Will strong democracy make you happy?
Direct democracy and individual satisfaction in Switzerland

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This paper takes the influential "direct democracy makes happy"-research as a starting point and asks whether direct democracy impacts individual satisfaction. Unlike former studies we distinguish two aspects of individual satisfaction, namely satisfaction with life ("happiness") and with how democracy works. Based on multilevel analysis of the 26 Swiss cantons we show that already the theoretical assumption on which the happiness hypothesis is based has to be questioned, as there is no evidence for a very close relationship between satisfaction with democracy and life satisfaction or even for causality between them. Furthermore, we do not find a substantive positive effect of direct democracy on happiness. However, with respect to satisfaction with democracy our analysis suggests some evidence for a procedural direct democracy effect, even though it is not a very robust one.

Introduction

In recent years much scholarly attention has been devoted to possible positive effects of popular rights on citizens' behaviour and attitudes. While, on the one hand, most research has focused on direct democracy's "educative effects" in terms of increased political information, knowledge, and interest, and thus on the functioning of democracy (Benz and Stutzer 2004; Bowler and Donovan 2002; Hero and Tolbert 2004; Lassen 2005; Mendelsohn and Cutler 2000; Smith 2002; Smith and Tolbert 2004; Tolbert et al. 2003, Tolbert and Bowen 2008), the influential "direct democracy makes happy" research initiated by Frey and Stutzer (2000a, 2000b, 2000c) and Frey et al. (2001) stresses an even broader positive effect of direct democracy, namely on a society's general well-being.

It is here that this article finds its starting point asking whether direct democracy effectively, and directly increases citizens' satisfaction with life as suggested by Frey and Stutzer (2000a, 2000b, 2000c) and Frey et al. (2001).[i] We argue that the happiness hypothesis at its heart emanates from the assumption that enhanced satisfaction with how democracy works due to direct democratic involvement automatically increases overall happiness. But as this is a rather strong assumption it needs some clarification and empirical testing. The present article therefore addresses the following questions: Does the theoretical fundament of Frey and Stutzer's happiness hypothesis, which is based on a close link between satisfaction with democracy and general well-being, indeed hold? And, does direct democracy influence happiness with one's life or rather satisfaction with the political system in which an individual lives? In so doing the present article goes beyond former research in four respects:

First, the theoretical argument proposed by Frey and Stutzer (2000a, 2000b) as well as by their challengers (Dorn et al. 2008) is – even though the authors do not acknowledge this fact – always an indirect one, actually building on the positive effect of popular rights on citizen's satisfaction with how democracy works. In this vein, Frey and Stutzer (2000a: 921) in their analysis of the Swiss sub-national units – the cantons – provide the following arguments to back up their happiness hypothesis:

> *„Firstly, due to the more active role of the citizens, (professional) politicians are better monitored and controlled. Government activity, i.e. public outlays as well as the many*

> *other decisions by the government, are closer to the wishes of the citizenry. As a consequence, satisfaction with government output is reflected in a higher level of overall well-being. Secondly, the institutions of direct democracy extend the citizens' possibilities to get involved in the political process. Experimental evidence (…) suggests that this procedural effect is independent of the outcome of the political activity itself."*

While the authors heavily rely on *satisfaction with democracy* in their theoretical argument, they fail to include this crucial aspect into their empirical model. We argue that, given the theoretical underpinning, satisfaction with democracy must explicitly be integrated into the model when analysing the relationship between direct democracy and general well-being. We therefore assume that satisfaction with life and with democracy are related to each other, but still form distinct aspects of overall satisfaction.

Second, we use a more elaborate operationalization of direct democracy which better suits the theoretical reasoning. Frey and Stutzer (2000a) conclude that the procedural effect of direct democracy on happiness is most important: People become happier if and because they can and do participate in direct democracy. While Frey and Stutzer (2000a) investigate this aspect by comparing citizens of Swiss and foreign nationality, we account for the procedural aspect of direct democracy by distinguishing direct democratic rights (rules-in-form) and their actual use (rules-in-use). If the relationship between direct democracy and individual happiness is indeed procedural in nature, the latter variable measuring the actual frequency of ballot measures in a canton should be the stronger factor in the model.

Third, we employ multilevel analysis and thus a more suitable method given the data at hand. When modelling the influence of direct democracy, which is a cantonal feature, on individual happiness we face a hierarchical data structure meaning that the individual level observations are not independent from each other but nested within contexts. Frey and Stutzer (2000a, 2000b) perceive this "clustering" of the data as a nuisance which is corrected for by calculating robust standard errors. Dorn et al. (2008: 233) apply an „unweighted random-effects ordered probit model", which does not even allow for clustering at the contextual level. This is highly problematic, as contextual effects are typically overestimated when the hierarchical data structure

is not accounted for. Methodologically, this paper therefore provides a more accurate research design for the estimation of direct democracy effects on individual happiness.

Fourth and finally, our analyses are based on new and more differentiated data. We use data from the Swiss Volunteering Survey 2006 that allows distinguishing between different aspects of satisfaction, namely life satisfaction and satisfaction with how democracy works.

