

„Mixed Methods“ in action: best and worst practices

Jörg Stolz



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Abstract

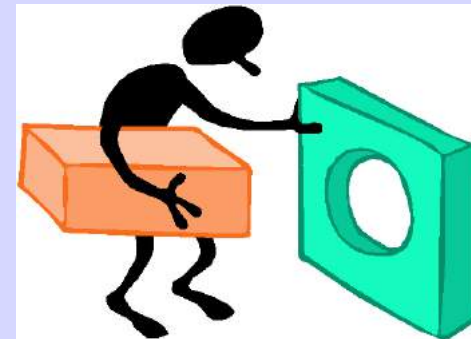
Mixed Methods, that is some sort of integration of quantitative and qualitative methods, are increasingly used in the social sciences. While mixed methods seem to be very attractive in theory, to accomplish a successful integration of various kinds of methods and data is often hard. This paper focuses on "best and worst practices" in actual mixed methods research. Using various examples, I argue that successful integration is accomplished by "parallelizing" the design, by using "one logic of inference" and by putting the most important emphasis on the research question (and not the mixing).

Outline

Introduction: the Problem

1. Priority of the (common) research question over mixing
2. A common logic of inference
3. Parallelization of the research design

Introduction: the Problem



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Why mixed methods? Validity threats in Qual and Quan



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Validity and Validity threats

- Validity = « (...) correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account » (Maxwell 2005: 106)
- Validity threat = « (...) a way you might be wrong. These threats are often conceptualized as alternative explanations, or what Huck and Sandler (1979) called « rival hypotheses. »
- Validity, as a component of your research design, consists of the strategies you use to identify and try to rule out these threats. » (Maxwell 2005: 106)

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Critique addressing Quan research

- unrealistic assumptions (e.g. value free, rational actors)
- reductionist, does not capture complexity of reality
- does not capture actors and structure; sees only variables
- cannot render justice to subjective perspectives and complex processes in their context
- cannot explore unknown structures and contexts
- not adapted to the “nature” of the social world
- not relevant

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Critique addressing Qual research

- no/not enough theory
- data collection and data analysis
 - obscure/intransparent
 - no clear population / obscure/no sampling
- results
 - cannot be intersubjectively checked
 - cannot be replicated
 - unclear generalizability
 - no representativity
 - dependent on the specific researcher
- not value-free

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Validity threats Qual/Quan (selection)

Validity threats	Quan	Qual
Explanation/Verstehen	- real causal mechanism unclear - real initial conditions unknown - subjective views of actors unknown	- no control of other variables - cannot find weak causalities - unclear strength of correlations - results not representative, cannot be generalized
Description	- unclear "reality" in life-world - unclear link to the interpretative actions of subjects in life-world	- unclear distributions of types - results not representative, cannot be generalized
Sampling	- does not know central experts	- does not know distributions of attributes (purposeful and theoretical sampling impossible)
Choice of Items	- Items do not capture the real differences in life-world of subjects	

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Central idea of „Mixed Methods“

- "incompatibility thesis" is wrong
- quantitative and qualitative methods often have non-overlapping strengths and weaknesses
- validity threats may be countered by combining the methods.
 - real causal mechanisms, initial conditions, selection rules may be identified
 - importance of findings in every day world may be judged
 - other variables may be controlled,
 - strength of correlations may be judged and weak causalities may be found
 - distribution of types may be asserted
 - quality of sampling and measurement instruments may be controlled
 - generalizability of findings may be judged

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Mixed Methods Designs and validity reasons

1. Quan → Qual (sequence) :
 - Solve a Quan-Riddle with a Qual in-depth study
 - Quan sampling plan for Qual study
2. Qual → Quan (sequence):
 - Qual results are tested statistically (Quan) (often called "qualitative pre-study")
 - Cognitive (Qual) Pretests for Quan measurement instruments
3. Qual ↔ Quan (simultaneous):
 - Triangulation of Qual-Quan results in order to get more valid/richer results (weed out Black-Box and Small-N problems)
4. Qual ↔ Qual, :
 - Quan ↔ Quan
 - Combination of two different Quan-Data types or two different Qual-data-types

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Why is mixed methods research difficult / often not very convincing?



