Joachim Blatter, University of Lucerne

Joachim.blatter@unilu.ch

Aligning Methodologies to Epistemologies and Ontologies in Qualitative Research: An Ideal-Typical Approach

Important Remarks:

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The comments of the editors of QMMR helped me to present the preliminary thoughts of this conference paper in a much more consistent way. Often, I made major revisions. So, please turn to more mature QMMR publication when interested in the major insights of this paper. For the publication in QMMR, the original manuscript had to be cut down to one third of its original length. **Three parts** of this conference manuscript are **still valuable** in complementing the QMMR publication:

1. Section 2 where I lay out in much more detail than in the QMMR publication the specifics of four (out of six) ideal-typical qualitative methods.
2. Table 2c (p. 34) which complements the tables 2a and 2b of the QMMR publication in scrutinizing the methods of data creation and data analysis of all six ideal-typical qualitative methods.
3. Section 4 where I apply the insights of the typology in order to:
   a) identify two variants of Configurational Comparative Analysis (section 4.1), and
   b) disentangle the use of logic, language and Bayesianism in various methods of within-case analysis (section 4.2).

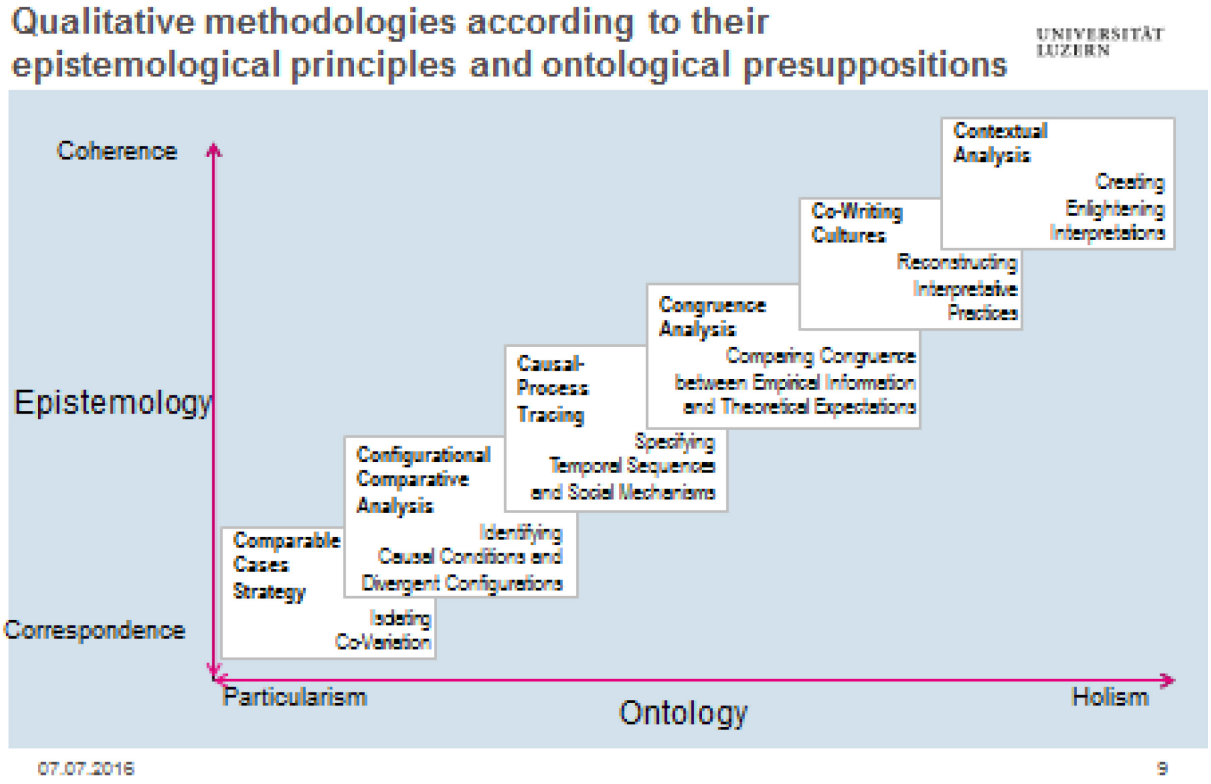
1. Introduction and Overview

Peter Hall's plea to "align methodology to ontology" (Hall 2003) has been one of the rallying cries that stimulated the recent explosion of methodological reflections on and innovations in qualitative research in Political Science and its neighboring disciplines. Since that time, we have witnessed an unprecedented amount of books and articles in this field, accompanied by the establishment of specific sections within political science associations, newsletters, summer schools and professor positions dedicated to qualitative methods. It seems time now, to provide some orientation for the bewildering array of qualitative methodologies and methods. This is certainly not the first attempt to do so (e.g. Goertz and Mahoney 2012, Koivu and Damman 2015), Nevertheless, the overview that is laid out in this article has a much deeper foundation and it provides an orientation that is broader and at the same time internally more differentiated than existing ones. It aims at a categorization and description of distinct methodologies by consistently aligning them to epistemological purposes and principles as well as to ontological presumptions. A first sketch of this overview has already been used in order to select and locate major works for currently appearing SAGE compendium on "Qualitative Research in Political Science" (Blatter, Haverland, van Hulst 2016). In this paper, I start to develop the foundations of the overview and present the description of four of the six ideal-typical methodologies more thoroughly.

In the first part of the article, I introduce the core terminology that I apply for defining and describing methodologies which are both, externally embedded in coherent research designs and internally consistent in respect to methods of data creation and data analysis. For a coherent embedding of methodologies in more fundamental aspects of social science research, I develop a two-dimensional space whereby the first dimension is concerned with epistemology and the second one deals with ontology. The epistemological dimension contains the following three components: research goals, types of aspired knowledge, and quality criteria; the ontological dimension entails the following three components: level of analysis, level of social constructedness, and the understanding of causation. Each dimension and each component is characterized by the fact that the „negative pole" of a concept (Goertz 2006: 30-33) is not just the negation of the positive pole, but a substantially distinct alternative (e.g. epistemology: correspondence versus coherence; ontology: elementarism versus holism). Second, I turn inwards and describe the two kinds of techniques that are included in each methodology: methods of data creation and methods of data analysis. Finally, I lay out what we mean when we describe methodologies as ideal-types: ideal-typical methodologies are deductively created configurations which can be used for descriptions/comparisons, but also for prescriptions/evaluations. A methodology is an ideal-typical one if it contains an internally consistent combinations of methods of data creation and data analysis, and if it is coherently embedded in a research design, which consists of a coherent combination of epistemological purposes and principles as well as ontological presumptions.

In the second part of the article, I locate qualitative methodologies in those places of the developed two-dimensional space where they belong to from an ideal-typical point of view. A methodology that is coherently embedded in the wider epistemological and ontological field and that is consistent in its internal techniques, (a) aims at a specific kind of knowledge guided by the corresponding research question and the principles or quality criteria for good social science; (b) it is based on specific presuppositions about the social world with the corresponding understanding of causality; and (c) such a methodology contains concrete methods of data creation and the corresponding methods of data analysis.

Based on such an approach, I differentiate, locate and describe six ideal-types of qualitative methodology: Comparable Cases Strategy (CCS), Configurational Comparative Analysis (CCA), Causal-Process Tracing (CPT), Congruence Analysis (CON), Co-Writing Culture and (Con)Textual Analysis (see figure 1). For the first four of those methodologies, I scrutinize the most consistent (a) research goals, aspired types of knowledge/explanation[1] and quality criteria, (b) levels of analysis, levels of social constructedness and understandings of causality, as well as (c) techniques of data collection/creation and methods of data analysis/interpretation.[2]



In the final sections of this article, I provide summary tables and indicate the usefulness of this overview. We show that the overview provides a conceptual map for tracing the various directions in which two important approaches have been developing during the last few years: the various cross-case analytic techniques which have been developed in the wake of what Ragin called "Qualitative Comparative Analysis" and the various methodologies and methods of within-case analysis which are often and misleadingly lumped together under the term "process tracing".

[1] Knowledge is the more encompassing term, but we will focus in the rest of the article on one specific kind of knowledge: explanation – albeit with a very broad understanding of the term. The reason is that I do not want to overcrowd the paper even more. But I would like to mention that I fully agree with Gerring (2012) that systematic and reflective forms of "description," "comparison," and "evaluation" are at least as important goals of social science research.

[2] Due to time and space restrictions, the corresponding features of the other two methodologies are presented only in a preliminary form in the summary tables later on.

1. Terminology

In the first part of the article, I specify the terminology that is used afterwards. I would like to stress one important aspect right from the beginning: This overview is very much inspired by a broad reading of existing work on qualitative methodology within and beyond Political Science. Nevertheless, the chosen terms, the definition of these terms, and the corresponding characterization of ideal-types are primarily geared towards internal consistency and overall coherence (thereby taking into account both, logic and language) and not by attempting to correspond to the existing literature. For example, I use the term "co-writing cultures" primarily because I think that it captures the characteristics of the scrutinized ideal-type best. Furthermore, I selected this term because it refers to an important contribution in the literature - in this case to Clifford and Macrus' "Writing Culture" (1986). Nevertheless, I would like to remind the reader that many other contributions which are close to our ideal-type might have used other labels. In other words, when I label and describe the methodologies I try to combine "coherence" and "correspondence" - but, if in doubt, I prioritize internal (logical) consistency and overall (linguistic) coherence. Such a stance makes the overview a useful tool for describing and evaluating those descriptions and applications of methodologies that we find in the literature.

Furthermore, I use core expressions like "explanation", "causation", "data creation", and "data analysis" as **umbrella terms.** This means that "interpretation/understanding" is seen as a specific type of explanation and "constitution/construction" as a specific type of causation (contrary to Wendt 1998 and in line with Elster 2007 and Kurki 2006, 2008). Furthermore, I will show that even when methodologists write about "data collection" it always involves an element of "data creation". Finally, I perceive "interpretation" as a specific kind of "analysis." In interpretative analysis, conclusions about the meaning of observations are developed with the help of the associative techniques that we apply when we use our language (reflected on within linguistics). In contrast, in classic analytical approaches, inferences from observables to un-observables are drawn on the basis of formal logic (developed within mathematics).

I consequence, I do **not** perceive the opposite terms as **incommensurable alternatives**. Instead, the two terms represent conceptual poles which lay out the conceptual field and allow for specific combinations in-between these poles. Furthermore, one of the two conceptual poles is also used as umbrella term. This handling of terminology signals one of the core messages of this paper: "science" and "art/humanities" are not dichotomous or mutually exclusive concepts. This insight opens up the door for methodologies in the social sciences that are characterized by two features that can be best expressed in set-theoretical terms: a) those methodologies are **neither "fully in" nor "fully out"** in respect to categorizations like "science" and "art"; b) they represent those **combinations** that are functionally adequate for those research goals which lie in-between pure science and pure art.

In consequence, I **neither** support a methodological **dualism** that presumes an incommensurability between explanation/causation and understanding/constitution nor monistic, unified/uniform understandings of explanation and causation (Gerring 2005, Mahoney 2008). This stance can be explained by the fact that the author of this paper does not only teach methods but also positive and normative theories. Furthermore, it will be justified later on by pointing to alternative possibilities of how empirical research can contribute to the **cumulation of knowledge.**

1.1 Epistemologies: Truth-seeking and neutrality versus sense-making and positionality

An established understanding of epistemology defines it as "a view and justification for what can be regarded as knowledge – what can be known, and what criteria such knowledge must satisfy in order to called knowledge rather than belief" (Blaikie 1993: 7). Such a definition tends to lead to fundamental disputes about what we can know in the social sciences given the fact that social scientists are part of their field of study. In line with our **pragmatic view** on epistemology, I formulate the definition slightly different: Epistemology refers to the procedural principles for gaining knowledge, laid out in quality criteria (c), given a specific understanding of what knowledge is/of what kind of knowledge we are striving for (b), and this understanding of knowledge depends on what we want to know, in other words: on our research goal (a). Logically, (a) leads to (b), and (b) leads to (c).

If we base our definition of epistemology on such a pragmatic approach, we discover **three** main **components** which are necessary in order to specify an epistemological position: a) the research goal expressed in a precise research question and translated into a corresponding research design, b) the type of knowledge/explanation that we aspire in order to answer the research question, and c) the principles and procedures that guide the process of acquiring this kind of knowledge and the corresponding criteria for evaluating the quality of concrete research projects.

1.1.1 What is the goal of the research project? Truth-seeking versus sense-making

The social sciences, but especially those social scientists who pretend to do "qualitative" research find themselves located between the hard/natural sciences and the arts/humanities. Therefore, it seems appropriate to define the conceptual poles for research goals in the social science with the two goals that dominate in the natural sciences on the one side and in the humanities on the other side.

Accordingly, the first goal that social scientists can strive for is **"truth-seeking"** - which means that they develop and test complexity-reducing (hypo-)theses and models which correspond to the main features of an external world. Prototypical research questions are: Does/has X make/made a difference? What combination of conditions/mechanisms make/made Y possible? The alternative goal is **"sense-making"** - implying that social scientists develop and apply complexity-reducing paradigms and theories which provide meaningful and convincing interpretations of the world. Here, prototypical research questions read like the following: Which interpretations of a political processes and events are shared among which political communities? Which underlying structures shape the perceptions of actors and the processes of their interaction in a specific political system? Which theoretical lenses provide better understandings and explanations of political processes and results?

1.1.2 What is an explanation? Confirmed thesis/model versus convincing theory/paradigm

In the social sciences, there are very different understandings of what a (good) explanation is. These understandings can be distinguished according to their location in a two-dimensional space: the first dimension refers to the level of abstractness and the second dimension to the level of generality. Since Collier and Mahon's (1993) path-breaking work on concept building, we know that Sartori's (1970) "ladder of abstraction" was a misnomer, because abstraction and generalization are not the same thing and Sartori was primarily concerned with the problems of generalization.