Following the analyses by Frey and Stutzer (2000a, 2000b, 2000c), Frey et al. (2001) and Dorn et al. (2008) the units of investigations are the 26 Swiss sub-national units, the cantons. The Swiss cantons indeed offer an excellent opportunity to assess the influence of direct democracy on individual satisfaction; these sub-national units exhibit considerable differences in the formal legal access to as well as in the use of popular rights. Some cantons – mainly in the German speaking regions – have very extensive direct-democratic procedures, while others – typically the French and Italian speaking cantons – are more strongly oriented towards the type of representative democracy with a restricted access to direct democratic instruments (Feld and Savioz 1997: 511; Freitag and Vatter 2000; Ladner 1991; Linder 2005: 272; Vatter 2002, Vatter and Freitag 2007).

The paper is arranged as follows: To begin, the theoretical considerations and hypotheses regarding the relationship between direct democracy, satisfaction with democracy, and life satisfaction will be discussed. Next, we introduce the research design, the method, and the variables. In section 4, the hypotheses will be subjected to the scrutiny of systematic statistical evaluation, based on a quantitative comparison of the federal states of Switzerland – the cantons. This article will then conclude with a brief discussion of the findings.

Theory, former research, critique and main hypothesis

Already Jean-Jacques Rousseau in his „Contrat social“ (1762) considered the Swiss the happiest nation in the world since it had the strongest forms of direct democratic participation at its disposal and was therefore able to take its political fate into its own hands: *“When we see among the happiest people in the world bands of peasants regulating the affairs of state under an oak tree, and always acting wisely, can we help feeling a certain contempt for the refinements of*

other nations, which employ so much skill and effort to make themselves at once illustrious and wretched?" (Of the Social Contract, Book IV, Chapter 1).

More than two hundred years later, Benjamin Barber (1984) in his influential work „Strong Democracy" argued in a quite similar way and suggested that that direct democratic participation would engage citizens and lead them to have a more positive perception of democracy. Obviously, it is an argument clearly in keeping with a long-held tradition from classical democratic theory that citizen participation is not just of value in and of itself, but it also promotes civic engagement and more positive attitudes towards the political system and democratic processes.

Indeed, there are several arguments and earlier findings which support the hypothesis that direct democratic institutions can be expected to raise citizens' subjective well being and their satisfaction with how democracy works. First, according to the institutional economics literature, direct democracy is an effective instrument to discourage rent-seeking among public decision-makers and to solve the principal-agent problem (Frey 1994). In this view, governments in modern democracies pursue their own objectives rather than those of the majority of the electorate. As a consequence, the actions of the agent (the government) need not correspond to the interests of the principal (the majority of the governed), on behalf of whom the agent ought to act. In representative democracies, the principal-agent problem is solved by periodically recurring elections, which prevent interests from diverging over a long period of time. In political systems with direct democratic elements, there are further instruments of popular control in addition to elections, namely referendums and initiatives which help to reduce the principal-agent problem. Feld and Savioz (1997: 515), for example, argue that

> *"if elements of direct democratic decision making ceteris paribus reduce the principal agent problem compared with representative democracy without inducing a lower level of information of the decision makers and if it enhances competition in a society with political collusion, then the efficiency of government activities should be higher in direct than in representative democracies"*.

Popular votes, thus, reduce the discretion of political decision-makers in the period between elections and help to break self-interest oriented political cartels (Frey 1994: 340ff.). As a

consequence of the more direct participation rights of the people, politicians are better controlled and monitored than in representative systems and forced to follow the preferences of the median voter. Consequently, governmental decisions and policy outputs are closer to the interests of the citizens, and this should result in *higher satisfaction with government and democracy*.

Second, the institutions of direct democracy extend the citizens' opportunities to get involved in the political process. Experimental evidence (e.g. Bohnet and Frey 1999, Tyler 1990) shows that this procedural effect is independent of the governmental outcome itself. Both the opportunity to participate, as well as the act of participation in policy decisions, can be expected to promote more positive views about democracy (Bowler and Donovan 2002). This suggests that procedural utility of direct participation in politics, in addition to its outcome utility, is an important source of *satisfaction with democracy*. In fact, the utility gained from participation and procedural fairness was found to be even larger than the utility gained from a democratic political outcome (Stutzer and Frey 2003).

Third, in a series of influential empirical studies, Frey and Stutzer (2000a, 2000b, 2000c) and Frey et al. (2001) confirm the positive effect of direct democracy on people's satisfaction at the sub-national level in Switzerland. The authors used survey data in which individuals reported their "subjective well-being", called "happiness" for short. They consistently found that people living in Swiss cantons reported significant higher levels of *"happiness"* when there was easier access to direct democratic institutions.[ii]

We take this latter branch of research as our starting point arguing that Frey and Stutzer in their theoretical reasoning actually heavily rely on the concept of satisfaction with democracy and its relationship to direct democracy, as presented above, but then focus on a quite different aspect of satisfaction, *i.e.* happiness. Put differently, they do not explicate the implicit second part of their happiness hypothesis, namely why satisfaction with democracy makes people happy. Even though satisfaction with democracy lies at the core of their theoretical argument, they fail to include this crucial aspect into their empirical model. Therefore, we argue that satisfaction with democracy must explicitly be integrated into the analysis – both theoretically and empirically – when investigating the relationship between direct democracy and general well-being.

