Part time	-.018	.077*
Roman/Christ Catholic	.205**	.078*
Other Christian	.171**	-.108**
No Religion	-.291**	-.026

## The Explanation of Religiosity: Testing Sociological Mechanisms Empirically

Prof. Dr Jörg Stolz  
Observatoire des Religions en Suisse  
Bâtiment Vidy  
CH - 1015 Lausanne  
Tel.: 0041 (0)21 692 27 02  
Fax : 0041 (0)21 692 27 26  
e-mail: joerg.stolz@unil.ch