The opposite of **"abstraction" is "concretization"**, whereas the opposite of **"generalization" is "specification."** The difference between abstract concepts and concrete concepts is a difference-in-kind. In contrast, the difference between general and specific concepts is a difference-in-degree.

The dichotomy between abstract and concrete concepts shows up in the **distinct procedures** through which these two kinds of **concepts are defined**: Abstract concepts are defined through a reflection on the relationships that the concept has to other abstract concepts. The attributes that we select for characterizing our abstract concept have to be justified with reference to the theoretical discourse. Concrete concepts, in contrast, are defined through the assignment of indicators which refer to observations. The categorical difference between abstract and concrete concepts shows up, once again, in how the **"negative pole"** of the concept is defined. For an abstract concept, the negative pole must be defined through a substantial alternative concept (e.g. "monarchy" or "autocracy" for the concept of "democracy"; see Goertz 2006: 32). For a concrete concept, the negative pole consists either as the negation or the non-existence of the concepts ("non-democracies" or "zero extension"). In consequence, it makes a huge difference whether concepts and their attributes are determined through an intensive reflection on their standing und understanding in the theoretical discourse or whether they are characterized through a pragmatic process of linking them to a set of indicators (e.g. existing data sets).

When we reflect about the **level of generality** of a concept, we are not concerned with the way we derive the defining characteristics of an (abstract or concrete) concept. Instead, we reflect on the relationship between the set of characteristics or attributes that define a concept ("category" in Collier and Mahon's terminology) and the set of entities in the world to which the concept refers to (Collier and Mahon 1993: 846). The former is called the **"intension"** of a concept/category, the latter the **"extension."** The most important insight of Collier and Mahon is that only in classical systems of categorization a higher intension (a more specified concept) leads to a lower extension (less entities that correspond to the concept). If we use family resemblance or radial categories (systems of categorization in which some attributes are possible but not necessary attributes of a category), there is no logical trade-off anymore between intension and extension. This means that the extension of a category that is located on a lower level of generality may exceed that of a category that is located on a higher level of generality (Collier and Mahon 1993: 850). This is because in these systems of categorization, going down the ladder of generality means to select a specific configuration of a larger set of possible attributes which characterize a concept.

Blatter and Haverland (2014: 158) have clarified this further when they describe the difference between a "paradigm" - which lies on a very high level of generality - and a "theory" - which is located on a lower level of generality as follows. For a meta-theory on a higher level of generality (= paradigm), the relations among the constituting concepts are the following:

Paradigm (P) = CC * [PC a + PC b + PC c + PC d + PC e][3]

In words: a paradigm is characterized by the core concept and the full set of potential peripheral concepts. Whereas the core concept is a necessary condition for characterizing a specific paradigm, individual peripheral concepts are not.

[3] "CC" = core concept; "PC" = peripheral concept. Furthermore, in line with Boolean Algebra "*" has to be read as "and", whereas "+" means "or". The set [a, b, c, d, e] refers to the content of the peripheral concepts.

For a theory, in contrast, the relations among the concepts are the following:
Theory (T) = CC * PC a * PC b.

In words: a theory is characterized by a core concept and a selected set of peripheral concepts. In a fully specified theory, all selected concepts have the status of necessary conditions.

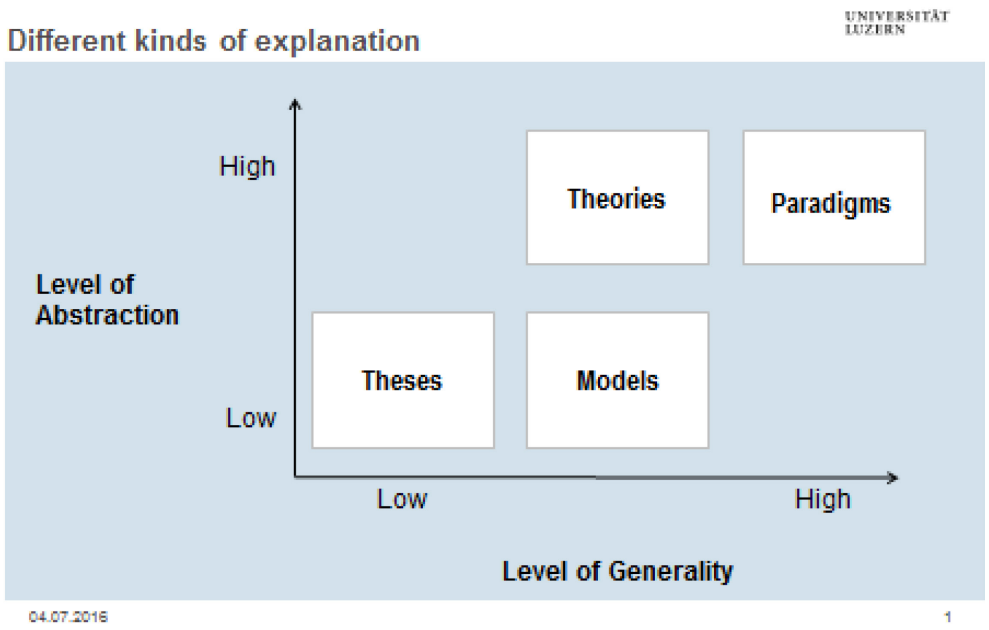
Such a conceptualization of the relationship between paradigms and theories can be illustrated with the work of Schimmelfennig (2003). He specifies three different rationalist explanations to explain the Eastern enlargement of NATO and the EU by complementing the core concept (rational decision-making of state actors) with three different peripheral concepts that contain distinct goals that the actors can strive for: a) security, b) power, and c) welfare. The Rational Choice paradigm lies on a higher level of generalization that each specific theory because it has a larger extension (more empirical entities that correspond to it) than each theory, but it also has a larger intension since it contains more concepts than each theory. But the "coupling" between the concepts is not as tight as it is in theories, since they are not seen as necessary conditions.

In consequence, we might **redefine what "intension"** means for non-classic systems of categorization, respectively for non-classic approaches to concept and theory formation: A language-sensitive definition of "intension" would not refer to the number of attributes (or concepts) that characterize a concept (or a theory), but to the intensity by which these attributes or concepts are linked to each other. If we accept this definition of intension we end up also for the non-classic systems of categorization with the intuitive insight that a higher level of intensity leads to a lower level of extensity. But the meaning of this insight would be very different in comparison to the currently dominant understanding which is still in line with the writings of Sartori!

Until now, we have clarified the difference between abstraction and generalization. Furthermore, we pointed to the categorical differences between abstract and concrete concepts, and introduced non-classic forms of categorization, which lead to a much better understanding of the relationship between paradigms and theories than the classic approaches to concept formation. In the following, we build on these insights and turn towards a systematic **mapping of the different types of explanation** to which different strands of research strive for (see figure 2).

Two types of explanations that social scientists are striving for are characterized by the fact that they are quite consequent/radical in respect to their level generality (high or low) and they combine this in a corresponding way to their level of abstraction (low/low and high/high): On one hand side, there are single propositions about the specific effect of a concrete cause, which turn from hypothetical claims into generally accepted **theses** if they are corroborated by empirical tests. Concrete hypotheses can be deduced from more abstract theories, but they do not have to; quite often, they are (seen as) nothing more than unproven claims. In order to test the causal claim that a hypothesis includes, the independent and the dependent variable must be clearly and distinctively specified and they must be operationalized (concretized) by observable indicators. On the other hand, there are abstract **paradigms**, which aspire to make sense and provide orientation for many instances of social entities and for many facets of the social world (for paradigms, there exist no boundaries of the population of cases to which they refer to). They are characterized by core concepts and a large set of peripheral concepts, whereby both the core concepts and the peripheral concepts remain on an abstract level, so that it needs a lot of interpretative work in order to connect empirical observations with these abstract concepts.

Figure 2 : Different kinds of explanation



For an understanding of the difference between the other two types of explanations (theories, models), it is helpful to perceive them as less radical siblings of theses and paradigms. Like hypotheses, **models** are located on a concrete level, but they are not as narrowly specified: they take a broader set of causal factors into account for explaining the outcome. This in contrast to when we want to test a hypothesis; there, we try to control for most factors and to focus on one single independent variable and one dependent variable. A model can be a statistical model (Dependent Variable Y = a*Independent Variable X1 + b*X2 + c*X3 + error)[4], a set-theoretical model (Outcome = Condition A * B + C * D), a causal chain (Precondition A -> Precondition B -> Precondition C -> Outcome) or a multi-level model of a causal mechanism (Causal Mechanism = Situational Mechanism * Action-formation Mechanism * Transformational Mechanism). Crucially important - and the main difference to a theory - is the fact that models are integrated on an empirical level. A good model has a good "fit" to the empirical data. The various elements of the model do not have to be conceptually consistent in the sense of belonging to a single worldview.

Such a conceptual coherence is exactly what characterizes a theory in contrast to a model. As we have laid out before, a **theory** is a specified paradigm in the sense that it combines a selection of one or a few peripheral concepts with the core concept of the paradigm and specifies the status of the selected peripheral concepts as necessary conditions for the theory (Theory = Core Concept * Peripheral Concept a * Peripheral Concept b). This means that a theory is located on a lower (medium) level of generality, but it remains abstract in the sense that its conceptual elements are derived first and foremost by discussing their relationship to other abstract concepts and not by references to (existing) indicators. Crucially important for an adequate understanding of the kind of explanation that a theory provides is that the conceptual elements of a theory form a coherent whole through their belonging to a common worldview. Elements are only included if they conceptually fit to the other elements of the theory, it is not enough if they enhance the fit to the empirical data.

[4] Note that equations which represent statistical models do not use Boolean Algebra as the other models do.

1.1.3 What are the principles and quality criteria for research procedures? neutrality/replicability versus positionality/reflexivity

When it comes to quality criteria which indicate the underlying principles for research procedures it is productive to stick to the two most established criteria, although many qualitative methodologists claim that they are not adequate for qualitative research: validity and reliability. We will have to conceptualize these two quality criteria differently for distinct methodologies, but the two criteria point us to the most important questions for judging our process of knowledge creation (do we study/explain what we claim to study/explain? can we trust the results?) and they stimulate us to think about functional equivalents for each methodology.

Understandings of Validity

There exists a bewildering array of different understandings of the concept of validity (e.g. Drost 2011). We start with what Adcock and Collier (2001) have laid out, but expand their approach in order to include those meanings of validity that do not rely on formal logic. For a comprehensive understanding of validity, it makes sense to distinguish:

a. whether we are concerned with the validity of **descriptions** OR with the validity of **explanations**, and
b. whether we are concerned with the validity of concepts and conclusions for the **cases we studied** OR whether we are concerned with the question whether concepts and results are valid **beyond the studied cases**. This distinction is often labelled "internal" versus "external" validity, whereby external validity overlaps with reflection on the "generalization" of findings.

When we combine the two dimensions, we get four understandings of validity (see table 1). But the main message of table 1 is that these four kinds of validity are getting specified quite differently within different methodologies. For each understanding of validity we can detect two distinct pathways for pursuing the corresponding task of validation.

Table 1: Different kinds of validity and their distinct specifications

	Description	**Explanation**
Results are valid for the cases under study	Valid **Concretization**: Selecting **convergent** OR **complementary** indicators	Valid **Conclusion**: Linking abstract relationships to concrete observations through **inference** OR **interpretation**
Results are valid beyond the cases under study	Valid **Specification**: Justifying attributes by referring to **content** OR **context**	Valid **Generalization**: Presuming **causal** OR **constitutive** scope conditions

We present the four kinds of validity in line with the usual proceeding in a research process: starting with the specification of the concepts, proceeding over the concretization of these concepts to the conclusion that we derive about the relationships between the concepts for the cases that we studied, and ending with reflections on potential wider generalizations of these findings beyond these cases.

The validity of the **specification** of a concept depends on the extensity and/or consistency by which we justify the assignment of specific attributes by relating the selected concept to other concepts within the scientific discourse. Sometimes this procedure is presented as involving two steps: First, a "systematized concept" is derived from a "background concept;" the selection of a specific meaning from the universe of possible meanings is justified with the specific goals or purposes of the research project (Adcock and Collier 2001: 531). Second, indicators are selected which "represent the universe of content entailed in the systematized concept" (Adcock and Collier 2001: 537). This approach is in line with what Adcock (2005) calls the classic approach to concept formation. I would call it the **logic-focused approach**. Independent of how we call it, crucially important is the fact that this approach inhibits strong features of elementarism: the purpose of the individual researcher is decisive for the first step, and the elements of the concept are determined through an internal inspection of the concept. An approach that I call - in line with Adcock - **language-focused**, in contrast, is holistic and emphasizes the intersubjective construction of meaningful concepts. In consequence, the specification of a concept involves a reflection on the position and the role of a concept (it's linguistic signifier) in the scientific discourse. The internal characteristics of the concept are not determined by selecting the best observable representative of a homogeneous concept but identified by reflecting on the (categorical and consequential) relationships of the concept to other abstract concepts.

Whether the **concretization** (often called operationalization) of a concept is valid depends primarily on whether we have selected the correct indicators. The most important test for answering this question is whether the scores produced by an indicator are empirically associated with scores of other (direct) measures of the concept. This kind of validity is often called "criterion validity" and the procedure is labeled "**convergent** validation" (Adcock and Collier 2001: 537-542). Nevertheless, Gary Goertz (2006: 14/15 and 62-65) has made us aware of the fact that the scores of indicators should converge only if we follow quantitative reasoning and perceive indicators as consequences of our concept (called latent variable in quantitative research). If we perceive the relationship between indicator and concept not as causal but as functional or constitutive, divergent indicators do not have to produce converging results because they are perceived **complementary** options for making the concept possible.