Also in another aspect our theoretical argument goes beyond the existing literature: Referring to Frey and Stutzer (2000) that the higher level of happiness associated with more extensive democracy is partly due to the utility produced by the *political process itself*, we account for the procedural aspect of direct democracy by distinguishing direct democratic rights and their effective use. While Frey and Stutzer (2000a) investigate this aspect by comparing citizens of Swiss and foreign nationality but thereby neglecting that usually more than 50 % of the Swiss voters do not go to the ballot, we account for the procedural aspect of direct democracy by distinguishing direct democratic rights and their actual use. In line with the distinction between 'rules in form' and 'rules in use' made by new concepts of the comparative study of democracy (Rothstein 1996: 146), we differentiate between the formal availability of the instruments of direct democracy and the frequency of their actual use in practice. In this vein, the existence of formal rights of direct citizen participation (rules in form) does not necessarily mean these rights will actually be exercised (rules in use) (Vatter 2002). For example, the number of ballot initiatives in the period 1990 to 2005 is highest in the cantons of Zurich, Basle City, and Geneva, even though the formal conditions to launch a popular initiative are more favorable in other cantons like Aargau, Basle Country, and Nidwalden. In sum, not formal citizen' rights alone should lead to political results that are more likely to be acceptable to a large majority of the population, but citizens' satisfaction with democracy may arise from their actual participation in the political decision-making process and from the perceived extent of the procedural fairness of this process. The main reason for this is that ballot votes produce the conditions for a discursive process (Habermas 1992, Steiner et al. 2004) which is – unlike most other democratic processes – open to the whole population, and which ends in a clear and well-defined act of decision.

Given the above arguments, our main *hypothesis* is a *refined version of the happiness-hypothesis* (Frey and Stutzer 2000a, 2000b, 2000c; Frey et al. (2001) and consists of two parts, which both must be put to an empirical test:

a) *The more intense the actual use of direct democratic instruments, the higher will be citizen satisfaction with democracy.*

b) *The higher citizen satisfaction with democracy, the more satisfied people are with their lives.*

We thus assume that the actual use of democratic rights (and less their formal availability) influences satisfaction with democracy, which in turn has a positive impact on citizens' overall satisfaction with life. Therefore, we do not postulate a direct effect of direct democracy on general well-being, but rather and if at all an indirect effect via satisfaction with democracy.

Research design, method, data and variables

Following the discussion above we consider both satisfaction with democracy and life satisfaction for our empirical model and simultaneously estimate how direct democracy (and other controlling variables at the individual and contextual level) impact on these aspects of satisfaction (Figure 1).

--- Figure 1 about here ---

The advantage of this design, in which the two aspects of individual satisfaction are analysed in a multivariate multilevel statistical framework, is that the „covariance" between the two variables on the individual and contextual level can be calculated. Not only can distinct variance terms be estimated summarising the degree to which the two types of satisfaction vary between cantons, but we can also calculate a „joint covariance" in order to assess how the two variables covary across the cantons (Subramanian et al. 2005: 667). Moreover, we can implement a path model in which satisfaction with democracy builds an explanatory factor into the model of life satisfaction.[iii] If the theoretical assumptions of the happiness hypothesis holds, we would expect to find either such a uni-directional and strong path from satisfaction with democracy on life satisfaction or – alternatively – a very high (almost perfect) correlation between the two aspects of satisfaction meaning that they could be perceived as nearly identical indicators of individual satisfaction.We apply a Bayesian estimation approach, which as been shown to be an appropriate method, particularly when employing multilevel models with a small number of level 2 units.

The analyses are based on both the data of the Swiss Volunteering Survey 2006 and information from the Comparative Cantonal Data Set (CCDS). We have two dependent variables, namely life satisfaction, which corresponds to Frey and Stutzer's (2000a, 2000b, 2000c) conception of happiness, as well as satisfaction with democracy (see Appendix). In order to measure direct

democracy, the institutional design of direct democratic instruments (rules-in-form) as well as their use (rules-in-use) is integrated into the analysis. The former aspect corresponds to the variable used by Frey and Stutzer (2000a, 2000b, 2000c), Frey et al. (2001) and Dorn et al. (2008). This *index of direct democratic rights* in the Swiss cantons is constructed to measure the barriers citizens encounter when entering the political process. The barriers are in terms of the necessary signatures required to launch a ballot measure (absolute and relative to the number of citizens with the right to vote), the legally allowed timeframe in which to collect the signatures, and the level of new expenditures per capita allowing a financial referendum. Each of these restrictions is evaluated on a six-point scale: 1 indicates a high barrier (*i.e*., it is more difficult to get a ballot measure on the ballot) and 6 a low one (*i.e*., it is quite easy to get ballot measures on the ballot). To operationalize the rules-in-use we use the average number of *yearly cantonal ballot measures* between 2000 und 2004.

In addition to our central explanatory variable, a series of potential relevant factors from the macro and micro-levels should be considered as control variables. In the choice of these variables we rely on the studies by Frey and Stutzer (2000a, 2000b, 2000c), Frey et al. (2001) and Dorn et al. (2008). On the individual level we integrate the demographic variables age (in years and age squared), gender (male/female), citizenship (foreigner/Swiss nationality), level of education (low, medium, high), family situation (married/cohabiting vs. single as well as whether a person has children or not), and employment status. Moreover, economic indicators such as household income and whether an individual is unemployment are incorporated. On the contextual level the most important controlling variables include linguistic-cultural background and the economic and fiscal situation in a canton (Dorn et al. 20008, Frey and Stutzer 2000a, 2000b).[iv] Moreover and following Dorn et al. (2008) we also include religious traditions. We use the values of the contextual factors measured prior to each cantonal election to assure that the potential cause precedes the effect. [v]

Empirical results

In this section, a three-stage procedure will be presented to examine the relationship between direct democracy and satisfaction with democracy and life. In the first analytical step, we make

use of random intercept models that only include individual variables in order to investigate how the two dependent variables relate to each other and whether they are determined by similar or different mechanisms at the individual level (Table 1). In the second step, the direct democracy variables will be added to expand the model (Table 2). Finally, in a third step, the robustness of the estimation will be tested by including further controlling variables, the linguistic background among them, at the cantonal level (Table 4).

