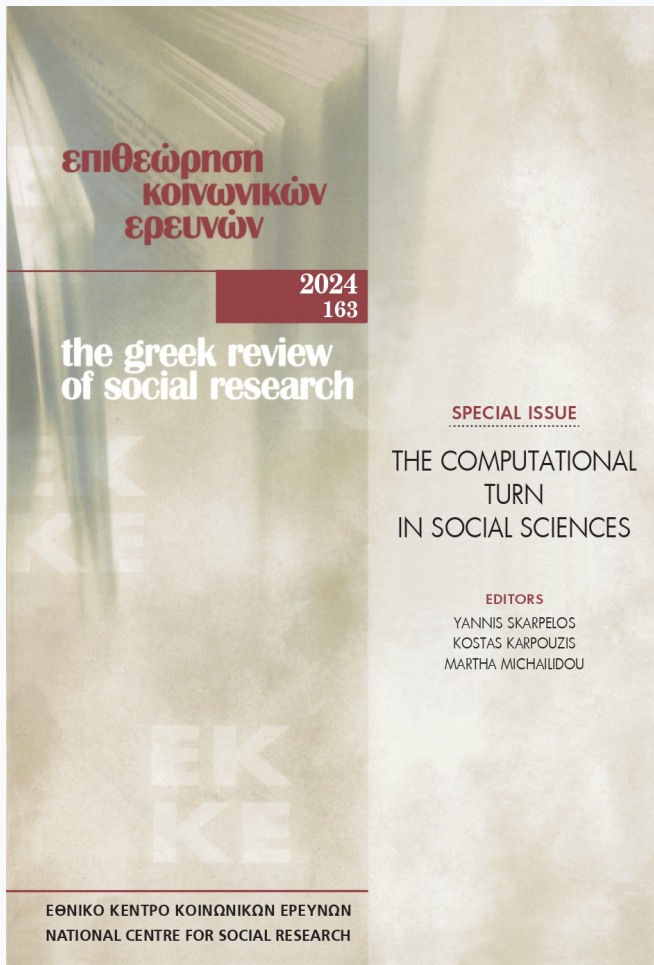


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Virtual encounter simulations for comparing public expectations about the role of the welfare state

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*Georg P. Mueller**

VIRTUAL ENCOUNTER SIMULATIONS FOR COMPARING
PUBLIC EXPECTATIONS
ABOUT THE ROLE OF THE WELFARE STATE

ABSTRACT

By the end of September 2022, a plebiscite about a new pension law suggested once more that the western Swiss region of the Arc Lémanique (AL) is politically different from the rest of Switzerland. Newspapers argued that this is the result of the proximity to France with the same language as the AL.

This paper tries to find out, how far the political opinions of the AL are away from the rest of Switzerland and how close they are to France. For this purpose, the author presents a new methodology from computational social science: virtual encounter simulations, which he successfully applied in an earlier publication to similar problems. It is based on the idea of using survey data for the construction of random-dyads of persons, who can subsequently be compared with regard to their political attitudes. By averaging the inter-individual differences of dyads of persons belonging to the same group and dyads belonging to different groups it is possible to compare ideological inter-group with intra-group conflicts.

In order to tackle the initial research question, the author analyses the international survey ISSP-V (2016), focussed on the role of government, also with regard to the mentioned old age pensions. Virtual encounter simulations reveal that the AL is ideologically much closer to German speaking Switzerland than originally expected.

Keywords: *welfare state, computational social science, virtual encounter simulations, Switzerland, France*

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ΠΡΟΣΟΜΟΙΩΣΕΙΣ ΕΙΚΟΝΙΚΩΝ ΑΝΤΙΠΑΡΑΘΕΣΕΩΝ
ΠΡΟΣ ΣΥΓΚΡΙΣΗ. ΠΡΟΣΔΟΚΙΕΣ ΤΟΥ ΚΟΙΝΟΥ
ΣΧΕΤΙΚΑ ΜΕ ΤΟΝ ΡΟΛΟ ΤΟΥ ΚΡΑΤΟΥΣ ΠΡΟΝΟΙΑΣ

ΠΕΡΙΛΗΨΗ

Στα τέλη Σεπτεμβρίου του 2022, ένα δημοψήφισμα σχετικά με έναν νέο συνταξιοδοτικό νόμο υπέδειξε για άλλη μια φορά ότι η δυτική ελβετική περιοχή της *Arc Lémanique (AL)* είναι πολιτικά διαφορετική από την υπόλοιπη Ελβετία. Οι εφημερίδες υποστήριξαν ότι αυτό είναι αποτέλεσμα της γγγύτητας με τη Γαλλία, η οποία έχει την ίδια γλώσσα με την AL.