The validity of the explanations that we derive for the cases we study depends primarily on whether the **conclusions** that we draw from observations/signs to unobservable relationships between our concepts are consistent from the viewpoint of formal logic or whether they are coherent in the sense that they are convincingly justified (explicitly, with means with the help of language). The former is denoted by the term **"inference"**, the latter by the term **"interpretation"** - further specifications on these terms are presented at other places in this text.

The validity of the **generalizing** conclusions that we draw from our results beyond the studied cases depends on the adequacy of presumptions on which each methodology relies on. Once again, we can detect different procedures for strengthening what is also called external validity. **Construct validation** refers to procedures which start with the **presumption** that **specific causal relationships exist** (Adcock and Collier 2001: 542/543). For example, the comparable cases strategy depends strongly on presumptions about other factors (beyond the factor of interest) that might influence the dependent variable. Not only the validity of the conclusions for the cases under study crucially depend on the correct identification of so-called "control variables," but also the generalizing conclusions which we draw on the

population of similar/comparable cases are only valid if these control-variables are the (most) relevant "scope conditions" for the working of the identified causal effect. In order to highlight the functional equivalency, and in line with our valuation of linguistic coherence, we call the principled alternative to construct validity **"construction validity."** Like the former, the latter depends on a presumption of relationships between the scope conditions and our outcome of interest. Whereas the former presumes causal relationships in a narrow sense, the latter is based on the assumption that specific material or ideational structures are scope conditions that have a **constitutive** effect on the social actions and processes. Both, the construct validity and the construction validity of generalizations depend on how much their specific presumptions are well established in the scientific discourse.

Overall, we can detect two principled alternative approaches to validation: The first one tries to make sure that we describe and explain what we want to by relying on formal logic. Principles of formal logic are "objective" and not depending on the standpoint of the applicant. In consequence, and in line with the goal to seek the "truth", the first approach to validity refers to the **goal of "objectivity" and prescribes "neutrality"** for the researcher. The second approach tries to secure adequate descriptions and explanations with the help of the associative faculties that language offers. Those associations depend on the standpoint and perspective of the language user. In consequence, good research has to **explicitly reflect** not only on the **position of the researcher** in the scientific discourse and in the social/political practice, but on the **relationship of selected concepts** to other concepts within the existing web of knowledge/discursive fields.

Understandings of Reliability

When it comes to reliability, we find a similar broad array of understandings in comparison to validity (e.g. Drost 2011: 106-114). Reliability has been described as concerning the question how consistent and stable our descriptions and explanations are over a variety of conditions, like different researchers (Drost 2011: 106). From such an "objectivist" point of view – to which **"truth seekers"** adhere –, reliability is about unsystematic error, compared with validity which concerns systematic error (Adcock and Collier 2001). In order to reduce this kind or problem and to secure trust in the results of a study, the process of data creation and data analysis have to be **transparent**. Furthermore, all data has to be made accessible, so that replicability is secured. From a "constructivist" point of view – to which **"sense makers"** adhere, the reliability of a study is not depending on the neutrality of the researcher and on the transparency of the research procedure, but on the standing and **trustworthiness** of the researcher. Since interpretative methodologies do not presume an objective social world, it is clear that research results cannot be stable and consistent across divergent conditions, e.g. divergent researchers. Therefore, trust in the results of a study are strengthened if the researcher explicitly reflects on her/his position and the selected theoretical and methodological approach is consistent with this position. This allows and actually simulates the emergence of alternative positions with corresponding theories and methodologies. Instead of making sure that individual studies can be replicated in order to test their internal reliability, constructivists emphasize that scholars have to reflect on the external embedding of their study in the scientific and practical context. The goal is to secure and enhance the reliability of the overall research system.

1.2 Ontologies: Elementarism and Formalism versus Holism and Substantialism

According to a widely cited textbook, ontology refers to "the nature of social reality – claims about what exists, what it looks like, what units make it up and how these units interact with each other" (Blaikie 1993: 6; Blaikie 2010: 92 for a very similar definition). Even more so than in respect to epistemology, it is important to stress that I start from a more **pragmatic** view on ontology. Blaikies definition draws him immediately into the philosophical debate on whether the social reality that we study exists independent of the human mind. Quite similar, Brady (2008: 225) associates ontology primarily with the question of deterministic versus probabilistic causality. A pragmatic approach, instead, would take ontological questions as questions about the adequate form of explanations; in other words, questions about the type of knowledge/explanations that we are striving for. Furthermore, in line with our presumption that it is more productive to give priority to epistemology over ontology, we would have to think about the type of explanation that is adequate for a selected research goal/question. In consequence, we take the last part of Blaikie's definition as the crucial part since it points to the central questions when it comes to the accumulation of knowledge within the social science (Blatter and Haverland 2014: 7):

- What are the basic entities of the social world?
- What is the relationship among these entities?

These questions direct us immediately to the conceptual poles that delineate the space of divergent ontological stances: materialism and idealism represent the consequent alternatives in respect to the first question; elementarism and holism are the terms that point to the principled alternative answers to the second question.

1.2.1 What are the basic entities in the social sciences? Material versus ideational factors

A **materialist** account assumes that biological needs, material resources, formal institutions and observable behavior are the entities on which we should build our knowledge on in the social world. In contrast, **idealists** presume that psychological predispositions, communicative processes, informal institutions and (inter-)subjective meanings are the crucial building-blocks for explanations (as well as for analytic descriptions/comparisons) in the social sciences.

1.2.2 What is the relationship among entities? Elementaristic versus holistic presumptions

Elementaristic approaches to theory- or model-building assume that the behavior/functioning of parts of a system is determined by their internal properties and the entirety of the system is the result of the interactions among the autonomous individual parts. **Holistic** approaches, by contrast, claim that the behavior of the particular elements is shaped primarily by the entire system, i.e. that entireties have an ontological status of their own and are more than the sum of their individual parts (Esfeld 2003). In the social science, this difference shows up again in theoretical discourses as the difference between **structure-centered** versus **agency-centered** explanations. Methodologically, it refers to the **level of analysis** that takes precedence in creating data and in producing explanations. Lower levels include individuals, but also corporate actors like single states (in International Relations), higher levels include systemic or structural factors like the Internet as communication structure that shapes not only the interaction among individual and corporate actors, but also their perceptions, preferences, values and identities.

1.2.3 What is causation? Formal versus substantial understandings

The notion of causation - understood in the encompassing sense that I signaled before - stands at the crossroads of the ontological and theoretical discussions that we scrutinized a few lines before. The quest for the identification of causes is the culmination of the two questions about the basic entities of the social world and their relationship. Once again, we can identify two polar positions when it comes to defining what causation is. Methodologies have affinities to one of these positions, but as we will show in the second section, they might also embrace a specific combination of the two understandings of causation.

On one hand side, there are those who understand causes as "difference makers." Difference-making understandings of causality stipulate that causes are characterized by their property of making some sort of difference to their effects. On the other side, adherents of transference or power-based understandings stipulate not only that causality is a relational concept (and not a property that a factor inhibits), but one in which the cause has a dispositional influence on the effect that manifests itself only under concrete circumstances (Baumgartner 2015, Anjum and Mumford 2010, Mumford and Anjum 2011). We could call the former the "positivist" perspective and the latter the "realist" perspective, but this would bring us once again into unproductive discussions about what these paradigmatic strands within the philosophy of science actually contain. In consequence, we prefer just to indicate two crucial differences among the two perspectives: The former perspective starts with "observations" and applies primarily **formal** logics and mathematics in order to bolster causal claims; the latter starts with "ontology" (specific presumptions about the functioning of the social world) and uses these **substantial** presumptions as interpretative frameworks in order to create meaningful causal narratives or pictures out of observations.

In order to trace causation and to identify causes and effects, the first position embraces the "experimental template" which is the dominant understanding in the natural sciences and in medicine. The opposite position takes its inspirations from philosophy and psychology and embeds causes strongly into the broader ontological matrix that we scrutinized before.

Brady shows that the **experimental template** combines two important understandings of causation in a very efficient way:

a) the **"counterfactual understanding,"** expressed by Hume as "if the first object had not been, the second had never existed" (Hume 1748 according to Brady 2008: 233). This understanding implies that it is crucial to control for alternative factors of influence in order to isolate the consequences of a causal factor.
b) the **"manipulation approach"** to causation, which emphasizes the importance of autonomous interventions for isolating the effect that results from a specific cause.

In experiments, control and targeted interventions are combined, therefore it represents the gold standard for establishing causality for those who stress the science in the social sciences (Brady 2008: 247).

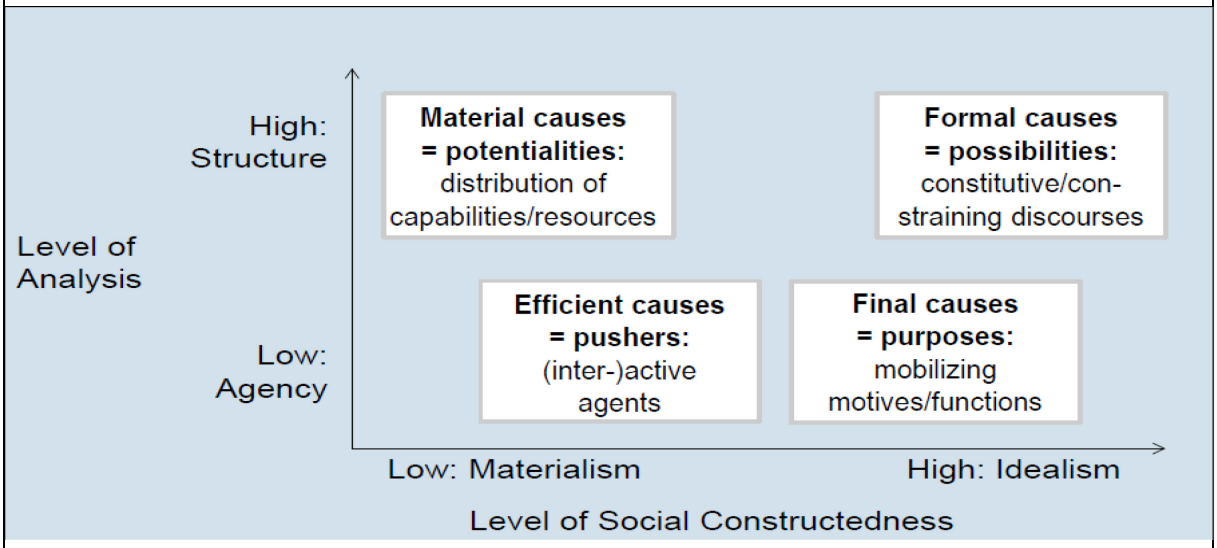
Brady identifies two further understandings of causation which are less elementaristic in as much as they are less focused on the identification of the effects of a single cause. The **"regularity approach"** is linked to Hume's other definition of "a cause to be an object, followed by another, and where all the objects similar to the first, are followed by the objects similar to the second" (Hume 1748 according to Brady 2008: 233). It focusses on the identification of the multiple causes of a specific effect. And the **"mechanism approach"** to causation is concerned with temporal processes and social mechanisms that link cause and effect on a lower level of analysis (Brady 2008: 242-245).

These understandings of causation can be described and differentiated with the terminology of **formal logic.** The counterfactual approach inhibits an understanding of a cause as a necessary AND sufficient condition for the effect; the regularity approach broadens this understanding by accepting conditions which are necessary but not sufficient and conditions which are sufficient but not necessary. This implies that individual causes are most often INUS-conditions - an insufficient but necessary part of a condition which is itself unnecessary but exclusively sufficient for an effect (Brady 2008: 227). The mechanism approach can be partly understood as a specification of the regularity approach. A causal mechanism consists of three complementary social mechanisms which connect causal factors on different levels of analysis (Blatter and Haverland 2014: 95-97). Therefore, each social mechanism can be described as an INUS condition. The main difference between the regularity approach and the mechanism approach is that the latter has not only a broader but also a deeper understanding of causation (both compared to the counterfactual approach). In consequence, the mechanism approach can be understood as a bridge which connects these observational understandings of causality with ontological understandings, to which we turn now.

Kurki (2006, 2008) has reminded us that we can draw on Aristotle for getting a **broader and deeper understanding of causation** in comparison to the understandings that we just laid out. In order to do so, we have to transfer **Aristotle's famous four causes** into the context of the social sciences and translate them into the language of modern social science theory. In the following, we extend Kurki's work by connecting Aristotle's four causes to the ontological matrix that we scrutinized above. Aristotle distinguishes four kinds of causes: material, formal, efficient and final causes. According to Kurki (2008: 219-222) material and formal causes are located on the structural level of analysis, whereas efficient and final causes are located on the lower level of individual or corporate agency. Material causes can be seen as the material resources and natural conditions which enable and delimit the potential range and direction of action; formal causes can be perceived as the normative-cognitive structures (discourses) which define the possible (imaginable) range and direction of action. Within a social science context, final causes can be understood as purposes which mobilize and motivate action. Finally, efficient causes refer to agents which produce action through their pushing and pulling activities. Figure 3 shows how these four causes can be located within the conceptual space that opens up when we look at the principled answers in respect to the major ontological questions.