Table 1 presents the individual level models. In Model 1 the identical individual covariates are used to explain satisfaction with democracy and life simultaneously. The separate coefficients for each of the dependent variables clearly demonstrate that satisfaction with democracy and life are subject to different mechanisms at the individual level. Only three variables impact happiness and satisfaction with democracy in the same way: Lower education is accompanied with lower satisfaction both with one's life and with how democracy works. Moreover, while satisfaction first decreases and then increases with age, having children does not influence satisfaction with democracy or life.

For all other variables different effects on the two aspects of satisfaction can be found: Men evaluate the functioning of democracy better than women, while the contrary is true regarding life satisfaction. Married or cohabiting individuals are more satisfied with both how democracy works and life, but the effect on the latter variable is significantly stronger. A similar pattern can be observed regarding unemployment: Unemployed persons are less happy with life and democracy, but happiness in particular is negatively affected by unemployment. Belonging to a denominational group increases satisfaction with democracy, the credible interval for this variable however includes zero regarding happiness. Moreover, high political interest more strongly enhances satisfaction with democracy than with life.

--- Table 1 about here ---

Finally, we find again opposing relationships between citizenship and satisfaction: While foreigners are more satisfied with the way democracy works in Switzerland than Swiss citizens,

they tend to be less happy with their lives. This finding is of particular interest if contrasted with the results by Frey and Stutzer (2000a, 2000b, 2000c) and Frey et al. (2001). The authors argue that foreigners do not become happier in a direct democratic context, since they are not integrated into the political process and will therefore not be able to profit from direct democracy's procedural effects. Given our findings, whereby foreigners are indeed less satisfied with life, but in fact more satisfied with democracy, their conclusion must be questioned. We rather have to conclude that foreigners – due to their non-inclusion – have a less differentiated, and thus probably a more stylized, positive view of how democracy in Switzerland works.[vi]

What also follows from Model 1 is that the covariance between life satisfaction and satisfaction with democracy is positive and significant at the individual level, meaning that individuals who are satisfied with democracy also tend to be happier. Still, the correlation is quite limited amounting to only 0.09. In contrast, the covariance between cantons does include zero meaning, which implies that cantons with high mean satisfaction with democracy do not exhibit a substantially higher average happiness. From these findings we can conclude that there is some relation between satisfaction with democracy and with life, but the two concepts can definitely not be seen as basically the same thing.

In model 2, satisfactions with democracy and with life are modelled in a path model, suggesting that the two indicators are not just correlated with each other, but that the former influences the latter. It can be seen from the model that satisfaction with democracy contributes to a higher overall well-being. The inclusion of this path in the structural model, however, does not significantly improve the model, which can be seen from the fact that the deviance is only marginally reduced. In further estimations not presented here, we additionally find that the opposite path, leading from life satisfaction to satisfaction with democracy, is not smaller than the one shown in model 2. Overall, we therefore conclude that satisfaction with democracy and happiness must indeed be seen as two (somewhat) reciprocal concepts, but that we cannot speak of causality between them. From this first step of analysis the following conclusions can be drawn: First, it is reasonable to perceive happiness and satisfaction with democracy as two correlated phenomena, *i.e.* two aspects of a broader concept of individual satisfaction. In contrast, there is no evidence for a very close relationship or even causality between them. The theoretical assumption on which the happiness hypothesis is based is therefore weak.

Second, when testing the happiness hypothesis it is crucial to apply a bivariate response model. Given the significant covariance between satisfaction with democracy and with ones own life a single response model that neglects the former would possibly lead to biased results regarding the latter: If direct democracy is related to satisfaction with democracy, but not to happiness – as suggested in our hypotheses –, ignoring satisfaction with democracy may overestimate the direct democratic effect due to the correlation between satisfaction with democracy and with life.

Next, we proceed by integrating the central cantonal characteristics into the model, namely direct democracy. More precisely, we want to simultaneously test whether the direct democratic context indeed influences satisfaction with life or whether the effects found in earlier studies were only due to the correlation between happiness and satisfaction with democracy. In so doing, we distinguish between direct democratic rights (rules-in-form) and the actual use of direct democracy (rules-in-use). Table 2 demonstrates that the rules-in-form positively influence both life satisfaction and satisfaction with democracy, whereby the 95% credible interval in the latter case however just includes zero. Moreover, when measuring direct democracy by means of the actual use of direct democratic rights, thus taking into account the procedural aspects, we find a positive effect on satisfaction with democracy only, but not regarding overall well-being. Even without the inclusion of linguistic culture, which proved to be the "elk test" for the direct democracy variable in the Dorn et al. (2008) study, the simultaneous modelling of both satisfactions with democracy and life satisfaction leads to ambiguous direct democracy effects.