Η παρούσα εργασία προσπαθεί να διαπιστώσει πόσο απέχουν οι πολιτικές απόψεις της AL από την υπόλοιπη Ελβετία και πόσο κοντά είναι στη Γαλλία. Για τον σκοπό αυτόν, ο συγγραφέας παρουσιάζει μια νέα μεθοδολογία από την υπολογιστική κοινωνική επιστήμη: τις προσομοιώσεις εικονικών αντιπαραθέσεων, τις οποίες εφάρμοσε με επιτυχία σε προηγούμενη δημοσίευση που αφορούσε παρόμοια προβλήματα. Η μεθοδολογία βασίζεται στην ιδέα χρήσης δεδομένων ερευνών από έρευνες για την κατασκευή τυχαίων-δυάδων ατόμων, τα οποία μπορούν στη συνέχεια να συγκριθούν ως προς τις πολιτικές τους απόψεις. Με τον υπολογισμό του μέσου όρου των δια-ατομικών διαφορών των δυάδων ατόμων που ανήκουν στην ίδια ομάδα και των δυάδων που ανήκουν σε διαφορετικές ομάδες είναι δυνατόν να συγκριθούν οι ιδεολογικές συγκρούσεις μεταξύ ομάδων με τις συγκρούσεις εντός ομάδων. Προκειμένου να αντιμετωπίσει το αρχικό ερευνητικό ερώτημα, ο συγγραφέας αναλύει τη διεθνή έρευνα ISSP-V (2016), η οποία επικεντρώνεται στον ρόλο της κυβέρνησης καθώς επίσης και στις αναφερόμενες συντάξεις γήρατος. Οι προσομοιώσεις εικονικών αντιπαραθέσεων αποκαλύπτουν ότι η AL είναι ιδεολογικά πολύ πιο κοντά στη γερμανόφωνη Ελβετία απ' ό,τι αρχικά αναμενόταν.

Λέξεις κλειδιά: κράτος πρόνοιας, υπολογιστική κοινωνική επιστήμη, προσομοιώσεις εικονικών αντιπαραθέσεων, Ελβετία, Γαλλία

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1. INTRODUCTION AND OVERVIEW

Switzerland is a multilingual society with three official languages: German, spoken in the northeast, Italian, used in the south, and French, the language of the west. Although the federal structure protects the country from manifest linguistic conflicts, local languages are nonetheless correlated with different political preferences (Büchi, 2003, pp. 243-287; Hermann & Leuthold, 2003, pp. 48-51; Kriesi, et al., 1996; Schmid, 2001, chap. 7). This holds not only for the exemplary topic of the European integration but also matters for social policy, as a recent plebiscite about a new pension law has shown in September 2022 (see Bundesamt für Sozialversicherungen, 2022). In general, the French-speaking west – and especially the *Arc Lémanique* around the lake of Geneva – is politically more left- and state-oriented than the rest of Switzerland. It is argued, that this is the result of the political influence of France, which has a strong central state and is less market-oriented than most regions of Switzerland. Thus it is supposed, that the political attitudes of the Swiss region of the *Arc Lémanique* are generally closer to France than to the rest of Switzerland (see Fig. 1).

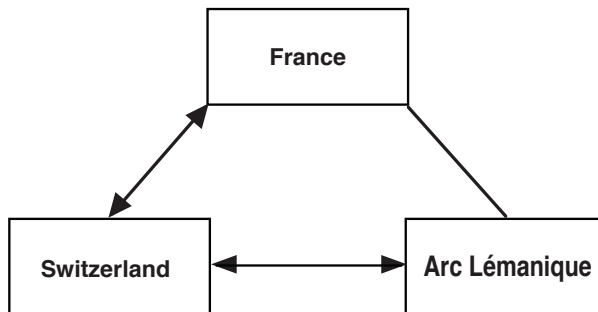


Figure 1: A graphical summary of the main hypothesis

Legend: Connecting line with double arrows: Symmetrical conflict;
Connecting line with missing arrows: No significant conflict.

To check this hypothesis, we are not following the usual statistical procedure of comparing the mean attitudes of different national or regional populations. This approach is too prone to ecological fallacies¹ (Crow,

1. *Ecological fallacies* are invalid inferences from the statistical properties (e.g. correlations) of a highly aggregated unit of analysis to the corresponding properties of its subunits.

2006) and too far away from the everyday experiences of the concerned people. Instead, we are simulating the political conflicts resulting from random matches of people belonging to the same or different groups. Through these virtual encounters, we can compare the level of *inter-group* conflicts about social policy with the respective *intra-group* conflicts. An inter-group conflict is only serious if it is higher than the benchmark given by a similar intra-group conflict. As there are two different group-specific benchmarks, inter-group conflicts can also be *asymmetrical*: What is serious from the perspective of one group needn't be serious for the other. As shown by Kriesi et al. (1996, chap. 8.4) in an empirical study, this asymmetry of perceived conflicts seems e.g. to exist between the French- and the German-speaking Swiss population concerning the general political cleavage "Röstigraben" between the two groups.

This article presents in the following section a technical introduction to the virtual encounter methodology (see Mueller, 2017, 2021). As an illustration, it subsequently proceeds to an empirical analysis of the cleavages between France, Switzerland, and the Arc Lémanique about seven aspects of social policy. Finally, there is a comparison with the traditional statistical method of t-tests of mean attitudes to get this way a clearer view of the advantages of the virtual encounter method as well as its technical requirements.