The differentiation and location of these four causes is only the **first step** for delineating different understandings of causation that are in line with the goal of providing meaningful interpretations of the social world. The **second step** is to reflect about the **relationships among these four causes**. An understanding that is most distinct from the elementaristic understanding that is implied in the experimental template is a holistic one. Nevertheless, there are two different ways of how holism can be spelled out. A first one comes with a slight reinterpretation of the term "final cause" - final causes can not only conceptualized as purposes but also as functions. And Aristotle himself once argued for the priority of the final cause in the sense that it determines the other causes (Stanford Encyclopedia of Philosophy: Aristotle on Causality). Another holistic approach to causality equates holism with structuralism and prioritizes material or formal causes. In all holistic approaches, one of the four causes takes precedence and the other causes follow.

Figure 3: Different kinds of causes



As has been the case when we started from the experimental template on the opposite pole, we can detect broader and deeper understandings of causation when we **turn** away from consequent holism (in the former case we had to turn away from strong forms of elementarism) and **towards configurational thinking**. And once again – like the regularity approach – the first option is an empiricist/inductive option in as much as we strive for knowledge which includes a complete picture of all four causes. We reach such a complete picture through a close interaction with the subjects of the study and the resulting "fusion of horizons". The second option is deductive and strives for theoretical coherence, which means that all four causes have to be conceptualized coherently in line with one specific paradigm.

We will describe four of the six options for conceptualizing causality later on in more detail when we describe the different methodologies in section 2. At this point is important to stress that our approach towards a comprehensive understanding of causality is neither dualist nor monist. Gerring's (2005: 166) main argument for a monist understanding of causation is that it **contributes to the cumulation of knowledge.** Nevertheless, our approach reveals that such a monist understanding is not the only pathway for to the cumulation of knowledge. His approach is typical for an **empiricist** and methodologist: he characterizes cumulation of knowledge as "to adjudicate between rival arguments" (Gerring 2005: 191), applies once again (as he did with the concept of causal mechanism, Gerring 2008) a "least common denominator approach" to the definition of causation ("a cause raises the probability of an event", Gerring 2005: 163), and spells out a set to logical criteria that causal arguments have to fulfill without any attempt to provide coherence among these criteria. This means, **he clears causation from any substantial content**, which allows to fill such an empty signifier with all kinds of theoretical concepts. **Theorists** prefer a very different way to stimulate the cumulation of knowledge: in their view causation should be **connected to core concepts of scientific paradigms** which function as focal points for a discourse that strives for the cumulation of knowledge.

1.3 Methodologies: The rigor of logic versus the reflexivity of language

Internally, methodologies are characterized by two kinds of methods or techniques (we use these terms interchangeably) which are necessary elements of all empirical studies: a) methods of data generation; and b) methods of data analysis. Once again, we can delineate quite distinct alternatives in respect to how to proceed in fulfilling these two logical steps. At this point, we will only briefly point to the polar options. In the second part of the paper, where we describe four ideal-typical methodologies, we get into a more differentiated presentation of the various options.

1.3.1 How do we generate data? Operationalization and categorization versus immersion and imagination

The first step in the process of linking empirical information to abstract concepts, although it is often described simply as "data collection," does in fact consist of two logically distinct elements - and this is the case for all methodologies:

- For "truth-seekers", the first element is **"operationalization"** (linking concrete indicators to concepts and creating adequate measurement systems), and the second element consists of **collecting and categorizing corresponding empirical information.** At the end of these two sequential steps, we have "data-sets" consisting of scores for all relevant variables (in the case of the Comparable Cases Strategy) or for all conditions (in the case of the Configurational Comparative Analysis), or we have "bundles of evidence" which allow to trace all elements of a complete causal mechanism.
- "Meaning-makers" have to **immerse themselves into the field of study** in order to be able to understand the signs and interpretations of the social actors and their corresponding practices. At the same time, they have to **make themselves familiar with abstract** concepts and (paradigmatic) theories which allows them to imagine the underlying (= invisible and often unconscious) contexts (material and ideational structures) which shape these interpretations and practices. In contrast to those procedures of data generation which prepare for logical inferences, the two preparatory steps aiming at insightful interpretations have to be done simultaneously.

Data generation can follow a more **deductive** as well as more **inductive** pathway. The most radical methodologies on both sides are the most consequently deductive ones: as an ideal-type, the Comparable Cases Strategy follows quantitative research in as much as operationalization is seen as a purely deductive task and that it has to be completed before one starts to collect empirical information; those who describe and apply (Con)Textual Analysis give more weight to the understanding of abstract theories in comparison to the attempts to fuse horizons with the subjects of study. Configurational Comparative Analysis and Co-Writing Cultures – as the second, less radical methodologies from each side – are both characterized by following a more inductive pathway for connecting concretes with abstracts in comparison to the most radical methodologies. Finally, Causal-Process Tracing and Congruence Analysis, which occupy "centrist" positions in our typological space are characterized by strongly **iterative** procedures of linking abstract concepts to concrete observations.

Finally, we can identify two distinct preconditions, which have to be fulfilled at the end of the data generation process in order to be prepared for the logically (albeit not always practically) distinct process of data analysis. For "truth-seeking" methodologies, it is crucially important that the data-sets have to be complete in the sense that we need scores for all relevant

variables or conditions, or in the sense that we need evidence of specifying all elements of a causal mechanism in order to be able to draw inferential conclusion with the help of formal logic. **Completeness** is not a necessary condition for "sense-making" methodologies. Instead, it is **comprehensiveness** with its two meanings: For producing convincing interpretations, scholars must not only comprehend the field of study, sometimes even thoroughly understand the interpretations of the social actors, they must comprehend abstract theories, primarily for imagining underlying structures, as well. This means that they have to be comprehensively prepared in respect to empirical and theoretical content.

1.3.2 How do we analyze data? Logic-based inference versus language-based interpretation

In contrast to the quantitative methodology, where experiments have already become a common and highly recognized research design in Political Science, qualitative methodology is (until now?) concerned only with the study of non-manipulated social phenomena. Those who strive for revealing the objective truth are searching for real world situations which resemble "quasi-experiments." The closest you can get to the experiment template in a real-word context is a situation where you can observe a massive change in the causal factor you are interested in (the independent variable) and you can be sure that all other factors of influence remain stable - in other words, it is a situation where you can control for all confounding factors of influence. If the expected change in the dependent variable shows up, you can **infer logically** that the independent variable is a sufficient condition for the effect. The logical inference gets even stronger if you combine the intertemporal comparison (the situation before and after the change in the causal factor) with a cross-sectional comparison, which means that you find a situation that is similar to the first one in all respects except of the fact that the change in respect to the independent variable has not taken place. If the dependent variable shows no signs of the hypothesized change over time in such a "control case," you can logically infer that the causal factor is not only a sufficient but also a necessary condition for the effect. The Comparable Cases Strategy represents the qualitative methodology that most strongly strives for fulfilling the characteristics of a "quasi-experiment." In consequence, **selecting comparable cases** is the most important **precondition** for drawing logical inferences and therefore takes center stage in much methodological advice. And rightly so, but only if the aim of the research project is to isolate the effect of a specific cause.

The principled alternative to logic-based inference as technique of data analysis is language-based **interpretation (= argumentative justification).** The former asserts that the unobservable whole (the relationship between entities) has to be inferred from observed expressions of clearly distinguished parts (e.g. scores of variables - whereby it is especially important to make sure that the dependent variable has no influence on the independent variable). The principled starting point of the latter is the presumption that the part can only be meaningfully understood by its embedding within the whole. Methodologies which prioritize the whole (e.g. context, structure) in comparison to the part (e.g. text, agency) represent the most radical alternatives to the elementaristic methodologies that we scrutinized before. Those who apply the "hermeneutic circle" in analyzing data make a step towards elementarism in as much as they start with the dual assumption that the whole can only be understood from the parts and the parts can only be understood from the whole (e.g. Alvesson and Sköldberg 2009: 92). Structural holism leads to methods of data analysis where empirical information is used in order to illustrate the working of underlying structures. Hermeneutics puts more emphasis on the "fusion of horizons" between scholar and the

subject(s) of study. With Congruence Analysis we can detect a further methodology where interpretation takes center stage, but this methodology is much less holistic than the other interpretative methodologies and it adds the rigor of logic to the reflexivity of language. In consequence, like CPT, CON can function as a bridge between truth seekers and sense makers.

1.4 Ideal-Types: Tools for description/comparison versus tools for prescription/evaluation

The last term that we have to specify for our purposes is the term "ideal-type." In order to do this, we first immersed our self in the many (different) interpretations of Max Weber's understanding of this term in order to get ideas about the possible aspects which might be important for the characterization of the term. But instead of aiming to be in line with the "true" meaning of Weber's notion, we selected and specified those aspects which produce the most consistent understanding for our purposes. In other words, when deriving our understanding of ideal-types, **we prioritize coherence in comparison to correspondence**, because our goal is not to reveal historical truth, but to provide productive contributions to the current methodological discourse/toolkit.

In the following, we present the **main characteristics** of our understanding of ideal-types:

a. Ideal-types are **configurations** of components. For our descriptive-comparative purposes, these configurations include constitutive characteristics;[5]
b. Ideal-types are deduced by the logical combination of **abstract** components; they are not inductively derived from clusters of empirical observations. In other words, they are abstract concepts.
c. Ideal-types are **only** those combinations of components which represent a theoretically **coherent configuration**; this means that not all logically possible combinations of components are ideal-types; furthermore, in line with what we stated just before, it means that ideal-types are not dependent on the existence of real-world examples.
d. Ideal-types are only those combinations of **internal** components which **coherently** fit to important characteristics of the **external** context. In our case, this means that the methods of data creation and data analysis have to be in line with epistemological purposes and principles as well as with ontological presumptions.
e. Ideal-types are value-neutral in the sense that we do not assume that one type is normatively superior to another one. Nevertheless, ideal-types might be used not only for **descriptive/comparative purposes** but **also** for **prescriptive/evaluative purposes**. The former use is prevalent for those who perceive truth finding as primer goal for social scientists. For this purposes, ideal-types can be used as classification systems which help to describe and classify the reality. Usually, this represents only the first step in the research endeavor and the crucial goal is to explain the deviance between ideal-type and real-type. The use of ideal-types as normative prescriptions and evaluative tools makes sense primarily to those who believe in the practical value of consistency and coherence. From such a point of view, ideal-typical methodologies are those configurations of epistemological principles, ontological presumptions and methods of data creation/analysis which form a consistent and coherent whole. From a functional point of view, external coherence and internal consistency are seen as prerequisites for providing the best possible answer to the corresponding research question.

[5] For explanatory purposes, they could also include causal factors.

In consequence, those who want to describe and compare methodological practices or to analyze the methodological discourse can use the following ideal-types as tools for their descriptive and comparative purposes. Those how want to provide coherent advice for conducting empirical research and those who have to evaluate executed research projects can use the ideal-types also for their prescriptive and normative purposes.

2. Methodologies

In this part of the paper, four out of six methodologies are laid in more detail. Limited time and space have made me focus on four methodologies – the latter two methodologies will be delineated in more detail in a later contribution. I choose those four methodologies which I am most familiar with and for which I can show the usefulness of this typology for guiding the methodological discourse and developments in the last section of this paper.

Once again, it is important to stress that the four methodologies are laid out in their ideal-typical form. This means that internally, methods of data creation and methods of data analysis are consistently aligned; externally, they are coherently embedded in a research design with corresponding research purposes/goals and principles of good conduct/quality criteria (epistemological dimension) as well as in presumptions about the main entities of the social world, the relationship among these entities, and the nature of causation (ontological dimension). For each methodology, we start with the research design and the ontological presuppositions, before we scrutinize the methods and techniques and end up with the quality criteria.

2.1 The Comparable Cases Strategy (CSS)[6]

2.1.1 Research design and aspired kind of explanation

The Comparable Cases Strategy corresponds to an X-centered research design, which means that we should apply it when we are interested in the effects of a specific cause (X). The most prototypical situation for such a design resembles an evaluation where a researcher has to test whether the promised effect(s) of a policy measure actually took hold. In other words, the researcher strives for testing whether a hypothesis about the specific effect of a very concrete cause can be verified or falsified in a specific and very concrete context. The hypothesis is derived not from social science theory, but is based on a claim uttered in political practice. In consequence, not a (abstract) theory, but a (concrete) hypothesis is tested. Furthermore, the arguments why the cause should lead to the effect should be taken up when the hypothesis is developed, but the corresponding causal mechanisms are not tested empirically.

[6] Please note that the CCS, which is methodology that is geared for producing explanations, should not be equated with the "comparative case study." The latter is a much broader category, and as we have just recently emphasized, the main asset of an intensive comparison of individual cases is not the conclusion that we can draw in respect to the effects of causes, but the broader and deeper descriptive insights (Blatter, Langer, Wagemann 2016).

2.1.2 Ontological presuppositions

The CCS does not presuppose any substantial factors as basic entities of the social world - in other words: it is open to hypotheses including all kinds of material and ideational factors, which are conceptualized as nominal, usually dichotomous, variables. This formalism in respect to the basic entities is combined with elementarism in respect to the basic relations among the social entities. The entirety of the social relations as such does not play any role. It is assumed that the causal power of independent and control variables works autonomously and universally - it does not depend on the interaction with other variables nor on context. Finally, this methodology is based on a counterfactual understanding of causality ("if no X, no Y"). The independent variable (X) is perceived only as a cause, if it is a necessary AND sufficient condition for the dependent variable (Y).

The major steps within the conceptual part of a study applying the CSS are the following: Assuming that the independent variable of interest (X) is given as the starting point of our research project, we first have to specify the dependent variable (Y). Next, we have to determine whether we expect a positive or negative co-variation between X and Y. Prototypically, these decisions are made with reference to claims made in political practice. Finally, based on existing knowledge, we select other factors which have proven to have an effect on Y. Those factors are assigned the role of control variables.