--- Table 2 about here ---

We think that these results provide support for the theoretical argument that direct democracy – if at all – impacts satisfaction with democracy but not life satisfaction. This conclusion needs some explanation with reference to the two direct democracy indicators. As Figure 2 initially shows, rules-in-use and rules-in-form are only little correlated (left plot). Cantons with easy access to direct democratic instruments tend to exhibit a more intense use of these instruments, but the correlation is not substantially different from zero (Correlation = 0.29 [95% Confidence interval:

-0.11- 0.61]). Second, while the rules-in-form variable is highly correlated with linguistic culture (middle plot: 0.82 [0.63-0.92]), this is much less the case regarding rules-in-use (right plot, 0.19 [-0.21-0.54]). This means that while the effect of direct democratic rights on individual satisfaction may be strongly influenced by the inclusion of linguistic culture due to multicollinearity (or in other words is subject to an omitted variable bias in Table 2), this should be less so with regards to the use of direct legislation.

--- Figure 2 about here ---

In the last step and following Frey and Stutzer (2000a, 2000b, 2000c) as well as Dorn et al. (2008) we therefore further integrate linguistic culture, religious culture and economic performance into the models. We estimated a series of models including different combinations of these variables. As the choice of variables obviously influences the marginal effects of direct democracy, the posterior means and standard deviations for the direct democracy indicators are shown for each model (Table 3).

Table 3 demonstrates that our findings with regards to the relationship between direct democracy and happiness are now even more conservative than those presented by Dorn et al. (2008). In none of the 12 models do we find a substantive and positive effect of direct democracy on happiness. If we consider the direct democratic process – which according to Frey and Stutzer (2000a, 2000b) is central to the happiness hypothesis – the mean effect is even slightly negative.[vii]

--- Table 3 about here ---

Concerning satisfaction with democracy the mean effect of direct democracy is – not surprisingly – also weakened when including the controlling variables. This is particularly the case when direct democracy is operationalized in terms of rules-in-form. Still, even if linguistic culture is controlled for, the credible interval of direct democracy does not include zero in two out of the 12

models – or in two out of six models regarding the rules-in-use. We find at least some support for the hypothesis that *the use* of direct democracy increases satisfaction with democracy. This effect is not negligible: A change from 1 to 12 ballot measures per year, which corresponds to the variance observed among the Swiss cantons, increases the average evaluation of the political process by roughly 0.4 (if linguistic culture is measured by means of a regional dummy) and 0.5 (when the linguistic composition of the population is accounted for) respectively. This effect (almost) doubles standard deviation in satisfaction with democracy, which amounts to 0.28.

Finally, the comparison of the deviance information criterion furthermore shows (not presented here) that the inclusion of the controlling variables does not significantly improve model fit – even though they obviously influence the effect of direct democracy. This finding points again to the main problem of the analysis whereby the cantonal political, cultural and economic characteristics are highly correlated and are difficult to disentangle. It comes to no surprise that the language variables prove to be the strongest variables in the models: These variables not only capture cultural and political differences between the cantons, but also societal and structural aspects (e.g. family networks, social capital, unemployment; see Freitag 2004; Freitag and Stadelmann-Steffen 2009).

Conclusions

Are citizens in strong democracies with highly developed direct democratic institutions and frequent ballot use more satisfied with their democratic system and their life than those in more representative democracies? This research question has been investigated with respect to the 26 Swiss cantons which offer a unique opportunity to quantify and compare the effects of direct democracy. Whereas previous studies by Frey and Stutzer (2000a, 2000b, 2000c) and Frey et al. (2001) based on Swiss data from 1992 find striking results in that a higher formal degree of direct democracy significantly increases happiness of the people, Dorn et al. (2008) in a recent analysis cannot confirm such a relationship. Our study goes beyond the existing contributions by analyzing new data from the Swiss Volunteering Survey 2006 and employing multilevel analysis and thus a more suitable method given the data at hand. Moreover and more importantly, while Frey and Stutzer (2000a, 2000b, 2000c), Frey et al. (2001) as well as their challengers Dorn et al. (2008) implicitly rely in their theoretical assumptions on *satisfaction with democracy*, they fail to

integrate this important concept into their empirical analysis. Thus, in contrast to these previous studies we explicitly incorporated *satisfaction with democracy* into our empirical models when analysing the relationship between direct democracy and individual satisfaction. Finally, we used a more valid operationalization of direct democracy which better suits the central theoretical argument that the procedural effect of direct legislation on satisfaction is most important by distinguishing direct democratic rights (rules-in-form) and their actual use (rules-in-use).

Based on multilevel analysis of the 26 Swiss cantons we conclude that the theoretical assumption on which the happiness hypothesis is based itself can be questioned, as there is no evidence for a very close relationship between satisfaction with democracy and satisfaction with life (happiness) or even for causality between them. Moreover, when simultaneously modeling the effect of direct democracy on different aspects of satisfaction, no empirical support for the happiness hypothesis can be found. Thus, a main result of our study is that there is no evidence for a causal relationship between direct democracy and overall well-being. In particular, satisfaction with democracy and with life must be seen as two distinct, though correlated phenomena, rendering the theoretical argument of the happiness hypothesis weak.

In contrast, there is some support for the first core element of the happiness hypothesis, namely that extensive direct democracy is associated to higher satisfaction with democracy. This relationship however only holds when measuring direct democracy by means of the actual use of direct legislation, thus taking into account the procedural utility. This confirms our initial assumption that given the theoretical argument the *use* of direct democratic instruments is the better indicator of direct democracy: People living in political systems that use more initiatives and referendums tend to have slightly more positive views of how democracy works and look a bit more favourably on the functioning of their political system. It should be mentioned though that empirical evidence is not totally convincing due to different problems such as high multicollinearity and a rather limited cantonal variance once composition effects are controlled for. Still, these findings strengthen our central argument that direct democracy – if at all – has a positive impact on satisfaction with democracy but not on life satisfaction.