2. THE METHODOLOGY OF VIRTUAL ENCOUNTER SIMULATIONS

The data structure of big social surveys is generally *monadic*: each record describes the social properties, attitudes, etc. of just *one* individual. Consequently, these data structures are not directly suited for describing conflicts, where two persons are involved. Thus, for conflict analyses *dyadic* data are required, which however hardly exist in data archives like e.g. the *Data Services for the Social Sciences* (2023) in Germany. Consequently, for conflict analyses such data have to be constructed according to the interests of the researcher. The current section 2 presents for this purpose a new methodology, which assumes that temporary contacts with strangers prevail. Thus, we are assuming that the more intensive contacts between friends, neighbours, etc. are statistically less important than the more frequent anonymous ones. According to Tönnies (2005), this assumption typically holds for modern urban societies, like Germany, France, or Switzerland. Consequently, we propose to construct dyadic conflict files

by random matching of persons from the compared groups. The technical details of this construction process are as follows:

- As a first step, the sample size of the compared groups has to be equalized, where the smallest file defines the N of the others (see Fig. 2). This requires the elimination of person-related data records, which *must* be done by a random process with *equal* elimination-risks for all individuals of the concerned groups.
- Subsequently, the selected person-specific data records of the analysed groups should be *randomly reordered*, where each person has the same chance for a given place in the sequence of records. This reordering is especially important for the calculation of intra-group conflicts, where in Fig. 2 group A and group B are *identical*. Only this way the simulated encounters between groups A and B are at random (see next following steps).
- As a third step, the virtual conflicts $C_{i,j}$ between randomly matched persons i and j from groups A and B have to be calculated concerning all characteristics X . For *interval-* or *ratio-scaled* scores X_i and X_j of the two persons i and j , the respective conflicts may be operationalized as

$$C_{i,j} = |X_i - X_j| \quad (1a)$$

or alternatively as

$$C_{i,j} = (X_i - X_j)^2 \quad (1b)$$

where formula (1a) is more sensitive to small differences between X_i and X_j than equation (1b). If X_i and X_j are measured on a *nominal* scale, the operationalisation of $C_{i,j}$ looks differently:

$$C_{i,j} = 0, \text{ if } X_i = X_j \quad (2a)$$

and

$$C_{i,j} = 1, \text{ if } X_i \neq X_j \quad (2b)$$

- Finally, the inter-individual scores $C_{i,j}$ have to be aggregated into group-related conflicts $C_{A,B}$, preferably by the calculation of mean values:

$$C_{A,B} = \text{MEAN}(C_{i,j} \mid i \in A \text{ and } j \in B) \quad (3)$$

If $A \neq B$, $C_{A,B}$ is the *inter-group* conflict between A and B, whereas for $A = B$, $C_{A,B}$ is equal to the *intra-group* conflict $C_{A,A}$. Definition (3) can also be applied to *nominal-scaled* X_i and X_j : from the definition (2a) and (2b) of the inter-individual conflicts follows, that $C_{A,B}$ is for

nominal scales just the share of matched pairs (i,j), for which the scores X_i and X_j are different, e.g. with regard to a political attitude.

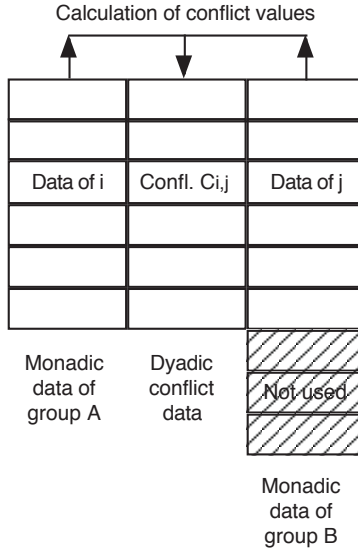


Figure 2: *The calculation of virtual conflict values*

Source: Figure adapted from the author’s work (see Mueller, 2021, Fig. 1).

At the end of the previous four-step procedure, there are for all analysed variables X three types of conflicts: inter-group conflicts $C_{A,B}$ between the groups A and B and intra-group conflicts $C_{A,A}$ and $C_{B,B}$ of A and B. Among others, they can be used for the following types of comparisons: First, for comparing different *variables* X concerning the amount of conflicts $C_{A,A}$, $C_{B,B}$, and $C_{A,B}$ within and between the groups A and B. This allows e.g. to identify the controversial (“hot”) and the consensual (“cold”) topics in the political debate. Second, for comparing the *inter-group* conflict $C_{A,B}$ with the *intra-group* conflicts $C_{A,A}$ and $C_{B,B}$. Due to the different intra-group benchmarks, there are two different levels of relative conflict:

$$C_{A,B} - C_{A,A} \tag{4a}$$

and

$$C_{A,B} - C_{B,B} \tag{4b}$$

Equation (4a) describes the inter-group conflict from the perspective of group A and formula (4b) from the point of reference of group B. If group

A has e.g. a low level of internal conflict $C_{A,A}$, it perceives the inter group-conflict $C_{A,B}$ as more serious than the other group B, if B has a higher level of internal conflict $C_{B,B}$. Thus, we assume in this paper an *asymmetry* of the relative conflicts (4a) and (4b).