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Difficulties

Problems of researchers

- Lack of resources
- Lack of skills
- Problem of conflicting research paradigms between collaborators
- Problem of "integrating the research"

Problems of the state of the art

- Lack of a mainstream mixed methods methodology
- Lack of "exemplars"
- Lack of criteria to judge mixed methods research

-> This paper aims at helping to develop mainstream mixed methodology

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Citation

"There is uncertainty about the circumstances in which mixed methods research should be used. This uncertainty derives from the relative absence of a fund of understanding of how mixed methods research should be done as well as from the perceived absence of exemplars.

Integration in mixed methods studies is often not achieved and is difficult to do."

(Bryman, 2008, 99)

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1. Priority of the research question over mixing



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Best and worst practices

Best practices

- Gives an absolute priority to the answering of the one research question
- Mixing methods is only a means to better answer the question / to weed out validity problems

Example: Chaves/Gorski (2001): Religious Pluralism and religious participation

Worst practices

- Gives priority to the mixing of the methods. Asks different research questions, following every method
- does mixed methods because this seems "fashionable" or "more relevant" or "more .

Example: Huber/Friedrich/Steinacker (2006) : Kirche in der Vielfalt der Lebensbezüge

2. One logic of inference



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Best and worst practices

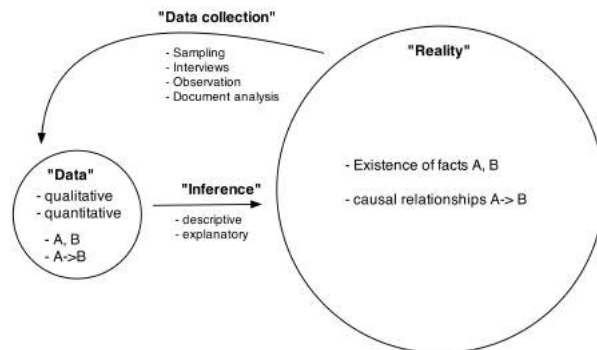
Best practices

- Posits that there is one "logic of inference" for all social science (for Qual and Quan alike)
 - uses the different data types to get at the as such "unobservable reality", thereby judging the quality of the data collection, data and inference
- Example: Schwartz/Schumann (2007) : Abraham Lincoln

Worst practices

- Uses different research paradigms / philosophical assumptions for the different methods
 - Tries to do "real quantitative research" and "real qualitative research" by making the two approaches as different as possible
- Example: xxxx

One logic of inference



One logic of inference

- All science builds one one logic of inference, independently of what methods are used – quantitative, qualitative, historical, physical etc.
- It is possible to create knowledge about the external, existing world; however, this knowledge is always uncertain.
- Scientific inquiry collects data in systematic fashion
- Using the data, we infer something about reality (that exceeds our data)
- Inference can be descriptive or explanatory. It can point to facts (existence of objects, attitudes, values, subjective constructions) or causal relationships.

One logic of inference

(...) the differences between the quantitative and qualitative traditions are only stylistic and are methodologically and substantively unimportant. All good research can be understood - indeed, is best understood - to derive from the same underlying logic of inference.

(King, Keohane, Verba, 1994, 4)

One logic of inference

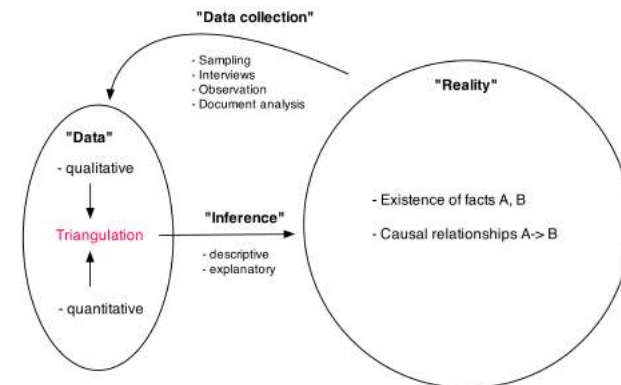
- "The goal is inference. Scientific research is designed to make descriptive or explanatory inferences on the basis of empirical information about the world. Careful descriptions of specific phenomena are often indispensable to scientific research, but the accumulation of facts alone is not sufficient. Facts can be collected (by qualitative or quantitative researchers) more or less systematically, and the former is obviously better than the latter, but our particular definition of science requires the additional step of attempting to infer beyond the immediate data to something broader that is not directly observed. »
 - That something may involve descriptive inference - using observations from the world to learn about other unobserved facts. Or that something may involve causal inference - learning about causal effects from the data observed.
- (King, Keohane, Verba, 1994, 6 ff.)