While our results regarding subjective well-being are opposed to a series of previous analyses by Frey and Stutzer (2000a, 2000b, 2000c) and Frey et al. (2001) in which they consistently found

that direct democracy is a statistically significant positive determinant of happiness, our conclusion is of course in line with the recent study by Dorn et al. (2008) showing that direct democracy does not affect well-being in Switzerland. Our reasoning is different though: It is not primarily the inclusion of linguistic culture that lets the direct democratic effect vanish, but rather a more appropriate model that explicitly integrates both crucial parts of the happiness hypothesis.

In the last decade, a new line of research has commenced about the merits of direct democracy unrelated to effects on specific public choices. Scholars have begun examining whether direct democratic processes have beneficial consequences in areas such as civic engagement and political trust. In a short period of time, a lot of empirical evidence has been presented indicating that greater use of direct democracy leads to higher voter turnout (Smith and Tolbert 2004), increased citizen interest in, and greater knowledge about, politics (Smith 2002, Mendelsohn and Cutler 2000, Tolbert et al. 2003), better informed citizens (Benz and Stutzer 2004) and enhanced sense of political efficacy (Bowler and Donovan 2002, Hero and Tolbert 2004, Mendelsohn and Cutler 2000, but see Dyck and Lascher 2009). In sum, such findings confirm earlier statements of prominent advocates of the participatory democracy theory, in particular Pateman's argument (1970: 25) that "the more the individual citizen participates the better able he is to do so" as well as Barber's (1984: 284) assumption "the referendum can (...) provide a permanent instrument of civic education". In this impressive line of research we can now add a further aspect, namely that the frequent use of direct democracy tends to be related to higher satisfaction with democracy and in this sense strengthens citizens´ confidence in government responsiveness. However, at the same time, our findings show that direct democracy is not a panacea for everything: In this vein, subjective well-being is first and foremost an individual feature, which cannot be explained by politico-institutional factors such as direct democracy.

Finally, our analysis of direct democracy is presented with the understanding that the results are based on specific data for Switzerland. Additional research using large surveys and representative samples from different cultural contexts (e.g. US states) and robust statistical modelling, including multi-level frameworks, is necessary to shed more light on this important issue.

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Appendix: Hypotheses, operationalization and sources

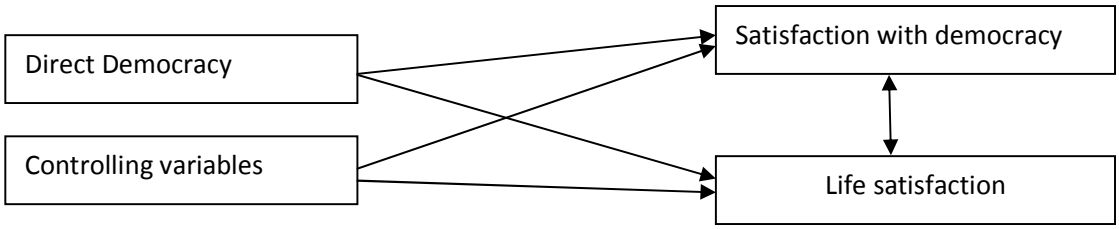
Variable	Summary statistics	Operationalization/Source*
Dependent variables		
Life satisfaction	Mean: 8.09 S.D. 1.70 Min.: 0 Max. 10	Life satisfaction measured on a scale from 0 to 10, obtained from responses to the following question: Generally speaking, how satisfied are you with your life? Where would you place yourself on a scale from 0 to 10, where 0 means "very unsatisfied" and 10 means "very satisfied".
Satisfaction with democracy	Mean: 6.27 S.D. 1.95 Min.: 0 Max. 10	Satisfaction with democracy measured on a scale from 0 to 10, obtained from responses to the following question: Generally speaking, how satisfied are you with how democracy in Switzerland works? 0 means "not at all satisfied", 10 means "very satisfied".
Independent variables – individual level		
Sex	Shares: Men: 42.19 % Women: 57.81%	Dummy: 0 = women; 1 = men
Age	Mean: 47.76 S.D. 16.67 Min.: 15 Max. 92	Age (in years) of the persons interviewed, Age squared (in years) of the persons interviewed
Foreigner	Shares: Swiss citizen: 87.13% Foreigner: 12.87%	Dummy: 0=Swiss nationality; 1=foreigner

Educational level	Shares: Low education: 14.88% Medium education: 53.53% High education: 31.59	Highest completed level of education, 3 categories: low educational achievements (secondary level I), middle educational achievements (secondary level II), high educational achievements (tertiary level)
Civil status	Shares: Married/cohabiting: 49.96% Single: 50.04%	Dummy: 0= single, widowed, divorced 1= married, cohabiting
Children	Shares: Children: 19.39% No children: 80.61%	Dummy: 0=no school-aged children; 1=school-aged child/ren
Income	Mean: 2.95 S.D. 1.46 Min.: 1 Max. 7	Seven categories ranging from fewer than 3000 CHF to over 15000 CHF per month
Unemployment	Shares: Unemployed: 2.93% Not unemployed: 97.07%	Dummy: 1= unemployed; 0 = not unemployed
Religion	Shares: Non-denominational: 13.87% Denominational : 86.13%	Dummy: 0 = has a denomination; 1 = undenominational
Political interest	Mean: 5.44 S.D. 2.66 Min.: 0 Max. 10	Political interest, on a scale from 0 (not at all interested) to 10 (very much interested)
Independent variables –contextual level		
Degree of direct democracy	Mean: 3.89 S.D. 1.19 Min.: 1.75 Max. 5.69	Index of direct democracy, 2003 (Vatter et al. 2009) based on Stutzer and Frey (2000) and Stutzer (1999), Higher values indicate more direct citizen participation.