3. VIRTUAL ENCOUNTER SIMULATIONS OF PUBLIC WELFARE EXPECTATIONS

The welfare state is a central institution of modern societies: it corrects the hardships and injustices of market-oriented capitalist economies and contributes this way to the maintenance of societal harmony (Alber, 1982, chap. 2). However, as shown by Esping-Andersen (1990), Gelissen (2002, chap. 2), and many others, the responsibilities of the welfare state vary from country to country and change also within the national histories. For this reason, the *International Social Survey Programme* (2023) has a long tradition of asking citizens about the responsibility of the (welfare) state in treating various types of social problems. The respective international interview modules were called *The Role of Government I, II, III, IV, and V*. In this article, we use interview data from the latest module ISSP-V (2016) (= dataset ZA-6900 of GESIS), which was collected in 2016. In particular, our focus is on the *inverted* scores² of the following variables, describing the public expectations about governmental responsibilities:

- V23 \approx Health insurance
- V24 \approx Old age pensions
- V26 \approx Unemployment insurance
- V27 \approx Income redistribution
- V28 \approx Stipends for students
- V29 \approx Housing subsidies
- V31 \approx Support of gender equality

The monadic sample of the *Arc Lémanique*, was defined by setting the ISSP-variable CH_REG = 1 and comprises the Swiss cantons Geneva, Vaud, and Valais. The *Swiss* monadic sample was extracted by setting the ISSP-variable COUNTRY = 756 and *excluding* the Arc Lémanique (CH_REG = 1). Similarly, we defined the French monadic sample by setting the ISSP-

2. Inverted score = 5 - original score, yielding a new 4-point scale with the minimum value 1 and the maximum 4.

variable COUNTRY = 250. By the procedures defined in the previous section 2, we were able to construct the following six virtual encounter files:

France – France
 Arc Lémanique – Arc Lémanique
 Switzerland – Switzerland
 France – Switzerland
 France – Arc Lémanique
 Switzerland – Arc Lémanique.

Based on the absolute metric (1a), we could calculate the intra- and the inter-group conflicts (see Tab. 2 in the data appendix) and compare the related mean values by statistical t-tests. The results are presented in Figs 3a-c, 4a-c, and 5, as well as in Tabs 1a-b.

The first group of Figs 3a-c displays *no* statistically significant inter-group conflict at all and consequently is in total contradiction to the hypothetical Fig. 1. For two of the three concerned topics, this high level of consensus is not surprising because health insurance (Fig. 3a) and old age pensions (Fig. 3b) are important and highly accepted elements of the European welfare states.

The second group of figures (Figs 4a-c) shows just *one* conflict relation per welfare topic. It corresponds slightly better to the hypothetical Fig. 1, although the differences are still very visible. Among others, there are again no statistically significant conflicts between the Arc Lémanique and the rest of Switzerland. Given an unexpected conflict relation between the Arc Lémanique and France (see Fig. 4b) one might conclude, that the welfare state attitudes of the Arc Lémanique are more Swiss than French.

The last Fig. 5 refers to income redistribution and displays a lot of internal and external conflict. This is insofar not astonishing as income redistribution creates not only winners, like the previous welfare measures, but also (wealthy) losers. As Tab. 1a displays, income redistribution is for *nearly all* inter- and intra-group relations the *most important* conflict topic. This even holds for the virtual conflict between the Arc Lémanique and the rest of Switzerland, although this conflict relation is once again statistically *not significant* and thus contradicts our original hypothesis of Fig. 1.

In this article, there is not only a list of the *most* conflictive topics (Tab. 1a) but also another one with the *least* controversial services of the welfare state (Tab. 1b). Like in Tab. 1a we find also here a statistical *concentration*

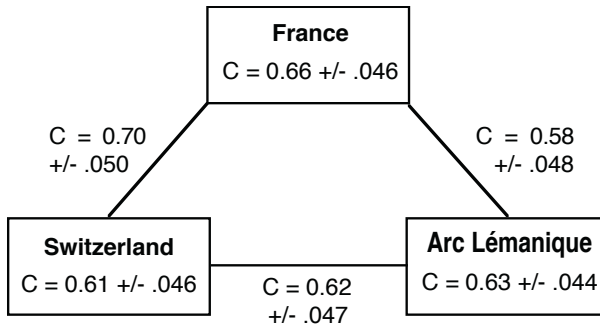


Figure 3a: Conflicts about health insurance (V23)