One logic of inference

- "The argument that I wish to advance begins with the claim that the methods of enquiry that are used across the natural and the social sciences alike are informed by what might loosely be called a common "logic of inference" - a logic of relating evidence and argument.
- The application of this logic presupposes that a world exists independently of our ideas about it, and that, in engaging in scientific enquiry, we aim to obtain information, or data, about this world that we can then take as a basis for inferences that extend beyond the data to hand, whether in a descriptive or an explanatory mode."

(Goldthorpe, 2000, 67)

Mixed Methods and inference



Mixed Methods and inference

By using several types of data (Quan + Qual, Quan1 + Quan2 etc.), we hope to be able to make better inferences to the unknown external reality.

Example ancient Israel



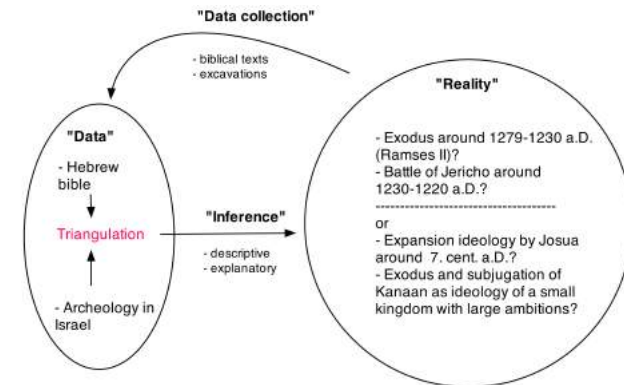
Exodus around 1279 – 1230 bc
(Pharao Ramses II)?

War at Jericho around
1230-1220?

Example ancient Israel



Example ancient Israel



3. Parallelization



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Parallelization

In a mixed methods study, parallelization is the practice of starting with

- one common central question
- one or several common theories
- one philosophical "paradigm"

and aligning

- the sampling
- the data collection

such that

- triangulation becomes easy and
- the potential of weeding out validity problems due to the non-overlapping strengths and weaknesses of the different data types is fully engaged.

Best and worst practices

Best practices

- Starts with same research question, common philosophical paradigm, aligns sampling methods and data collection in order to make triangulation possible

Example:

- Hall (1986) (Social Class and Survival on the S.S. Titanic)

Worst practices

- Starts with different central questions, different philosophical paradigms and/or uses unaligned sampling methods and data collection. (in order to do "real Quan" and "real Qual")

Example:

- Way et al (1994) (Depression and Drugs)

- Laubach (2005) (Consent, Informal Organization and Job rewards)

Examples of lacking parallelization

- Different actors or different kinds of actors are interviewed/observed with quantitative/qualitative methods (e.g. quantitative: pupils; qualitative: teachers)
- theoretical sampling is combined with random sampling
- design is different: quantitative is longitudinal, qualitative is one-shot etc....

4. Example : Religion and Spirituality in the "me-society"



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Central question

How do individuals « construct » religiosity? What types of individuals with different religiosities/spiritualities exist?

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Mixed Methods Design

Design form:

Qual-Quan (concurrent)

Through the use of quantitative and qualitative Data:

- the description of the types is becoming "thicker"
- the validity of the existence of the types is heightened

Methods / Data types:

- Standardized interviews & semi-structured interviews

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Theory/State of the art

Theory:

- no theory in a narrow sense; goal only descriptive; no causal claims

State of the art:

- very diverse; many different typologies
 - not very intuitive
 - Quan only
 - often for specific phenomena (beliefs, practices, feelings...)