2.1.3 Methods of data creation and data analysis

The methods of data creation and data analysis focus on the scores of the independent, the dependent and the control variables (the complete set of scores for all variables for each case is the corresponding data-set). The first step in the data creation process is the selection of adequate indicators for all variables. Second, we have to determine the "cut-off point" for each variable, which is measured in an ordinal scale with two hierarchically ordered categories. With the cut-off point we specify criteria and levels which we use for determining whether the factor of influence "does exist" or "does not exist." Cut-off points should be determined ex-ante and with reference to concrete knowledge/claims. Third, with the help of the specified and operationalized control variables, "comparable cases" are selected - those cases that have equal scores in respect to all control variables. Thirdly, from the population of comparable cases, two cases are selected which show strongly different scores in respect to the independent variable. In consequence, in a first step, we collect information about a larger population of cases and transfer them into scores for the control and independent variables. On the basis of this empirical information, we select the comparable cases that we study in-depth. Next, we collect information and transfer them into scores for the dependent variable. After this second step of data creation, we are ready for data analysis. On the basis of the full data-set with scores for all variables we can logically infer whether the cause actually had the expected effect: this is the case, if X and Y co-vary across cases in the expected direction whereas there is no variance across cases for all other variables.

2.1.4 Validity and reliability

Among the divergent kinds of validity that we identified before, the validity of the conclusion for the case of interest is most important. This conclusion is based on logical inference which, in turn, depends crucially on the comparability of the selected cases; in other words, we can only be sure that our conclusion is valid, if the selected cases are indeed most similar worlds with the exception of the independent variable. The reliability of the study depends on a transparent process of assigning scores to all variables, because this allows for replication.

2.2 Configurational Comparative Analysis (CCA)

2.2.1 Research design and aspired kind of explanation

The Configurational Comparative Analysis corresponds to a Y-centered research design, which means that we should apply it when we are interested in the (many) causes of an effect/outcome (Y). We start with an interest in a specific kind of outcome, which cannot only be something that we aspire (e.g. stable democracy), or something that we want to avoid (e.g. war), but also the absence of something (e.g. no war, which does not necessarily equal peace). The prototypical research question reads as follows: which configurations of conditions make this kind of outcome possible? In contrast to the CSS, we are not just interested in one specific causal factor, but we are striving for a model which includes all causal pathways that lead to a similar kind of outcome. But like in the CSS, the individual conditions that are taken into account within such a model are not derived from abstract theory, but they resemble the concrete factors which have been mentioned in the practical discourse or in the empirical literature. In other words, with a CCA we strive for an explanation on a low level of abstraction, as it is the case with CCS; but in contrast to the latter, we want a more general explanation. Therefore, we take into account not a specific outcome but a specific *kind of* outcome; and we focus not just on one cause, but on a plurality of causes. The arguments why a plurality of causes should work together in order to produce the outcome of interest and the corresponding interactions among the causes should be taken up when configurational hypotheses are formulated (in order to make a causal interpretation of the empirical results reasonable), but the corresponding interactions and mechanisms are not tested empirically.

2.2.2 Ontological presuppositions

Like the CCS, the CCA is not affiliated with any presuppositions in respect to basis entities of the social world. In this respect, both methodologies are similar “empty” or “open” – the two wordings indicate different valuations that come with such a formalistic, non-substantial ontological stance. Nevertheless, when it comes to the basic relationships, the CCA is less elementaristic than the CCS. The starting presumption is that outcomes are usually the result of many contributing factors. CCA does not imply that the entirety determines the working of the particulars, but it starts with the assumption that each particular causal factor works in combination with other causal factors, which means that the actual influence of causal factors depends on context. In other words, in contrast to CCS which assumes that causal factors have a causal power that works autonomously and universally (in a homogeneous population of similar cases), the CCA presumes that the influence of causal factors is *contingent* on context or on the co-existence of other causal factors. Finally, this methodology is based on a *regularity model of causation* which implies a less rigid connection between cause and effect in comparison to the counterfactual model of causation: A condition is perceived as a cause if it is a necessary and/or sufficient condition of a necessary and/or sufficient configuration that makes an outcome possible. The most prototypical causal factors are INUS and SUIN conditions: the former stands for an Insufficient but Necessary part of a configuration which is itself Unnecessary but Sufficient for the result; the latter for a Sufficient, but Unnecessary part of a factor that is Insufficient, but Necessary for the result (Schneider and Wagemann 2012: 79).

The major steps within the conceptual part of Configurational Comparative Analysis are the following: Since we are interested in a specific kind of outcome and not in one single outcome, we first have to define and specify a kind of outcome as a general concept. Next, with

reference to existing knowledge, we have to select, define and specify the configurations of conditions which possibly make the kind of outcome happen. Conceptual models which fit to the CCA methodology are deeply entrenched in configurational thinking (Ragin 2008: 109-146) and they are based on recognizing diversity: Configurational thinking means not only that one assumes that a plurality of factors have to co-exist in order to make the outcome possible (often called conjunctural causation); it refers also to the presumption of causal heterogeneity: causal factors can work differently in different contexts/configurations. A (normative) valuation of diversity is strongly connected to the recognition of equifinality: This means that one does not only presume that divergent pathways/configurations lead to the same outcome, but that each pathway is worthwhile to get recognized. The more one is committed to diversity, the more one values individual pathways independent of the frequency that it is used (the number of cases to which it corresponds). An ideal-type CCA is focusing neither on individual conditions nor on individual cases, but on individual configurations/pathways. That is why there are good reasons to argue that it is a configuration-centered methodology. Nevertheless, the final presumption of asymmetry helps to justify our initial characterization of CCA as an outcome (Y) -centered methodology. Within a CCA approach, asymmetry means primarily that we cannot assume that the causal configurations which lead to the occurrence of the outcome of interest are also relevant for the non-occurrence of the outcome. In other words, the analysis of the configurations of conditions which make Y (membership in the conceptual set) possible has to be separated from the analysis of the configurations of conditions that make y (non-membership in the conceptual set) possible.

2.2.3 Methods of data creation and data analysis

As it is the case within the CCS, the methods of data creation and data analysis within the CCA are focused on the scores for the causal conditions and the outcome. Once again, the first step in the process of data creation is to find observable indicators for all concepts. Nevertheless, the next steps which are elements of a process called “calibration” resemble a much more iterative process in comparison to the scoring of variables within the ideal-typical CCS. We start by a preliminarily fix of the anchor points of the measurement scale. The configurational ontological presuppositions of the CSS correspond to a stet-theoretical measurement scale which is able to measure differences-in-kind and differences-in-degree at the same time. In other words: it combines qualitative and quantitative forms of measurement. The qualitative element in producing a set-theoretical measurement scale is the determination of three crucial points: the point where a case can be seen as fully corresponding to the concept - when it is “fully in;” the point where a case does not correspond to the concept at all - when it is “fully out;” and the cross-over point where a case is “neither in nor out.” The quantitative element is the specification of further thresholds in between these three points. This addition allows to take into account that empirical concepts can have “fuzzy” membership boundaries, so that individual cases can be “almost fully in” or “more in than out” (Schneider and Wagemann 2012: 29). The cross-over point resembles the cut-off point within the CCS methodology, but in contrast to the latter, the cross-over point does not have to be determined ex-ante. Since the CCS is a much more inductive approach in comparison to the CCA approach, it is most productive to determine cross-over points (and the other points and thresholds, as well) in an iterative way.

This implies that data creation and data analysis are not separate, sequential steps in the CCA methodology. Instead, the creation of data (from observations) through calibration and the

analysis of data with the help of mathematical algorithms is a back and forth process which aims not only to determine the relationships between concepts (which configurations of conditions are necessary/sufficient for a specific kind of outcome?) but also to specify the membership boundaries of a concepts (when does it make sense to perceive an empirical entity as being fully - or mostly, etc. - in the membership set of a concept?).
In consequence, we start with a preliminary fix of all anchor points and thresholds. Next, we collect the relevant information and transform this information into data by determining scores based on those preliminary rules of categorization. Then, we produce a solution formula that represents a first model in respect to the co-existence of causal conditions/configurations and the outcome. This analytical step involves not only the use of mathematical algorithms, but also a reflection on how to deal with logical reminders and empirical inconsistencies. Next, we go back and adjust the anchor points and thresholds in order to identify better thresholds. Optimizing thresholds can follow two different rationales: from the perspective of a truth seeker, thresholds are getting better, if they lead to higher levels of consistency and coverage; from the perspective of a sense maker, in contrast, the best thresholds are those which lead to solution formulas which include only theoretically consistent configurations.
As an ideal-type, CCA is a strongly iterative methodology in as much as the population of cases to which the model can be generalized and the population of conditions that are included in the model should be determined iteratively and interdependently. Like anchor points and thresholds (and strategies to deal with logical reminders/inconsistencies), the populations of both, cases and conditions, can be modified in order to strengthen consistency and coverage, or it can be optimized in order to include theoretically coherent configurations and to exclude theoretically incoherent pathways. If we find out that the model gets better (in any of those senses) if we leave out one case, we can reduce the generality of the model and increase the specification of the model at the same time. We do this by reflecting on the difference between this case and the other cases. Finally, the identified difference can be included into the model as a necessary condition or it can be assigned the role of an external scope condition.
These back and forth process between adjusting parameters (data creation) and producing solution formula (data analysis) leads to optimized models - either in respect to empirical fitting OR in respect to theoretical coherence. The former criterion is in line with the overall goal of producing explanations that correspond to the external world, the latter criterion corresponds to the background goal of producing coherent understandings of the world.

2.2.4 Validity and reliability

For CCA, two kinds of validity and the corresponding measures for enhancing reliability are most important: first, drawing valid conclusions about the regular relationship (of co-existence) between conditions and outcome; second drawing valid concretizations for the membership boundaries of the applied concepts. The validity of the explanation that infers a causal relationship between conditions and the outcome based on their regular co-existence depends primarily on how we deal with empirical gaps and inconsistencies (logical reminders and inconsistent set relations). In consequence, the reliability of the conclusion hangs on how transparent one deals with these empirical challenges. The validity of our concretization of the conceptual boundaries depends on the consistency between fundamental research goal (correspondence versus coherence) and the principles and procedures to determine those conceptual boundaries. When we want to produce an explanatory model that shows a high

level of correspondence with the external world, we have to optimize the calibration towards higher levels of consistency and coverage. When we strive for coherence, in contrast, we should adjust the calibration so that we reach a higher level of theoretical coherence within the solution formula. In consequence, we enhance the reliability of the concretization of the boundaries of our concepts, if we adjust the anchor points and thresholds in a manner that is not only transparent but reflects explicitly on the purposes and underlying presuppositions of the research project.

2.3 Causal-Process Tracing (CPT)[7]

2.3.1 Research design and aspired kind of explanation

Causal-Process Tracing is a methodology that is focused on the concretization of causal *mechanisms;* in other words: CPT as an ideal-type corresponds to a mechanism (M)-centered design. We should apply it when we are interested in the details of the process through which causes lead to an effect. Like the CCS and the CCA, CPT strives for producing an explanatory *model*, but in contrast to the former methodologies, the main goal of CPT is to provide a **deeper and denser kind of explanation.** Like CCA, CPT starts with the presumption that a plurality of factors works together in producing an outcome. But in contrast to CCA, the focus is on revealing and specifying the ways in which the factors actually work together in order to produce a specific outcome – and not in revealing and specifying the configurations of conditions which regularly exist when a specific kind of outcome exists. In order to fulfill the aspirations, we have to **include multiple levels of analysis** and we have to show in detail **how different kinds of causal factors work together**.

In consequence, CPT has not only a stronger affinity to a holistic ontology, but also in respect to epistemology, it makes a further step towards accepting coherence as a second purpose of social science research (in addition to correspondence). But this is only the case, if we follow those methodologists who insist that a causal mechanism is a multi-level model of explanation that consists of a theoretically coherent set of three types of social mechanisms (Blatter and Haverland 2014). Such an understanding opens up the opportunity that CPT can serve as a bridge between model-building and theory-building, or between concrete knowledge/concepts and abstract knowledge/concepts. Linking abstract concepts and concrete concepts can be done both ways: top-down and bottom-up. Paradoxically, if we are more empirically interested, we should make the link in a top-down manner: In the theoretical chapter, we specify a causal mechanism by combining a paradigmatic action-formation mechanism (e.g. rational choice, norm-following, arguing, rhetorical action, performance; Risse 2000, Schimmelfennig 2001, Blatter 2009, Bennett 2013) with theoretically coherent situational mechanisms (preference-forming conditions) and transformational mechanisms (e.g. decision-making rules). The latter two mechanisms link the micro-level with the macro-level of analysis. The task of the empirical chapter is to search for information which does not only provide evidence that the three-fold mechanism has been at work in linking causal factors to outcomes but the empirical information provides the concretization of the abstract causal mechanism for a specific case.

[7] It is important to realize that CPT refers to the methodology that has been described in Blatter and Haverland (2014) and Blatter, Langer and Wagemann (2016), and not to other descriptions of "process tracing" (PT).

If we want to use CPT for a contribution to a theoretical discourse, we should proceed more inductively. In the theoretical chapter, we lay out how causal mechanisms have been specified so far in the theoretical discourse. In the empirical chapter, we use empirical information in order to show either that an entirely different causal mechanism has been at work (challenging the dominant paradigm in the field) or that one or two of the three social mechanisms has to be specified in a different way (adding another theory to the paradigm).