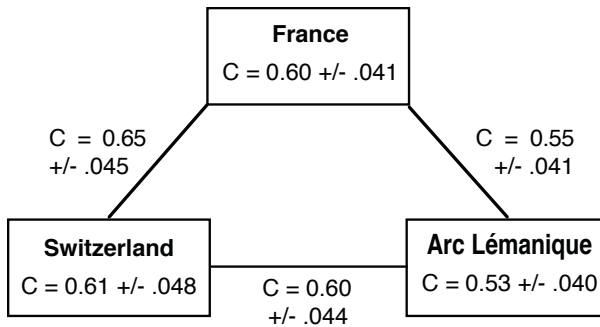


Figure 3b: Conflicts about old age pensions (V24)

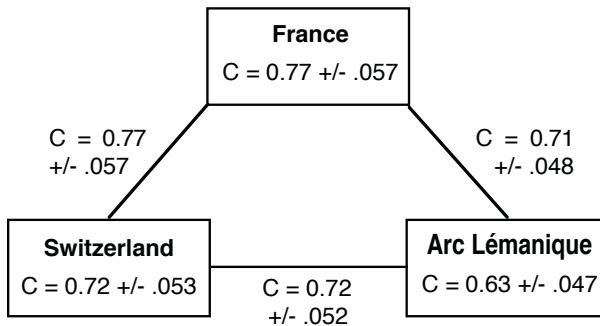


Figure 3c: Conflicts about housing subsidies (V29)

Legend to Figs 3a-c: C = Mean conflict +/- standard error. Connecting lines *without* arrows: Inter-group conflict is *not* different from both related intra-group conflicts, according to two separate one-tailed t-tests with $\alpha = 5\%$.

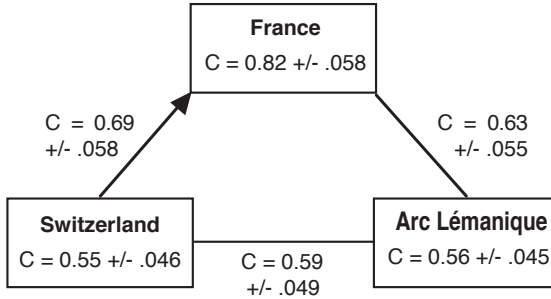


Figure 4a: Conflicts about unemployment insurance (V26)

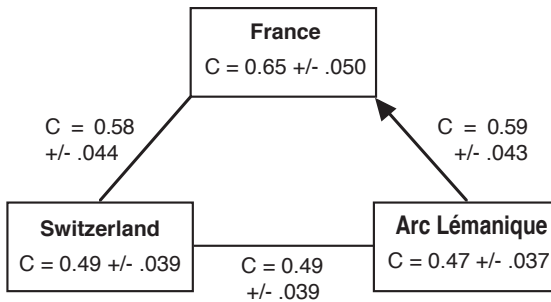


Figure 4b: Conflicts about stipends for students (V28)

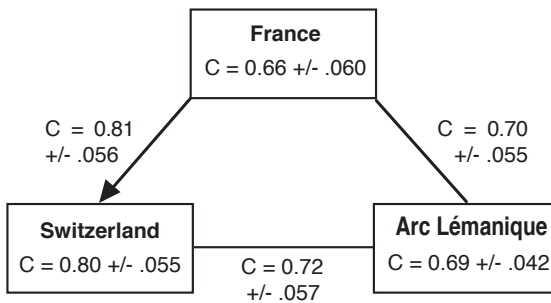


Figure 4c: Conflicts about support of gender equality (V31)

Legend to Figs 4a-c: C = Mean conflict +/- standard error. Connecting lines *without arrows*: See legend of Figs 3a-c. Connecting lines *with one directed arrow*: Inter-group conflict is *different* from intra-group conflicts at the *origin* but *not* at the *target* of the connecting line, according to one-tailed t-tests with $\alpha = 5\%$.

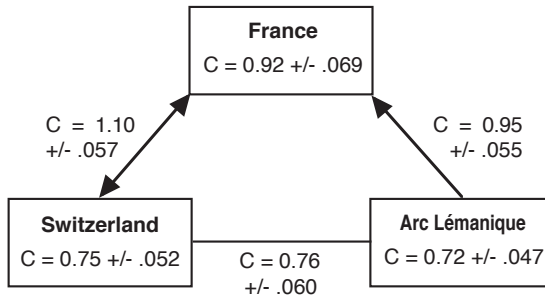


Figure 5: *Conflicts about income redistribution (V27)*

Legend to Fig. 5: C = Mean conflict +/- standard error. Connecting lines *without arrows*: See legend of Figs 3a-c. Connecting lines with *one directed arrow*: See legend of Figs 4a-c. Connecting lines with *two directed arrows*: Inter-group conflict is *different* from intra-group conflicts at the *origin* and the *target* of the connecting line, according to two one-tailed t-tests with $\alpha = 5\%$.

on two political items: *stipends for students (V28)* and *old age pensions (V24)*. The observed inter-regional homogeneity of topics with either high or low levels of conflict calls for an explanation. One is based on *social- and mass-media influences* and argues that conflictive political discourses spread from one region or country to another, creating this way a common European culture (Collier & Messick, 2014). A second explanation, mainly based on *statistical considerations*, argues that the heterogeneity of political opinions in one region or country increases not only its internal but also all of its external conflicts.