Gap in the state of the art

- One intuitive, Quan+Qual typology

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Examples of existing typologies

Exclusive Christians
 Inclusive Christians
 Religious Humanists
 New Religionists
 Humanists without religion
 (Krüggeler 1993)

Member
 Member/Client
 Client
 Nominal Member
 (Dubach 1993)

Religionists
 Non-Religionists
 Heterodox Believers
 Non religious Humanists
 Irregulars
 Ritualists
 (Campiche/Bréchon 1997)

Linking the subquestions

How do individuals « construct » religiosity? What types of individuals with different religiosities/spiritualities exist?

Qual	Quan
How do individuals construct their specific religious or secular world-view and identity?	How can we describe individual religiosity on an aggregate level?
What meaning do individuals give to terms like “religion”, “spirituality”, “god”, “energy”. What meaning do they give to religious practice and belief?	How are different items including terms like “religion”, “spirituality”, “god”, “energy” correlated? What kinds of meaning clusters follow from this?
How can we build a typology on the basis of both Qual and Quan?	How can we build a typology on the basis of Quan?

Data collection

Qual	Quan
Relatively large number of semi-structured face-to-face interviews	representative survey - face-to-face interviews
- additional written questionnaire (= completing the Quan questionnaire)	
N = 73	N = 1229

Sampling

Quan	Qual
Population: individuals living in Switzerland, age: 18+	Population: individuals living in Switzerland, 18+, Christian or without religion
Stratified random-sampling	Random-quota sampling
Stratification: - large regions	Quota: - language region - sex - age - urban-rural
Response rate: 46.6%	Response rate : ?
N = 1229	N = 73

	Quan	%	Qual	%
German speaking	861	70.1	31	43.1
French speaking	338	27.5	35	48.6
Italian speaking	13	1.0	6	8.2
urban	488	39.7	36	49.3
rural	505	41.1	37	50.7
male	558	45.4	35	47.9
female	671	54.6	38	52.1
-20	62	5.1	4	5.5
21-30	129	10.5	6	8.2
31-40	225	18.3	19	26.0
41-50	272	22.1	13	17.8
51-60	209	17.0	13	17.8
61+	332	27.1	18	24.7
Roman-Catholic	382	31.1	32	43.8
Evangelical-reformed	394	32.0	18	24.7
Evangelical-free church	20	1.6	5	6.8
Without religion	305	24.8	18	24.7
Others	129	10.5	0	0.0
Total	1229	100%	73	100%

Comparison Samples

	Quan	%	Qual	%
Institutional	185	16.5	16	21.9
Alternative	94	8.4	10	13.7
Distant	109	65.5	38	52.1
Secular	735	9.7	9	12.3
Missing	106			
Total	1229	100%	73	100%

Comparison Samples

Operationalization

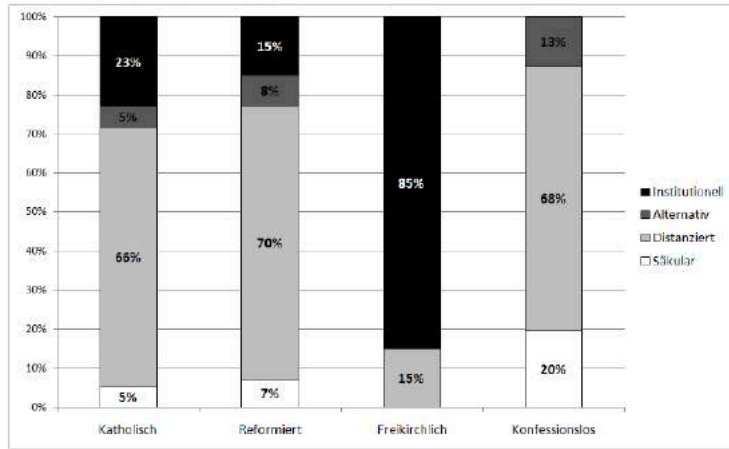
Quan	Qual
How often do you go to church? - Several times a week - Once a week - 2-3 times a month - once a month - several times a year - rarely - never - don't know	What would you say: Do you practice religiously? <i>Probes:</i> - What do you do? - How often? - On your own / in a group? - What meaning does this have in your life?
How often do you pray? - response options	
etc...	