Use of direct democracy	Mean: 4.13 S.D. 2.32 Min.: 0.6 Max. 11.5	Number of cantonal ballot measures per year. Mean value 2000-2004 (Année politique suisse, various years).
Language dummy	Shares: Latin cantons: 27.94% German-speaking cantons: 72.06%	Dummy: 1 = German-speaking canton; 0 = Latin canton (based on Federal Statistical Office: population census 2000)
German-speakers in %	Mean: 64.71 S.D. 34.22 Min.: 3.9 Max. 93.5	Share of German-speakrs in a canton (based on FSO 2000; population census 2000)
Catholicism	Mean: 43.42 S.D. 20.52 Min.: 16 Max. 85.8	Proportion of Catholics in the cantonal population (Federal Statistical Office: population census 2000)
Financial Power	Mean: 97.18 S.D. 43.54 Min.: 30 Max. 227	Index of cantonal financial power (*Gesamtindex der Finanzkraft*) calculated based on the indicators „aggregate income", "fiscal power", "tax load" and "montane area", 2005 (www.badac.ch)

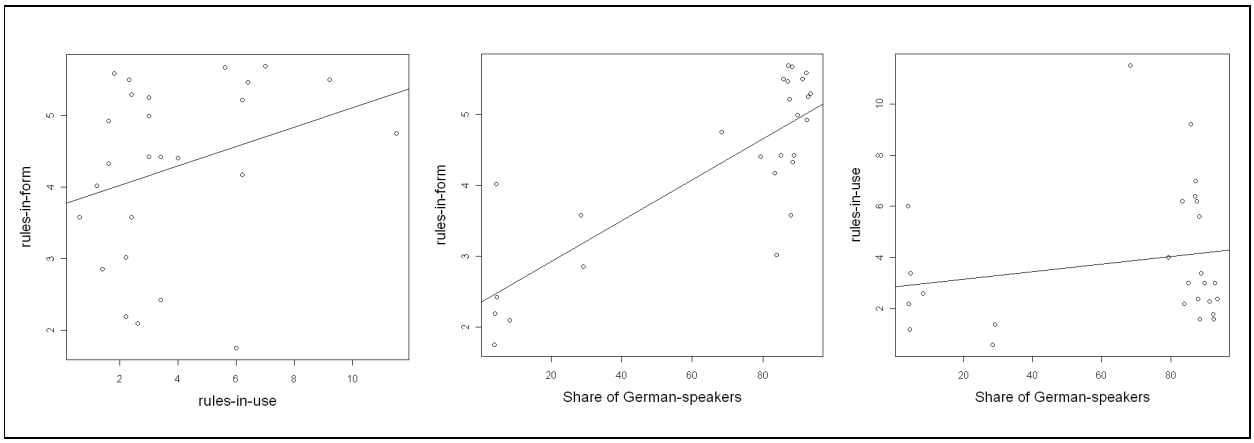
*All individual variables are taken from the Swiss Volunteering Survey 2006.

Figure 1: Multivariate model for the direct democratic influence on individual satisfaction



Note: Own illustration

Figure 2: Relationship between linguistic culture and direct democracy



Note: Scatter plot and fitted bivariate regression line.

Table 1: Individual level models to explain satisfaction with democracy and life

	Model 1		*Model 2*	
	Satisfaction with democracy	**Life satisfaction**	**Satisfaction with democracy**	**Life satisfaction**
Fixed effects				
Constant	7.12 (6.75 / 7.49)	9.27 (8.94 / 9.59)	7.12 (6.76 / 7.51)	8.72 (8.38 / 9.06)
Individual level				
Sex (Ref.cat: female)	0.16 (0.08/0.24)	-0.13 (-0.21/-0.06)	0.16 (0.07/0.25)	-0.15 (-0.22/-0.07)
Foreigner (Ref.cat.: Swiss)	0.46 (0.34/0.59)	-0.43 (-0.54/-0.32)	0.47 (0.34/0.60)	-0.46 (-0.58/-0.35)
Age	-0.07 (-0.08/ -0.05)	-0.06 (-0.07/-0.05)	-0.07 (-0.08/ -0.05)	-0.06 (-0.07/-0.04)
Age squared	0.00 (0.00 / 0.00)	0.00 (0.00 /0.00)	0.00 (0.00 / 0.00)	0.00 (0.00 /0.00)
Civil status (Ref.cat.: single)	0.16 (0.06 / 0.25)	0.52 (0.44 /0.61)	0.16 (0.07 / 0.25)	0.51 (0.43 /0.59)
Children (Ref.cat.: no children)	0.05 (-0.07 / 0.17)	0.03 (-0.07 /0.13)	0.05 (-0.07 / 0.17)	0.02 (-0.08 /0.13)
Education (Ref.cat.: medium education)				
Low education	-0.19 (-0.34 /-0.07)	-0.21 (-0.32/ -0.10)	-0.19 (-0.32 /-0.06)	-0.19 (-0.32/ -0.09)
High education	0.22 (0.12 /0.32)	0.01 (-0.07 /0.10)	0.22 (0.12 /0.32)	-0.00 (-0.09 /0.08)
Income	-0.04 (-0.06/ -0.01)	-0.07 (-0.10 /-0.05)	-0.04 (-0.06/ -0.01)	-0.07 (-0.09 /-0.05)
Unemployed	-0.24 (-0.55/ -0.02)	-0.73 (-0.95 /-0.52)	-0.24 (-0.50/ -0.01)	-0.72 (-0.93/-0.51)
No denomination / religion	-0.20 (-0.35/ -0.07)	-0.10 (-0.21 / 0.00)	-0.20 (-0.32/ -0.07)	-0.09 (-0.20 / 0.02)
Political interest	0.11 (0.09 / 0.13)	0.03 (0.02 / 0.05)	0.11 (0.10 / 0.13)	0.03 (0.01 / 0.04)
Satisfaction with democracy				0.08 (0.06/ 0.10)
Random effects				
Variance individual level	3.55 (3.45 / 3.67)	2.68 (2.60/2.76)	3.55 (3.44 / 3.66)	2.66 (2.58 / 2.74)
Variance cantonal level	0.03 (0.02 / 0.06)	0.02 (0.01/0.04)	0.04 (0.02 / 0.07)	0.02 (0.01 / 0.03)
Correlation individual level	*0.09*			
Correlation cantonal level	*0.46*		*0.36*	
Deviance	*44072*		*44071*	
N	*5565(26)*		*5565(26)*	