Table 1a: *The strongest conflicts by given types of encounter*

Type of encounter	Conflict	Governmental responsibility
France – Switzerland	1.10	V27 = Income redistribution
France – Arc Lémanique	0.95	V27 = Income redistribution
Intra France	0.92	V27 = Income redistribution
Intra Switzerland	0.80	V31 = Gender equality
Switzerland – Arc Lémanique	0.76	V27 = Income redistribution
Intra Arc Lémanique	0.72	V27 = Income redistribution

Table 1b: *The weakest conflicts by given types of encounter*³

Type of encounter	Conflict	Governmental responsibility
Intra Arc Lémanique	0.47	V28 = Stipends for students
Switzerland – Arc Lémanique	0.49	V28 = Stipends for students
Intra Switzerland	0.49	V28 = Stipends for students
France – Arc Lémanique	0.55	V24 = Old age pensions
France – Switzerland	0.58	V28 = Stipends for students
Intra France	0.60	V24 = Old age pensions

4. COMPARISON WITH THE TRADITIONAL ANALYSIS

The traditional way of comparing group-specific political attitudes is based on t-tests of mean values of the respective *individual scores* (Kanji, 1993, p. 29). Thus it is possible to compare the results of virtual encounter simulations presented in Figs 3a-c, 4a-c, and 5 with the analogous diagrams created by this traditional methodology. For all analysed variables, the diagrams of the two methods are different. In the best case of variable V26 (unemployment insurance), there is just one different inter-group relation, as Figs 6a-b demonstrate. In the worst case of Figs 7a-b, referring to conflicts about old age pensions (V24) all links are different. In general, the virtual encounter methodology yields *less* significant conflict relations than the traditional approach based on t-tests of mean variable scores. This corresponds to the author's experience in an earlier study (Mueller, 2021) comparing national identities in French- and German-speaking Switzerland.

Despite the differences in the exemplary Figs 6a-b and 7a-b, the author considers the virtual encounter simulations as superior to the comparisons of mean attitude scores:

- a) Virtual encounter simulation focuses on the *daily conflict experience* of the concerned social actors by taking the intra-group conflicts into account. The latter level of conflict creates a benchmark for the subjective assessment of external inter-group conflicts. This subjectivity makes the virtual encounter simulation superior to the comparison of mean attitude scores.

3. A weak conflict must not be confused with the desired level of governmental spending.

- b) Virtual encounter simulation avoids *ecological fallacies* (Crow, 2006) by making inferences based on inter-individual differences. To the contrary, the traditional approach argues on the basis of *aggregated* mean values. This way, it erroneously overlooks among others the possible conflicts between two groups with the *same* mean scores of political attitudes.
- c) Like social simulation in general, virtual encounter simulation enables the researcher to make “*experiments*” (Gilbert & Troitzsch, 1999, p.13), which are in real life hard to realise, e.g. due to linguistic or geographical barriers that hinder direct political discussions between French- and German-speaking Swiss citizens (Kriesi et al., 1996, p. 98).

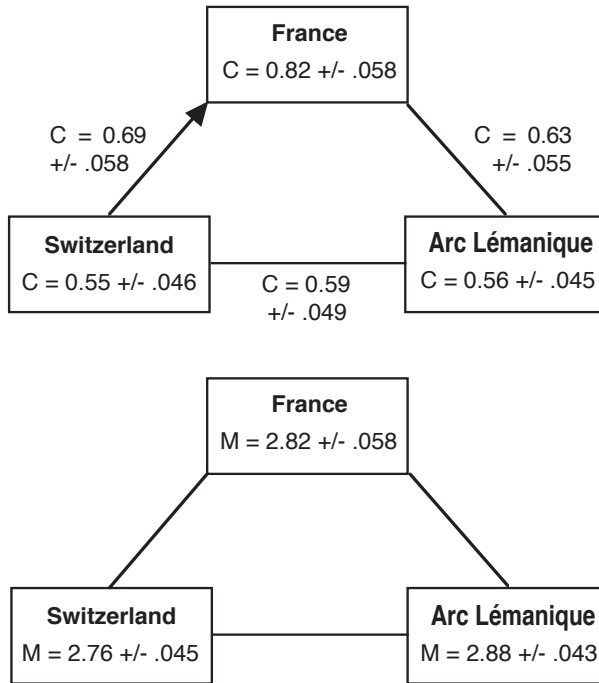


Figure 6a,b: Analyses of conflicts about unemployment insurance (V26) by virtual encounter simulations (above) and comparisons of mean scores (below)

Legend to Fig. 6a (above): See legend to Fig. 4a

Legend to Fig. 6b (below): M = Mean scores of V26 +/- standard error.

Connecting lines *without* arrows: Related intra-group mean scores are *not* different, according to two-tailed t-tests with $\alpha = 5\%$.