Mixed data analysis: describing typologies

	Belief in God	Prayer	Values
Institutional	Barbara: Gott hat die "Fäden in der Hand". Gott ist Liebe und wer in ihm ist, der ist / der kann auch weiterleben oder äh (4) ein Stück weit ist Gott auch der Herrscher (8) und Gott, der segnet	Barbara:	Barbara:
Alternative	Béatrice Gott ist nicht ein strafender Gott, sondern "quelqu'un de très simple", "qui nous écoute", "à qui on peut tout dire", "qui pardonne tout", "qui accepte tout". Es ist eine "relation d' confiance absolue". Es ist "quelqu'un de très simple". Sie duzt ihn. Hier ist Gott eher wie ein Psychoanalytiker.	Béatrice:	Béatrice:
Distant			
Secular			

Mixed Data Analysis: Describing Typologies

Grafik 7: Die Religiositätsprofile nach Konfession



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Tabelle 1: Zuordnung der der Interviewten (Pseudonyme) zu den vier religiösen Profilen⁵

Institutionell (21%)	1. Barbara, 58, ev.-ref.	9. Nathalie, 41, röm.-kath.
	2. Barnabé, 56, freikirchl.	10. François, 55, ev.-ref.
	3. Beat, 18, ev.-ref.	11. Katherine, 61, röm.-kath.
	4. Béatrice, 44, röm.-kath.	12. Mima, 59, röm.-kath.
	5. Bénédicte, 53, freikirchl.	13. Marc-Antoine, 63, röm.-kath.
	6. Berta-Lisa, 62, röm.-kath.	14. Stephan, 45, röm.-kath.
	7. Danuèle, 46, röm.-kath.	15. Victor, 55, röm.-kath.
	8. Dorothée, 32, freikirchl.	16. Willi, 40, freikirchl.
Alternativ (13%)	17. Argela, 37, röm.-kath.	22. Klaus, 62, konfessionslos
	18. David, 34, konfessionslos	23. Michel, 63, konfessionslos
	19. Eliot, 44, konfessionslos	24. Mona, 48, konfessionslos
	20. Emily, 62, röm.-kath.	25. Simon, 50, konfessionslos
	21. Félicia, 55, freikirchl.	26. Wilma, 47, ev.-ref.
	27. Beryl, 64, röm.-kath.	46. Léa, 36, konfessionslos
	28. Bettina, 40, röm.-kath.	47. Livia, 38, ev.-ref.
	29. Blaudine, 63, röm.-kath.	48. Lucia, 44, röm.-kath.
Distanziert (52%)	30. Claude, 39, ev.-ref.	49. Maia, 19, ev.-ref.
	31. Deborah, 41, ev.-ref.	50. Marcel, 64, ev.-ref.
	32. Diane, 37, röm.-kath.	51. Markus, 18, konfessionslos
	33. Elina, 25, röm.-kath.	52. Maude, 50, röm.-kath.
	34. Ernesto, 68, konfessionslos	53. Mélanie, 33, röm.-kath.
	35. Ferdinand, 25, ev.-ref.	54. Nadia, 37, ev.-ref.
	36. Gisèle, 63, röm.-kath.	55. Niklaus, 47, ev.-ref.
	37. Guzava, 30, konfessionslos	56. Nils, 18, konfessionslos
	38. Ingolf, 51, ev.-ref.	57. Norbert, 70, röm.-kath.
	39. Jeleva, 21, röm.-kath.	58. Olga, 38, röm.-kath.
	40. Juan, 65, röm.-kath.	59. Qasim, 38, ev.-ref.
	41. Julie, 24, röm.-kath.	60. Quentin, 50, ev.-ref.
	42. Kaitline, 63, röm.-kath.	61. Rebecca, 45, röm.-kath.
	43. Karine, 68, konfessionslos	62. Renate, 51, röm.-kath.
	44. Karol, 64, röm.-kath.	63. Renato, 41, röm.-kath.
	45. Laurence, 40, röm.-kath.	64. Vanessa, 41, ev.-ref.
Säkular (12%)	65. Cécile, 38, ev.-ref.	70. Nicolas, 36, konfessionslos
	66. Daniela, 24, ev.-ref.	71. Peter, 65, konfessionslos
	67. Erich, 40, konfessionslos	72. Sigfried, 39, konfessionslos
	68. Fabio, 57, röm.-kath.	73. Stan, 27, konfessionslos
	69. Gregory, 70, konfessionslos	