Note: Multivariate response multilevel models; Posterior mean and 90% credible interval (in brackets) presented. All models based on Bayesian estimation, 50‘000 iterations; diffuse priors (gamma priors). No signs of non-convergence.

Table 2: Direct democracy and satisfaction with democracy and life

		Mean	5%	95%	DIC
Rules-in-form	**SD**	0.058	-0.008	0.126	44119
	H	**0.091**	**0.050**	**0.134**	
Rules-in-use	**SD**	**0.033**	**0.004**	**0.060**	44127
	H	-0.006	-0.031	0.018	

Note: Multivariate response multilevel models; Posterior mean and 90% credible interval of the direct democratic variable presented. All models control for individual level effects as shown in Table 1 and are based on Bayesian estimation (50'000 iterations; diffuse priors (gamma priors); no signs of non-convergence). Bold: Posterior 90% credible interval does not include zero. SD = Satisfaction with democracy; H = Happiness.

Table 3: Full contextual models

	Rules-in-form			**Rules-in-use**		
Controls	*Catholicism*	*Financial power*	*Catholicism & financial power*	*Catholicism*	*Financial power*	*Catholicism & financial power*
Language dummy	SD -0.07 (0.07)	SD -0.00 (0.05)	SD -0.04 (0.05)	***SD 0.03 (0.02)***	SD 0.01 (0.02)	SD 0.02 (0.02)
	H 0.03 (0.04)	H 0.03 (0.04)	H 0.02 (0.04)	H -0.02 (0.01)	H -0.01 (0.01)	H -0.01 (0.01)
German-speakers in %	SD -0.05 (0.07)	SD -0.01 (0.05)	SD -0.03 (0.05)	***SD 0.04 (0.02)***	SD 0.02 (0.02)	SD 0.02 (0.02)
	H 0.01 (0.03)	H 0.01 (0.06)	H 0.01 (0.04)	H -0.01 (0.01)	H -0.01 (0.01)	H -0.01 (0.01)

Note: Multivariate response multilevel models, Posterior mean of the direct democratic variable (standard deviation in brackets). All models based on Bayesian estimation, 50'000 iterations; diffuse priors (gamma priors). No signs of non-convergence. Bold: Posterior 90% credible interval does not include zero.

Notes

[i] Similar to Frey and Stutzer (2000a, 2000b, 2000c) „satisfaction with life“ is used here interchangeably with the terms „happiness“ and „subjective well-being“.

[ii] Recently, Dorn et al. (2008) re-evaluate the relation between direct democracy and subjective well-being in Switzerland using new data from the Swiss Household Panel. In contrast to Frey and Stutzer (2000a, b) they find that once language is controlled for, no robust significant relationship between the extent of popular rights and life satisfaction can be observed.

[iii] For a discussion of multilevel structural equation models based see Hox and Maas (2004).

[iv] Dorn et al. (2008: 234) propose to account for individual cultural background in terms of language spoken at home. As this information is not contained in our data set we do not consider this variable. In order to account for the Dorn et al.'s (2008) finding whereby individual belonging to a language group is the crucial aspects we measure cantonal linguistic culture not only in terms of regional dummies, but also use the population share of German-speakers in a canton, which better capture linguistic culture in bilingual cantons like Fribourg, Berne or Valais. Further analyses not presented here indeed show that the models including this variable better fits the data compared to a dummy specification.

[v] We refrain from integrating further institutional aspects such as local autonomy (Frey and Stutzer 2000a).

[vi] This suggestion is supported by further analyses not shown, in which a Dummy is included taking the value of one if foreigners are allowed to vote at the cantonal level. (This applies to only two cantons: Jura since 1978 and Neuchâtel since 2000). It can be seen from these models that cantons allowing foreigners to participate in the political process exhibit less satisfaction in democracy than cantons that exclude foreigners. Also, this effects does not substantially differ between Swiss and foreign citizens.

[vii] The inclusion of direct democracy completely explains the cantonal differences in happiness in the models presented in Table 2. In the following models (Table 3) the random intercept at the cantonal level is therefore omitted in the happiness equation.