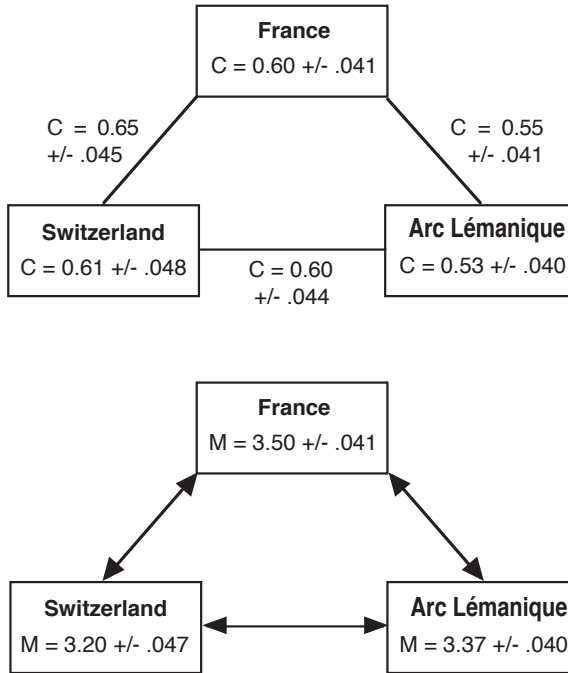


Figure 7a,b: Analyses of conflicts about old age pensions (V24) by virtual encounter simulations (above) and comparisons of mean scores (below)

Legend to Fig. 7a (above): See legend to Fig. 3b.

Legend to Fig. 7b (below): M = Mean scores of V24 +/- standard error.

Connecting lines *with* arrows: Related intra-group mean scores are statistically *different*, according to two-tailed t-tests with $\alpha = 5\%$.

5. SUMMARY AND CONCLUSIONS

According to Fig. 1, we originally expected relatively deep political cleavages (Kriesi et al., 1996) between Switzerland and France on the one hand and the Arc Lémanique and the rest of Switzerland on the other. However, the empirical analyses of section 3 show no conflicts at all between Switzerland and the Arc Lémanique and thus totally disconfirm our original hypotheses. Similarly, there is less conflict between Switzerland and France than expected. For the following four out of seven variables, there is no conflict between the two countries: health insurance (V23), old age pensions (V24), housing subsidies (V29), and stipends for students

(V28). Finally, according to Tabs 1a-b the most and the least serious conflict domains are anywhere rather similar and thus point to a common European political culture.

These surprising insights would not have been possible without the computational turn in the social sciences. In general, the research method of virtual encounter simulations profits in three ways from this digital turn:

- a) *Increased computational power*: In the present work it was useful for reordering the original monadic data records according to random principles. The computational effort for this step increases exponentially with the sample size.
- b) *Standardised data collection* as an essential component of many international survey projects like the International Social Survey Programme (2023), the European Social Survey (2023), etc. Boero (2015, chap. 2.1.2) considers such data as a general requirement for computational social science. The use of the same questionnaires enhances the international comparability of country data and was for the present study an absolute must.
- c) *Big samples*: For virtual encounter simulations they are essential for partitioning the original data into subgroups, which can be joined in dyadic datasets. However, in this respect, the data used in this analysis were not ideal. Originally, the author wanted to compare the Swiss Arc Lémanique with the French departments in the immediate vicinity, i.e. Ain, Haute-Savoie, Jura, and Doubs. Due to the small number of interviews of the ISSP-V in the latter regions, the author had to abandon this research design and to use instead the national data of the *entire* France.