2.3.2 Ontological presuppositions

Causal-Process Tracing presupposes that an explanation of an outcome or event has to include (material or ideational) entities which are based on the structural level and entities that are based on the agency level (individual or corporate actors). Furthermore, it presumes a specific sequence of relationships between those entities, in as much as a **full-fledged causal mechanism includes three kinds of social mechanisms**: a) situational mechanisms which represent the influence that structural factors have on particular actors; b) action-formation mechanisms, which characterize how external stimuli are taken up by particular actors and turned into behavior; and c) transformational mechanisms, which represent the processes by which individual behavior is getting aggregated into a collective outcome.

The corresponding mechanistic understanding of causality is **still** committed to **elementarism** and formalism, but it makes further **steps towards holism** and substantialism. It is elementaristic in the sense that the three individual social mechanisms are not fully determined by the entire causal mechanism, their individual functioning depends primarily on exogenous causal factors. This basic elementarism is compromised by the fact that the effective working of the entire causal mechanism is depending on the configuration of the three social mechanisms – which represents the same partial step towards a holistic ontology that we find in the CCA approach. The fact that CPT assumes a specific configuration of causal factors and focusses on the mechanisms as the linkages between these factors marks a much more profound step towards holism, though.

The same shows up when we look at the **combination of formalism and substantialism** that CPT inhibits: The mechanistic understanding of causality can still be expressed in the language of formal logic: a cause is a multi-level system of three social mechanisms which are individually necessary and jointly sufficient for an outcome. But it shows already strong leanings to a substantialist understanding of causality in as much as that the three social mechanisms that form a causal mechanism can be seen as the links that connect Aristotle's four kinds of causes which we laid out in chapter 1.2.3.

2.3.3 Methods of data creation and data analysis

In contrast to the two former methodologies, Causal-Process Tracing is analyzing information that we gather and create within a case – it is not comparing data across cases. This shapes very much the way we proceed in order to create and analyze our data in a systematic fashion. Since we cannot draw on similarities and differences across cases for drawing causal conclusions, we focus in a first step on stability and change over time. We trace the developments of structural factors which we perceive as potential factors of influence over time and compare them with major changes or events in respect to the outcome that we are interested in. Such an approach to pin down slow moving and sudden changes in respect to potential factors of influence and outcomes on a time scale should not be mixed up with an intertemporal comparison – which is a specific design of the Comparable Cases Strategy (CCS).

The description of the **temporal unfolding of the causal process** serves two purposes: First, it provides some preliminary evidence about the influence of a structural factor on an outcome, for example, if a change in the causal factors is followed closely by a change in the outcome factor (temporal continuity/proximity). Pinning down the temporal unfolding of events in objective time can play a powerful role in explaining the (limited) influence of a structural factor on an outcome, as Henry Brady (2004) has shown in his seminal chapter on the presidential election in 2000.

But even more important than the direct analytic value of presenting the unfolding of a causal process over time is its value for the process of data collection and creation. Based on a sketch on the major changes over time in respect to the outcome, we can identify those times where we have to look closer in order to develop a denser and deeper picture of the process by providing a more detailed description and by revealing underlying mechanisms. For providing a denser picture we look for so-called **"smoking gun observations"** – a bundle of observations which provide a high level of certitude about a causal connection through their spatial and temporal proximity ("smoking gun observations" should not to be confused with so-called "smoking gun tests"). For example, if we see that a man falls and dies closely after another man has shot a gun, if the two men stand close to each other, and if we observe that the gun has been directed to the first men, such a bundle of observations provides enough evidence in order to make strong causal claim because they provide a very dense picture of the crucial moment in a causal process. The explanatory picture is getting much further depth, though, if we receive a **confession** from the first man in which he describes his motivation for the deed.

The pattern that we gain by pinning down the developments of causal factors and outcomes over time and smoking-gun observations provide some **"natural" ground** for drawing causal conclusions on the basis of spatial contiguity and temporal continuity. For a full-fledged explanation, these forms of evidence have to be combined with further analytic techniques. The first of those techniques is **"counterfactual thought experiments"** which are especially useful in order to gauge whether a causal factor has been necessary for the outcome. The second is to combine the observations in such a way that each of the three elements of **a full-fledged causal mechanism is specified** – this is what Brady (implicitly) did in his process tracing study (Blatter and Haverland 2014: 126/127).

2.3.4 Validity and reliability

For CPT, the following two kinds of validity and the corresponding measures for enhancing reliability are the most important: first, a full set of empirical observations that correspond to the three social mechanisms lead to a **valid concretization** of an established causal mechanism for the case under study; second, a bundle of empirical observations provide the natural foundations for a **valid specification** of a new causal mechanism for the scientific discourse.
In order to make sure that an established causal mechanism is concretized in a **reliable** way, the researcher must provide a coherent specification of an abstract causal mechanism and explicitly reflect on the correspondence between the empirical observations and the abstract social mechanisms. For securing that a new causal mechanism is specified in a reliable manner, it is necessary that the researcher provides dense descriptions of crucial moments as evidence for the claim that the new social mechanism is closely connected to the other elements of the causal mechanism and to the outcome.

2.4 Congruence Analysis (CON)

2.4.1 Research design and aspired kind of explanation

Congruence analysis is a Theory (T)-centered methodology. In other words, it is the right research design with the adequate techniques of data creation and data analysis if we design and execute an empirical study with the goal to contribute to the development of abstract theories and/or to scholarly debates about the recognition, standing and specification of scientific paradigms or paradigmatic research programs within a specific field of research. The CON methodology is explicitly recognizing the fact that paradigms and theories are important focal points and frames which structure scientific as well as public discourses and which shape perspectives of scholars and practitioners alike. This means that it acknowledges that (social) science is an endeavor that not only strives for revealing the truth, but at least as much it aims at making sense and providing orientation. Therefore, it is adequate to locate this methodology on the left hand side of our conceptual space (figure 1), although it inhibits many features which justify its strongly centrist location.

With a CON, we strive for explanations which involve theories as coherent sets of abstract concepts and connections. Such a theory includes a selection of constitutive concepts and specific assumptions about the causal connections between these concepts. In other words, a theory encompasses hypotheses that propose a deterministic OR configurational causal connection (as it is the case in the CCS and CCA) AND social mechanisms which specify and concretize the multi-level pathway that leads from the cause(s) to the effect(s). But it complements these presumptions about connections among concepts by a process of concept formation that is decidedly abstract. This means that the selection and the specification of the abstract concepts takes place on a horizontal level - with references to paradigms and other theories, and not with references to observable indicators. This means for example, as we will see later on, that we link observations and concepts not in the theoretical part of the study (where we deduce expectations), but in the empirical part.

In line with Blatter and Haverland (2014: 145), we can differentiate two prototypical research questions which signify slightly different goals and directions of a CON: a) Which general paradigm and/or which specific theory provides <u>better</u> explanations? b) Which general paradigm and/or which specific theory provides <u>new</u> explanations? The first question indicates a clear affinity to truth seeking, whereas the second one is compatible to a much more relativistic stance and shows a stronger affinity to sense making. In order to find out which theory provides the better explanation the researcher compares the congruence between the expectations that he deduced from one theory and the empirical evidence with the congruence between the expectations from another theory and the empirical evidence. The theory that provides more or more important expectations that are corroborated by evidence is the better theory. If the researcher tries to answer the second question, she has to show that there are important aspects of the case which are not in line with existing theories but which correspond to a newly introduced theory. A crucial feature of the CON is the fact that is provides guidance for a more differentiated approach in-between these two prototypical questions, in as much as it asks for an explicit reflection on the standing of the applied theories in the scientific discourse (e.g. dominant, peripheral). Based on this ex-ante standing of the theories, the researcher uses the different levels of congruence between theoretical expectations and empirical evidence to advocate a revisions or a conformation of theses standings in the theoretical discourse. In other words, it brings in a kind of Bayesian reasoning in the process of drawing conclusions from the empirical findings to the conceptual

starting points – but on the level of theories and not for specific hypotheses, as it has been proposed by proponents of Process Tracing. We will address this aspect further in our next chapter.

2.4.2 Ontological presuppositions

A congruence analysis presupposes that an explanation encompasses a comprehensive and coherent set of causal factors which are located on the macro-level and on the micro-level of analysis as well as the corresponding social mechanisms which connect these distinct levels of analysis. Whereas for the CPT approach complementarity and comprehensiveness are crucial (the complementary elements of a causal mechanism have to be specified and concretized), for the CON approach theoretical coherence takes precedence (Blatter and Blume 2008). This means that the constitutive concepts and causal connections that we include into a theory must be internally coherent and – even more important – externally distinct. The crucial difference to all other methodologies (to CPT but also to the co-writing cultures and contextual analysis) is the role that the **plurality** of theories plays in the CON methodology. This means, for example, that we apply a materialist (or rationalist) theory and an idealist (or social-constructivist) theory. For each theory, we take only the corresponding structural factors and actors as well as the causal relationships and mechanisms into account. Furthermore, we define these aspects within one theory through distinctions to functionally equivalent aspects within other theories.

In consequence, CON usually takes into account materialist and idealist entities, but not in an integrated analytic framework, but as competing or complementary theories. Within each theory, the assumption about the relationship between the basic entities is rather holistic, because it is assumed that the structural factors and the mechanisms that connect the various levels of analysis strongly determine the behavior of actors and the final outcome. Nevertheless, CON is not fully holistic because it assumes that we can explain a specific case only comprehensively if we apply of a plurality of such holistically integrated theories.

Finally, CON has a strong affinity to a substantialist understanding of causation in as much as full-fledged theories include a similar plurality of causes as I have laid out – following Kurki – with reference to Aristotle (see section 1.2.3). Nevertheless, not all four kinds of causes have to be included in a specific theory. Usually, a theory includes efficient and final causes (by specifying core actors and their kind of behavior), and these causes on the micro-level are complemented by either material OR formal causes. If we do not strive for making a contribution to inter-paradigmatic struggles, but rather to the development of specific theories within a research program (that adheres to a specific paradigm), we do not even need to include all kinds of causes in the overall explanatory framework.

But even more important for the very centrist location of CON is the fact that all the formal understandings of causation can play a role within a CON approach, as well. As laid out before, a full-fledged theory includes all kinds of causal expectations. The empirical evidence that corroborates or undermines one of these hypothetical relationships plays an important role in determining the overall congruence between a theory and a case. The crucial difference is that within a CON approach, we do not design the entire study in order to reveal or test **one** of these causal relationships in a logically most convincing way. Furthermore, we would not refute a theoretical explanation right away if one causal prediction would be disconfirmed. As Blatter and Haverland (2014: 184) have pointed out with reference to Scott Sagan's (1993) study on risk management in complex organizations: a theory can (under certain, admittedly

relative seldom circumstances) be strengthened by a CON despite the fact that the final outcome is not in line with its predictions. Correspondence matters for a CON, but the coherence of the entire set of findings matters even more.

2.4.3 Methods of data creation and data analysis

When we apply a CON, and even more when we present the findings, we proceed rather deductively, albeit not as decidedly as within a CCS approach. In the theoretical part of the study, we explicitly reflect on the standing of theories within the scientific discourse that exist in a field of study. Based on these reflections, we select and specify the theories that we apply for studying one or a few cases. For the ideal-typical purposes of a CON, it makes sense to select established or even dominant theories as well as newcomer or peripheral theories. After theory selection comes case selection. In order to make the impact of our study on the theoretical discourse as large as possible, we either study practically very important events or we select cases which have the potential to be "crucial cases." The latter means that we try to find cases for which we can argue – based on contextual information about the cases – that they can be very likely explained by the dominant theory and that is very unlikely that the peripheral theory makes an important contribution to the explanation. If our findings will show the opposite, the study inhibits the strongest munition for arguing for a change in the status of the theories.

Another step in the theoretical section is that we specify our selected theories. We do this in an abstract way – which means that we select and define the elements of a theory primarily with an eye on the theoretical discourse and that we focus on the differences between the theories. We deduce expectations about the case in respect to the basic entities on the various levels of analysis and on their relationships. These expectations are formulated on an abstract level – at this stage, no concrete predictions are made. With these expectations in our mind, we start to search for information in the field of study.

In the empirical part of the study we first transform the collected information into data by explicitly reflecting on whether the information is in line, in contradiction to or beyond the expectations that we derived from the selected theories. This step involves crossing the line between abstracts and concretes; therefore, it is the most demanding part of a CON. Each time when we argue that an empirical observation represents confirmatory or contradictory evidence to an expectation, we have to justify this explicitly. Next, we compare the level of congruence between the theories. Finally, we draw conclusions from these findings to the standing of theories in the theoretical discourse.

For the purpose of this paper – distinguishing between ideal-typical methodologies – it is important to highlight the following two aspects:

a) Within a CON approach, the search for information is driven by the expectations that we derive from prior knowledge, as it is the case within the Comparable Cases Strategy and the Configurational Comparative Analysis. But in contrast to those approaches, and in contrast to Causal-Process Tracing, which is a less deductive approach, we do not need full data sets in order to draw conclusions about the value of a theory for the explanation of a case. For the first two approaches, the cross-case methods of data analysis demand that we have scores for all variables or conditions/outcomes. Within a CPT approach, the within-case method of data analysis demands a similar comprehensive data set, in as much as we need empirical information for each social mechanism in order to specify and

concretize the entire causal mechanism that leads from cause to effect. Within a CON approach, in contrast, we judge the value of empirical information not by its contribution to produce a comprehensive data set, but by its decisiveness for discriminating among divergent theories. An empirical observation that is at the same time evidence for one theory and evidence against another theory has a higher value than empirical evidence that can only be used to judge the adequacy of one theory.

b) We present the proceedings and findings of a CON in a linear fashion, which means that we deduce expectations in the theoretical part, and reflect on the congruence between observations and expectations in the empirical part of the study. Nevertheless, the actual proceeding is much more iterative, without necessarily undermining the validity and reliability of the study. We start with specified expectations when we search for information; but we should not limit our search of information to those ex-ante specifications. If we find information that we can use for making a strong argument for or against the adequacy of a theory, we can "go back" into the theoretical part of the study and specify the corresponding abstract expectation – using arguments that refer to abstract concepts. In the empirical part, we use different kinds of arguments in order to bolster the claim that the concrete observation is evidence for or against the abstract expectation.