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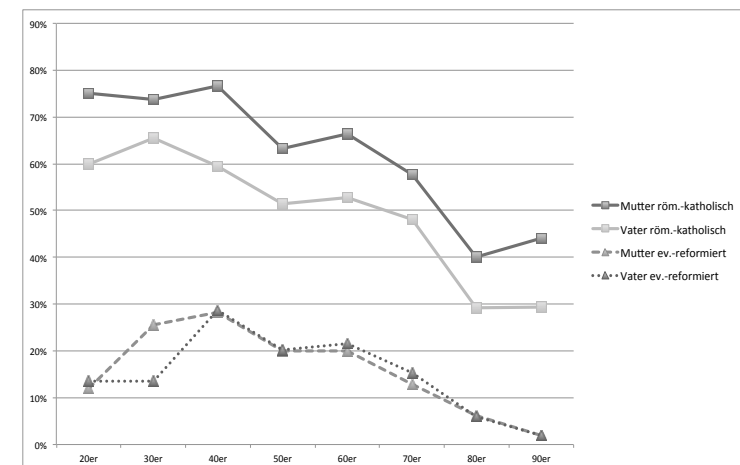
Mixed Data Analysis: Describing Typologies

Mixed data analysis: "explaining co-variance"

	18-30	31-40	41-50
Women	Barbara: xxxx Béatrice xxxx	Barbara: Béatrice:	Barbara: Béatrice:
Men	Eliot: Willi:	Eliot: Willi:	

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Mixed data analysis: "explaining co-variance"



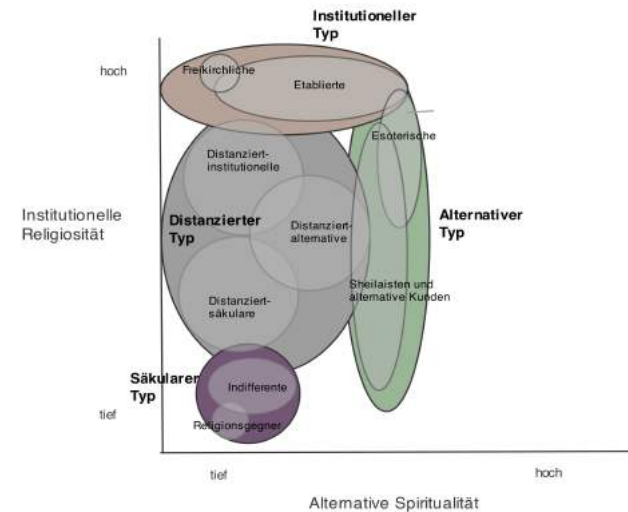
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Data analysis : iteratively

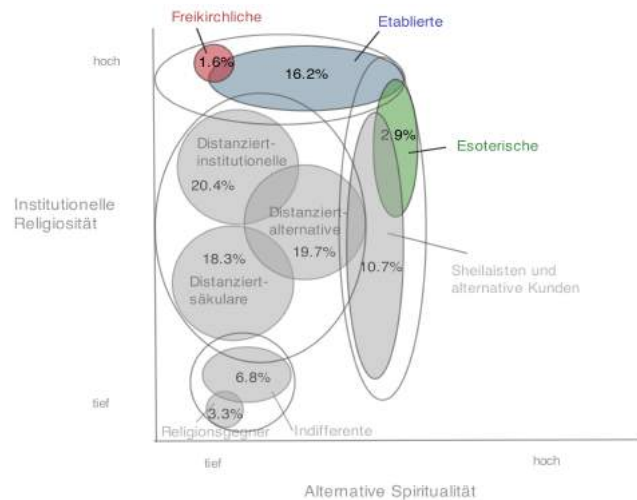
Quan	Qual
Cluster analysis	Coding, Category-building

Iterative procedure between cluster analysis and qualitative category building.