REFERENCES

- Alber, J. (1982). *Vom Armenhaus zum Wohlfahrtsstaat. (From the poorhouse to the welfare state)*. Campus.
- Boero, R. (2015). *Behavioral computational social science*. John Wiley & Sons.
- Bundesamt für Sozialversicherungen (2022). *Stabilisierung der AHV (Stabilisation of the Swiss pension insurance AHV)*. <https://www.bsv.admin.ch/bsv/de/home/sozialversicherungen/ahv/reformen-revisionen/ahv-21.html> (Accessed on February 3, 2023).
- Büchi, C. (1993). "Röstigraben" (*The cleavage of the "roasted potatoes"*). Verlag Neue Zürcher Zeitung.
- Collier, D., & Messick, R. (2014). Prerequisites versus diffusion: Testing alternative explanations of social security adoption. *APSR*. <https://www.cambridge.org/core/journals/american-political-science-review/article/abs/prerequisites-versus-diffusion-testing-alternative-explanations-of-social-security-adoption/78084CBA0661DAD7B8DC4BCD761C8188#access-block> (Accessed on February 5, 2023).
- Crow, I. (2006). Ecological fallacy. In V. Jupp (Ed.), *The Sage dictionary of social research methods* (pp. 82-83). Sage Publications.
- Data Services for the Social Sciences. (2023). <https://www.gesis.org/en/institute/departments/data-services-for-the-social-sciences> (Accessed on February 4, 2023).
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Polity Press.
- European Social Survey. (2023). <https://www.europeansocialsurvey.org> (Accessed on February 4, 2023).
- Gelissen, J. (2002). *Worlds of welfare, worlds of consent*. Brill.
- Gilbert, N., & Troitzsch, K. (1999). *Simulation for the social scientist*. Open University Press.
- Hermann, M., & Leuthold, H. (2003). *Atlas der politischen Landschaften. (Atlas of the political landscapes)*. vdf Hochschulverlag.
- International Social Survey Programme (2023). <https://issp.org> (Accessed on February 4, 2023).
- ISSP-V (2016). The role of government V. In GESIS (Ed.), *Dataset ZA-6900*. https://search.gesis.org/research_data/ZA6900 (Accessed on January 15, 2023).
- Kanji, G. (1993). *100 statistical tests*. Sage Publications.
- Kriesi, H., et al. (1996). *Le clivage linguistique. (The linguistic cleavage)*. Bundesamt für Statistik.
- Mueller, G. P. (2017). On the use of microsimulation for investigating ideological dissent: Exemplary analyses of the values of the European left. *ASK Research & Methods*, 26(1), pp. 61-80.
- Mueller, G. P. (2021). Virtual encounter simulations: A new methodology for generating conflict data. In P. Mariani & M. Zenga (Eds.), *Data science and social research II* (pp. 293-303). Springer.
- Schmid, C. (2001). *The politics of language*. Oxford University Press.
- Tönnies, F. (2005 [1887]). *Gemeinschaft und Gesellschaft (Community and society)*. Wissenschaftliche Buchgesellschaft.

Data Appendix: Table 2

Regions, region-pairs	Variables	Conflict +/- Error	Mean +/- Error	N1 / N2
Switzerland	V23	0.61 +/- .046	3.23 +/- .046	174/181
	V24	0.61 +/- .048	3.20 +/- .047	178/183
	V26	0.55 +/- .046	2.76 +/- .045	172/180
	V27	0.75 +/- .052	2.72 +/- .055	178/183
	V28	0.49 +/- .039	3.24 +/- .038	184/186
	V29	0.72 +/- .053	2.75 +/- .052	174/181
	V31	0.80 +/- .055	3.16 +/- .055	178/183
Arc Lémanique	V23	0.63 +/- .044	3.25 +/- .045	186/187
	V24	0.53 +/- .040	3.37 +/- .040	186/187
	V26	0.56 +/- .045	2.88 +/- .043	168/178
	V27	0.72 +/- .047	2.96 +/- .057	170/179
	V28	0.47 +/- .037	3.36 +/- .037	186/187
	V29	0.63 +/- .047	3.14 +/- .045	186/187
	V31	0.69 +/- .042	3.42 +/- .050	180/184
France	V23	0.66 +/- .046	3.53 +/- .046	180/184
	V24	0.60 +/- .041	3.50 +/- .041	180/184
	V26	0.82 +/- .058	2.82 +/- .058	167/177
	V27	0.92 +/- .069	3.20 +/- .070	182/185
	V28	0.65 +/- .050	3.46 +/- .047	174/181
	V29	0.77 +/- .057	3.19 +/- .054	168/178
	V31	0.66 +/- .060	3.46 +/- .057	176/182
France – Switzerland	V23	0.70 +/- .050	--	177/---
	V24	0.65 +/- .045	--	179/---
	V26	0.69 +/- .058	--	171/---
	V27	1.10 +/- .057	--	180/---
	V28	0.58 +/- .044	--	179/---
	V29	0.77 +/- .057	--	172/---
	V31	0.81 +/- .056	--	177/---
France – Arc Lémanique	V23	0.58 +/- .048	--	183/---
	V24	0.55 +/- .041	--	183/---
	V26	0.63 +/- .055	--	167/---
	V27	0.95 +/- .055	--	176/---
	V28	0.59 +/- .043	--	180/---

Table 2, Continued

Regions, region-pairs	Variables	Conflict +/- Error	Mean +/- Error	N1 / N2
	V29	0.71 +/- .048	--	177/---
	V31	0.70 +/- .055	--	178/---
Switzerl'd – Arc Lémanique	V23	0.62 +/- .047	--	180/---
	V24	0.60 +/- .044	--	182/---
	V26	0.59 +/- .049	--	171/---
	V27	0.76 +/- .060	--	174/---
	V28	0.49 +/- .039	--	185/---
	V29	0.72 +/- .052	--	180/---
	V31	0.72 +/- .057	--	179/---

Legend: N1 = Sample size of *Conflict +/- Error*. N2 = Sample size of *Mean +/- Error*. For Switzerland, Arc Lémanique, and France: Col. *Conflict* = Intra-region conflict and col. *Mean* = Region-specific mean-values of the respective variables. For the *pairs* France – Switzerland, France – Arc Lémanique, and Switzerl'd – Arc Lémanique: Col. *Conflict* = Inter-region conflict. By definition, *Mean* does not exist.

Sources: Own calculations by the author, based on ISSP-V (2016). For variable definitions and other details see section 3.