2.4.4 Validity and reliability

For the Congruence Analysis, the following two kinds of validity and the corresponding measures for enhancing reliability are the most important ones: first, an explicit reflection on the position of theories in the scientific discourse lead to the **valid specification** of different theories and the corresponding abstract expectations. Second, the explicit justification that we present for arguing that an empirical observation lends confirmatory or contradictory evidence to an expectation leads to **valid explanatory conclusions** for the case(s) under study These explanatory conclusions depend on interpretations and are not based on logical inferences. Nevertheless, CON comes with a specific kind of interpretation which distinguishes this sense making methodology strongly from the other two methodologies that strive for creating coherence: In contrast to the Co-Writing Culture approach, interpretation does not imply any fusion of horizons between the scholar and the subjects of study. The interpretation is clearly and solely an interpretation that is created by the scholar – and the scholar has to defend her/his interpretation primarily within the scientific community. In contrast to the Con-Textual Analysis approach, the interpretation is much less geared towards producing a fully coherent picture.

Two features of the methodology make sure that the interpretation is strongly embedded in the scientific discourse, and at the same time, that the results are not fully determined by the theoretical framework: a) applying of a plurality of theories, b) separating the specification of abstract expectations in the theoretical part of the study from the process of linking concrete observations to abstract expectations in the empirical part of the study. These features provide strong checks on the interpretative leeway of the scholar and push this methodology closer to the logic-based ways of drawing explanatory conclusions that are characteristics of the methodologies that we presented earlier on.

Following these two features of the CON methodology ensures the reliability of the results. In order to make sure that a theory is specified and expectations spelled out in a **reliable** way, the researcher must explicitly justify the selection of theories and the specification of expectations that she derives from the theories. For securing that the explanatory conclusions

for the case(s) under study are made in a reliable manner, it is necessary that the researcher justifies explicitly every decision to interpret an empirical observation as evidence for or against the adequacy of a theory.

3. Summaries

The following overview tables sum up the specific epistemological, ontological and methodological aspects of the four ideal-types that I have laid out so far. In addition, I provide some preliminary indication about the corresponding specifics of the other two ideal-types.

Tables 2a-c: Characteristics of six ideal-typical methodologies

	Comparable Cases Strategy	**Configurational Comparative Analysis**	**Causal-Process Tracing**	**Congruence Analysis**	**Co-Writing Culture**	**Con-Textual Analysis**
Epistemology	**Truth Seeking** Correspondence		⇔		**Sense Making** Coherence	
Research Question	Which effects does a specific cause (X) have?	Which configurations of conditions make a specific kind of outcome (Y) possible?	Which underlying mechanisms (M) make causes producing an effect?	Which specific theory (T) and/or general paradigm provides better/further explanations?	Which interpretative signs and processes characterize a specific culture (C)?	Which fundamental structure (S) stabilizes and/or transforms a social system?
Research Design	=> X-centred research design	=> Y-centred research design	=>M-centred research design	=> T-centred research design	=> C-centred research design	=> S-centred research design
Aspired Explanation	Confirmed *hypothesis* for specified scope conditions	Configurational *model* with large empirical consistency/coverage OR theoretical coherence	Completely specified/concretized multi-level *model* of social mechanisms	Comparatively high congruence between a coherent *theory* and a crucial case	Consistent narrative of cultural practices co-produced by scholar and subject	Creative re-construction of social reality based on comprehensive *worldview*
Validity	Means + preconditions for valid *inferences*: Formal logic; Reflections on the similarity of cases	Means + preconditions for valid *concretizations* and *inferences*: Set theory; Reflections on optimal calibration, consistency and coverage	Means + preconditions for valid *specifications* and *concretizations*: Empirical density and depth; Reflections on interactions and identities	Means + preconditions for valid *specifications* and *interpretations*: Reflections on relationships among theories + between concretes and abstracts; Multiple theories	Means + preconditions for valid *concretizations* and *interpretations*: Communicative fusion of horizons; Immersion and empathy	Means + preconditions for valid *generalizations*: Ingenious interpretation of important examples; Reflections on paradigms
Reliability	Transparency: Selection of variables and cases; Scoring	Replicability: Access to raw data; Robustness tests	Traceability: Detailed description; clear links to and between mechanisms	Fairness: Unbiased selection, specification, and application of theories	Authenticity: Interpretations are shared/supported in the field of study	Reflexivity: Research(er) is positioned in the research context

Ontology	**Elementarism and Formalism**		⇔		**Holism and Substantialism**	
Basic **Entities**	All kinds of material and ideational factors understood as variables	All kinds of material or ideational factors understood as conditions	A complete set of causal factors on the macro- and on the micro-level of analysis	A theoretically coherent set of material or ideational factors on the macro- and micro-level of analysis	An empirically consistent set of meanings and practices	A coherent set of material and ideational factors understood as structures
Basic **Relations**	Specific co-variation of two elements on the same level of analysis	Diverse configurations of multiple elements on various levels of analysis	Complementary social mechanisms which link causal factors across divergent levels of analysis	Coherent combination of constitutive and causal relations across divergent levels of analysis	Co-constitutive relationship between interpretation and action on the micro-level of analysis	Constitutive consequences of macro-level factors on micro-level factors
Under-standings	Counterfactual (If no X no Y)	Regular Coexistence	Causal Mechanisms	Coherent Causal Schema	Consistent Reconstruction	Constitutive Power
Definitions	A cause is a necessary AND sufficient condition of an effect	A cause is a necessary and/or sufficient element of a necessary and/or sufficient causal configuration of an effect	A cause is an element of a multi-level system of social mechanisms which are individually necessary and jointly sufficient for an outcome	A cause is an element of an abstract schema which includes coherently aligned causes, mechanisms and outcomes on multiple levels of analysis	A cause is an element in a co-produced narrative about meaningful practices	A cause is a social structure that fundamentally shapes (stabilizes or transforms) social systems
Implica-tions of **Causation**	Independency: Autonomous causal effect; equal causal power in a specified universe	Contingency: Causal effect depends on context; causal heterogeneity	Complementarity: Causal effect depends on the sequential/situated interaction of three social mechanism	Coherence: Causation depends on a coherent combination of efficient causes AND final causes PLUS material OR formal causes	Consistency: Causation depends on effective combination of material and formal causes for reaching final causes	Creativity: Causation depends on the creation of final and efficient causes by material and final causes

	Comparable Cases Strategy	Configurational Comparative Analysis	Causal-Process Tracing	Congruence Analysis	Co-Writing Culture	Con-Textual Analysis
Methodology	**Logic (Deduction/Induction)**			⇔		**Language (Association/Implication)**
Data creation	Selecting indicators and cut-off points of concepts; Collecting corresponding observations; Transforming observations into variable scores	Selecting indicators and calibrating membership sets of concepts; Transforming observations into membership scores	Collecting information: - on the temporal unfolding of a process, - on spatial-temporal distance/proximity of causes and consequences, - on perceptions/ motivations of actors	Deducing expectations from theories; collecting corresponding information; producing (dis-)confirmatory evidence/arguments in respect to expectations	Immersion in social field and communication with social actors; transforming observations/ communications into data through writing field notes	Immersion in social science paradigms; realizing potentially revealing examples of constitutive processes and collecting the relevant information
Data analysis	Inferring conclusions about the effect of X on Y based on their co-variation across cases; Controlling for confounders through selection of similar cases	Inferring conclusions about necessary and sufficient conditions/ configurations for specific kinds of outcomes with the help of set-theory	Identifying causal chains and conjunctions; Specifying/ Concretizing situational, action-formation, and transformational mechanisms	Comparing the congruence between expectations and evidence among divergent theories; Reflecting on the ex-ante and ex-post status of theories	Fusion of horizons; producing coherent interpretation by combining interpretations of social actors with interpretations of social scientists	Revealing constitutive processes through making sense of concrete actions (including communicative acts) by coherently linking them to underlying social structures

4. Instead of a Conclusion: First Applications of the Typology

In the final part of this paper, I would like to provide first glimpses on how we can use the developed conceptual space and the typology for clarifying methodological disputes. A first dispute has emerged explicitly among methodologists about the correct understanding and application of Configurational Comparative Analysis (CCA). Another – rather implicit – dispute can be observed in respect to an adequate understanding and application of Causal-Process Tracing (CPT). In the following two subsections, I would like to show that the conceptual space that we have laid out in order to locate specific methodologies can also help for a better understanding of the disputes and for clarifying the presumptions that underlie (often implicitly) the various positions within these disputes.

4.1 Configurational Comparative Analysis (CCA): Methodology with or without "meaning"?

Recently, the major division among methodological proponents of CCA has become very explicit. After an exchange of standpoints about the foundations and merits of CCA (labelled Configurational Comparative Methods, CCM, and Qualitative Comparative Analysis, QCA) among various scholars,[8] Alrik Thiem and Michael Baumgartner (2016: 804) end up with the following statement: "Representatives of QCA such as Schneider, who want to add a dimension of 'meaningfulness' to the Boolean implication operator, however this is to be defined, must first present an algorithmic foundation for QCA which is embedded in a formal system that endows such an operator with such a quality." Since Carsten Schneider (2016) devoted his contribution to the debate primarily to clarify differences between CCM and regressional analytic methods, he indeed provided not much clarification for what he means when he argues that "(s)cholars choose this method to find meaningful

[8] In the main parts of the debate, proponents of CCA have been faced with allegations that CCA has nothing to offer what regressional analytic methods cannot do (better) (Paine 2016), or that CCA is distracting comparatists from more adequate/productive methods which are really qualitative in nature (Munck 2016). Our conceptual space could also be used to contribute to these "inter-methodological" disputes.

super- and/or subsets of the phenomenon to be explained" (Schneider 2016: 782). Nevertheless, in publications he wrote together with Claudius Wagemann, we find many hints on what it means to understand CCA in a more "meaningful" way (Wagemann and Schneider 2010, Schneider and Wagemann 2010, Schneider and Wagemann 2012). In the following, I develop my argumentation not directly with reference to the writings of the protagonists of the dispute. Instead, I show that our conceptual framework helps us to develop two coherent and consistent variants of CCA. Both are ideal types in the functional sense that I laid out in section 1, but one is geared single-mindedly to truth seeking, the other aims at a specific combination of truth seeking and sense making. From these two distinct fundamental goals, we can deduce two distinct and internally consistent ways to apply the methods of data creation and data analysis in CCA. These ideal-types, in turn, can be used in order to reflect on the contributions and positions of the CCA methodologists.

Table 2 shows that the two variants of CCA have affinities to distinct epistemological purposes and ontological presuppositions which lead to different understandings of causes/causality. Furthermore, these distinct goals and foundations lead to the different principles that one has to follow in order to reach the two kinds of validity that I have identified as taking centre-stage in the CCA methodology.

Table 2: Two variants of Configurational Comparative Analysis (CCA)

	CCA as a methodology aiming purely/**single**-mindedly at **truth seeking**	CCA as a methodology aiming at a specific **configuration** of **truth seeking and sense making**
Aspired kind of explanation	Model that integrates and concretizes Truth Values	Model that integrates and concretizes Abstract Theories
Ontological presuppositions	Elementarism/Homogeneity = Focus on individual but universally functioning INUS conditions	Holism/Diversity = Focus on divergent but internally coherent causal configurations
Understandings of **causes/causality**	Causal Factor as Difference Maker	Causality as Influential Connection
Principles and strategies for the **validation of conclusions**	**Striving for Parsimony:** - when applying counterfactuals for dealing with limited diversity - when deciding about the inclusion/exclusion of cases (the boundary of the population) and about the location of conditions (in the causal model or externally as scope conditions)	**Adhering to Theory:** - when applying counterfactuals for dealing with limited diversity - when deciding about the inclusion/exclusion of cases (the boundary of the population) and about the location of conditions (in the causal model or externally as scope conditions)
Principles and strategies for the **validation of concretizations**	**Empirical Calibration:** - First calibration is driven by empirical distributions - Further calibrations are aiming at parsimonious solutions	**Theory-based Calibration:** - First calibration is driven by theoretical considerations - Further calibrations are aiming at theoretical coherent solutions

The first version of CCA is single-mindedly committed to a pure empirical endeavour. It strives to create a model that specifies which factors co-exist and that concretizes the truth value of these factors for a specific population of cases. The focus is on individual causes, albeit it is presupposed that these factors are INUS conditions of an effect: "insufficient, but non-redundant (= necessary, JB) part of an

unnecessary but sufficient condition of the latter" (Baumgartner 2015: 842). By using the term "non-redundant" instead of the more common term "necessary" in the definition of INUS conditions, Baumgartner paves the way for a definition of a cause[9] as a "Boolean difference-maker" defined as follows: "A factor A is a Boolean difference maker of an outcome E if, and only if, A is contained in a minimally sufficient condition AX of E such that AX, in turn, is contained in a minimally necessary condition of E" (Baumgartner 2015: 845). The emphasis of non-redundancy and minimalism in his definition of cause has stringent implications for the strategies which insure the validity of conclusions. In order to identify Boolean difference-makers, one has to apply a strategy to deal with limited empirical diversity that secures the most parsimonious solution (Baumgartner 2015). I would add[10] that also when we consider the adequate boundary of the population of cases for which we develop the explanatory model, we should strive for a parsimonious solution. This principle applies when considering the inclusion or exclusion of cases and also when reflecting on the question whether a condition should be included as a causal condition or treated as a scope condition.