Results



Results



Writing up

Institutionelle

Institutionelle sind Personen, denen christlicher Glaube und christliche Praxis im eigenen Leben viel bedeuten. Auf den kürzesten Nenner gebracht: es handelt sich um die Mitglieder der katholischen und reformierten "Kerngemeinden" sowie um die grosse Mehrheit der Mitglieder evangelischer Freikirchen. Institutionelle *glauben* sehr häufig an einen einzigen, persönlichen und überweltlichen Gott, der sich für jeden Menschen individuell interessiert. Sie sind überzeugt, dass das Leben nur durch Gott und Jesus Christus einen Sinn hat. Viele messen den Inhalten des christlichen Glaubens eine grosse Bedeutung zu. Vor allem säkulare oder atheistische Glaubensüberzeugungen werden von Institutionellen sehr kritisch gesehen. Alternativ-spirituelle Überzeugungen werden von einem Teil der Institutionellen (vor allem den Evangelikalen) vehement abgelehnt. Andere, eher progressive, Institutionelle können mit alternativer Spiritualität jedoch durchaus etwas anfangen. Institutionelle weisen eine ausgeprägte *religiöse Praxis* auf, welche im Zusammenhang mit dem Angebot der Kirchen und ihrer Kerngemeinden steht. Unten den Institutionellen gehen 51.3% wöchentlich oder fast wöchentlich zum Gottesdienst, 67.3% beten täglich. 33.4% nehmen monatlich an anderen religiös-kirchlichen Aktivitäten teil.

Writing up

Zwei Beispiele:

- Willi (41) Mitglied einer Freikirche, hat sich im Alter von 16 Jahren bekehrt. Sein ganzes Leben ist sehr stark durch seinen Glauben geprägt. Willi "*glaubt an Jesus Christus, Gott und den Heiligen Geist, die Trinität*". Das Ziel des Lebens ist für ihn „*eigentlich das ewige Leben, also wenn man fertig ist da auf der Welt, dass man dann einmal ins Gottesreich kommt*". Für Willi ist Religion eine Leitplanke, die das Leben entlang von Werten wie Loyalität und Ehrlichkeit führt. Willi liest jeden morgen in der Bibel und betet eine Viertelstunde. Er geht jeden Sonntag und manchmal auch freitags mit seiner Familie zum Gottesdienst. In seiner Gemeinde ist er als Sonntagsschullehrer und Animator einer Jugendgruppe stark engagiert.
- Nathalie (41), Katholikin, ist in ihrer Kirche sehr engagiert. Sie ist Koordinatorin der Katechese. Sie beteiligt sich aktiv in der Gestaltung der Messe und bezieht die Eltern in die religiöse Erziehung ihrer Kinder mit ein. Sie glaubt nicht an einen strafenden Gott, sondern an einen Gott der Liebe, welcher in jedem Menschen wohnt. Es handelt sich nicht um "*un Dieu kleenex, je le prends quand j'ai besoin et je le jette ensuite*". Daher versucht sie "*de l'aimer dans tout ce que je fais, dans tout ce que je suis, dans mes hauts et mes bas*". Nathalie geht regelmässig zur Messe, weil sie dazu Lust hat und dies „braucht“. (Stolz et al. 2011)

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Validity checking

- Comparison of Quan (1229) and Qual sample; checking of „representativity“ of Qual-Sample compared to Quan-Sample
- Typology works well in both samples and both in Qual and Quan
- Distribution of types in population can be investigated
- Individual cases of types can be looked at in their context
- Typology can be looked at in Qual sample; non-fitting cases can be inspected
- Comparison of answers of 73 Qual interviewees to both Quan and Qual, so that „contradictions“ may be inspected and analyzed

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Mixed Methods