The left hand side of the table lays out an alternative version of CCA which strives for an explanation that does not only correspond to the empirical world but that "makes sense." In other words, it should be "meaningful" in the sense that it is in line with coherent worldviews. Ironically, the proponents of a "meaningful" application of techniques of CCA have never clearly spelled out what this means. The ambiguity results from the fact that often CCA is described as a "case-centric" methodology (in contrast to variable-centred methodologies) – implying that coherence can be found within empirical cases. Or, to formulate it the other way round: that a comprehensive knowledge of individual cases allows one to judge whether the configurations that we find in CCA solutions make sense. Theories – defined as coherent specifications of abstract paradigms – are the alternative source for the search of coherence. Our conceptual space reveals that the second option is the more consequent pathway for combining truth-seeking and sense-making in CCA.

In consequence, a "meaningful" approach to CCA implies that we start an empirical study with a plurality of configurational hypotheses which are derived from abstract theories. All configurations should include only conditions which can coherently aligned to a specific theory or general worldview, because we presuppose that individual causal factors have only an effective influence on an outcome, if they work together in an interactive way (in contrast to assuming that causal factors simply add up, Blatter and Haverland 2014: 93/94).

These purposes and presuppositions lead to quite different principles and strategies for drawing valid conclusions (and specifications – once again, we do not lay out more details in this respect) in comparison to the first version of CCA. Instead of striving for parsimony, we adhere to theoretical coherence when we apply counterfactuals for dealing with limited diversity. This means that we accept only theoretically coherent counterfactuals and that we judge the adequacy of counterfactuals also by its consequences on the solution formula. A counterfactual should be included, if it contributes to theoretically coherent solution terms; and it should not be included if it contributes to theoretically incoherent solution terms. Furthermore, theoretical coherence within the solution terms is also the

[9] Baumgartner (2015: 845) argues «(a) Boolean difference-maker is necessary but not sufficient for being a cause", but instead of arguing that we need a theory which makes sense out of the data, he is concerned only with the quality of data: "Only Boolean difference-makers in data that meet required quality standards can reliably be inferred to be causes" (same page).

[10] Due to space restrictions, I cannot further lay out the specific strategies for securing valid concretizations through specific strategies of calibration. The core messages are indicated in the table.

goal when we decide about the inclusion/exclusion of cases and about whether we include conditions in our causal model or describe them as scope conditions.

Let me end up these brief reflections, which we will develop further in a current research project, with two messages. Those who argue that CCA is a methodology that is strictly limited to finding Boolean difference makers are wrong. We do not need a different algorithmic foundation, since we find many places within the overall process of data creation and data analysis where we can implement a dose of meaningfulness in order to make CCA a methodology that can test (and develop) theories. On the other hand, those who favour more meaningful understandings and applications of CCA should develop a more coherent and consistent recipe for doing so. One of the most important prerequisites is to overcome the assumption that CCA is a "case-centred" methodology. If one strives for making a contribution to the theoretical discourse, it is not adequate to search for coherence (meaningfulness) in specific cases; nor is it adequate to imply that CCA is an extension of the Comparable Cases Strategy (CCS) or has the same goals as the two methodologies that rely on within-case analysis (CPT and CON).

4.2 (Causal-)Process Tracing and Congruence Analysis: Language, Logic and Baysianism

In this section, I will briefly indicate how the conceptual field that has been laid out in this paper helps to disentangle the various methodologies that rely on within-case analysis. First, I will argue that methodologists who adhere not only to the rules of logic but are also sensitive to the linguistic implications of terminology should distinguish a methodology in which timing and causal mechanisms take center stage (therefore correctly labelled Causal-Process Tracing) from a methodology in which the rivalry between a multiplicity of potential explanations is at the heart of the methodological endeavor (adequately labelled Congruence Analysis). Second, I will show that single-minded truth-seekers apply the terminology of necessary and sufficient conditions in order to introduce a logical foundation for the interpretative link between concrete observations and abstract conclusions. In contrast, those who combine truth-seeking with sense-making introduce the terminology of necessary and sufficient conditions as part of their endeavor to specify the meaning of "causal mechanism." The former camp introduces the term "smoking gun test" for signaling a specific logical connection between an observation and a hypothesis; the latter use the word "smoking gun observations" for pointing to realist/naturalist foundation of a methodology in which processes take center stage: temporal continuity (and socio-spatial contiguity). Third, those who put the rivalry between different potential explanations into the heart of the methodology have turned towards Bayesianism. The empiricist route for doing so culminates in the advice that the ex-ante probability of each observation should be quantified for each hypothesis. Theorists, in contrast, argue that we reflect on the ex-ante propensity of theories (in contrast to single hypotheses) to explain the case(s) under investigation. Whereas the former turn towards information from the case for justifying their assumed probabilities, the latter reflect on the standing of theories in the scientific discourse.

As pointed out before (Blatter 2012, Blatter and Haverland 2014, Blatter, Langer and Wagemann 2016), a sensitivity to language in one among the many reasons for differentiating Causal-Process Tracing (CPT) and Congruence Analysis (CON) instead of lumping together all approaches and techniques which rely on within-case analysis under the term "process tracing". A methodology that takes the term "process" serious, must take into account the role of timing and sequences in its attempt to pin down causation. This is the case with CPT as

described by Blatter and Haverland (2014) and in many but certainly not all descriptions of "process tracing".[11] If we focus our within-cases analysis on discriminating among divergent explanations, this often involves a look at processes but it goes beyond this aspect and does not necessitates it. The term "congruence analysis" is capturing the core aspect of the method of data analysis much better than "process tracing". And it is not just a sensitivity to terminology and language that speaks in favor of differentiating between CPT and CON. Such a differentiation enlarges the tool-box of qualitative methodologies, and it allows to make each methodology internally more consistent and externally more coherently embedded in respect to epistemology and ontology.

All methodologists who attempt to make process tracing/CPT more reflective have been inspired by the terminology of necessity and sufficiency which forms a part of the foundation of Configurational Comparative Analysis (CCA). Adherents of a formalist understanding of causation have reformulated the tests that Van Evera (1997: 31-2) had introduced in the methodological discourse in the terminology of necessity and sufficiency. Bennett (2008, 2010), Collier (2011), and Mahoney (2012) describe four kinds of tests as core features of their understanding of "process tracing": "hoop tests", "smoking gun tests", "straw in the wind tests" and "doubly decisive tests." In his 2008 article, Bennett keeps his wordings close to Van Evera and labels the two dimensions on which the distinction between the four tests relies "certainty" and "uniqueness:" "Unique predictions are those accounted for only by one of the theories under consideration, while certain predictions are those that must be unequivocally and inexorably true if an explanation is true" (Bennett 2008: 706). In 2010, he introduces the terminology of "necessity" and "sufficiency" in order to characterize the four kinds of tests: "Hoop tests" provide a necessary but not sufficient criterion for accepting an explanation; "smoking gun tests" refer to a sufficient but not necessary criterion for confirmation; "straw in the wind tests" provide some hints but neither a necessary nor sufficient criterion for establishing or rejecting a hypothesis; and finally "double decisive tests" are based on evidence that is a necessary and sufficient condition for accepting a hypothesis (Bennett 2010: 210-11). In consequence, the terminology of necessity and sufficiency allows us to couch the reflections on the relationship between an abstract concept (cause, outcome/event or mechanism) and an empirical observation in the language of formal logic.

An alternative to such an application of necessity and sufficiency in the description of process tracing has been provided by Blatter and Haverland (2014: 95-97). They do not use these logical terms on the epistemological level, but on the ontological level, in as much as they define causal mechanisms as configurations of social mechanisms, whereby each social mechanism is a necessary but individually not sufficient part of a causal mechanism which in its entirety is sufficient for producing a concrete outcome (which does not imply that the causal mechanism is always necessary for similar kinds of outcome).

Mahoney's description of Van Evera's tests seems to integrate both perspectives since he introduces the terms "necessary conditions" and "sufficient conditions" both on an ontological and on the epistemological level (Mahoney 2012: 573). In the epistemological realm, he follows Bennett and defines the tests in terms of sufficiency and necessity. He adds that the explanatory factors which are gauged by these tests are themselves conceptualized as necessary and/or sufficient conditions. Nevertheless, Mahoney's approach is still purely

[11] For example, when Brady, Collier, and Seawright (2006) illustrate "process tracing" they provide examples from Political Science in which timing plays a major role in the explanatory endeavour. Nevertheless, that is not the case with their examples outside of Political Science (ibid. 360-5).

committed to truth seeking. On the ontological level, he introduces necessary and sufficient conditions as "generalizations" – implying that these factors have these characteristics based on cross-case analysis within a specific population. In contrast, Blatter and Haverland, imply only that the individual factors are necessary and together sufficient for the effect in the case under study. Furthermore, Mahoney ignores "configurational thinking" which is not only at the heart a meaningful applications of CCA, but which forms the core of Blatter and Haverland's definition of causal mechanism.[12] Only the latter paves the way towards a more holistic understanding of causation; and only a methodology the aims to trace causal mechanisms as a sequence of social mechanisms, which connect causal factors on divergent level of analysis, satisfies those who want to have explanations that are not only true but make sense, as well.

The differences between pure truth-seeking and its alternative are getting obvious at a point where we can detect some terminological overlap. As laid out, those who want to introduce formal logic into the task of linking concrete observations to abstract conclusions call it a "smoking gun test" when they argue that an observation is a sufficient (albeit not necessary) condition for confirming a hypothesis. The alternative camp introduced the notion of "smoking gun observations" for a specific bundle of observations that provide a high level of certainty for a causal inference: The higher the level of descriptive density (the more observations indicate the temporal continuity and the socio-spatial contiguity between cause and effect) which is provided by the bundle of observations, the more one can be certain that the cause has produced the effect (= the more one can assume that the cause is sufficient for the effect). As a first difference we once again detect that the first approach is elementaristic whereas the second one is configurational. It is one single observation that takes centre stage in smoking gun tests, whereas a smoking gun observations consists of multiple observations which have to complement each other in order to fulfil their function as strong evidence. As a second difference, we detect that the first approach implies a deterministic relationship between concrete observations and abstract conclusions, whereas the latter only a probabilistic one. First attempts to apply the guidelines of the first camp in practise brought devastating insights: Tasha Fairfields does not only report that the deterministic presumption are almost never adequate, but she argues that an elementaristic approach to evidence is counterproductive: "… highly formalized and fine-grained analysis ironically may obscure rather than clarify causal inference" (Fairfield 2015: 49).

The introduction of Baysianism into the description of process tracing has followed similar trajectories. As it is the case with the logic of necessity and sufficiency, with Bayesianism methodologists have transferred ideas which had become fancy in methodologies that rely on cross-case analysis to methodologies that are based on within-case analysis. Also here, we can detect and differentiate an empiricist and a theory-oriented way of using Bayesian reasoning to make within-case analysis more systematic and reflective. The empiricists introduced Bayesianism in order to sharpen the methodology of process tracing and they focus on the rivalry between specific hypotheses which are located on a low level of abstraction (Bennett 2008, 2015). Theory-oriented methodologists, in contrast, pointed to the similarities between

[12] He mentions this aspect in passing – «I explore how analysts make these inferences by looking at diagnostic pieces of evidence – usually understood as part of a temporal sequence of events – that have probative value in supporting or overturning conclusions about descriptive and explanatory hypotheses» (Mahoney 2012: 571). Nevertheless, neither temporality nor configurational causation plays any significant role in his reflections on process tracing.

Bayesian reasoning and attempts to select "crucial cases" and to draw generalizing conclusion from the results of the studied cases to the theoretical discourse within the methodology of Congruence Analysis (Blatter and Haverland 2014: 176-178, 198-200). And once again, we can use our conceptual field in order to highlight the fundamental differences between these two ways of infusing Bayesian thinking into within-case analysis: the empiricist pathway is elementaristic – for each observation and each hypothesis one has to assign ex-ante probabilities based on case knowledge. In contrast, the theoretical approach is holistic: it reflects ex-ante on the likeliness of entire theories to explain entire cases. Fairfield's attempt to apply Bayesian reasoning in line with the empiricist approach has not brought similar devastating insights as it has been the case with the tests that rely on necessary and/or sufficient observations, but she indicates that this approach is often infeasible and an insistence on it would endanger the practicability of within-case analysis (Fairfield 2015: 50). Even more important seems to be another observation: if we look at the examples that the empiricists introduce in order to illustrate their understanding of within-case analysis, it is becoming very obvious that these techniques drive political scientists to become historians: the goal is to clarify explanatory disputes about very specific and concrete incidents in history and the causal mechanisms that are introduced and tested are almost always very idiosyncratic. Those who propose Congruence Analysis as an alternative methodology for within-case analysis, in contrast, use examples in which the explanatory approaches and the mechanisms are aligned to major theories and research paradigms. For me, it is clear, which of the two versions of within-case analysis is more promising for contributing to the cumulation of knowledge. But this preference might be due to the fact that I combine an interest in methodology with an interest in basic (normative and positive) social science theory, or because I am a continental European scholar – a species that usually shows more inclinations towards holistic theories than the pragmatic Anglo-Saxons. In consequence, I would like to end up with emphasizing that the conceptual field that I developed in this paper does not have to be used for discriminating among ideal-types within or across methodologies. Each ideal-type represents an internally consistent and externally coherent methodology. This means that no methodology and no internal variant is better than the other per se. Instead, they strive for different goals - and only after we selected a specific goal, we can indeed specify which methodology is better than the other.

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