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An Essay towards solving a Problem in the Paradigms of Policy Change

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AN ESSAY TOWARDS SOLVING A PROBLEM IN THE PARADIGMS OF POLICY CHANGE¹

I. Introduction

Combining ideational and institutional paradigms when explaining policy change is – figuratively speaking – a *double-edged sword*.² Promising, because ideational perspectives expose the limitations of traditional institutionalist claims as they show how actors can overcome exogenously given preferences and fixed institutional structures. At the same time, when merging distinct analytical approaches researchers pay what Lieberman (2002: 698) terms „*analytical costs*“ by risking a lack of systematic rigour and confirmation bias. To put it in Thomas Bayes’ words: *Given* the problem of seemingly competing approaches to explaining policy change: *Required* a methodological framework that systematically accounts for both perspectives.

Drawing on Bayes’ logic of inference, I propose a two-step process-tracing approach that considers ideational and institutional mechanisms within a single framework by assessing their relative (and potentially equifinal) explanatory power. This implies that besides hypothesizing *how* and *when* ideas influence policy change, researchers also need to evaluate *how likely* their hypothesized causal explanation is, given the empirical evidence at hand.

To illustrate this claim, the essay is structured as follows. I begin by outlining the main arguments of Hall (1993), Blyth (2001), Hansen & King (2001), Lieberman (2002) and Mandelkern & Shalev (2010) from an analytical point of view and then briefly discuss why the latter two hint at major shortcomings of multi-paradigmatic approaches. I then demonstrate how Bayesian inference – as (implicitly) found in many applications of causal process-tracing – provides a fruitful solution to the problem of multiple analytical paradigms in policy research.

II. Bridging the gap between ideas and institutions: Promises and pitfalls

Ideational theories seek to explain policy change where institutionalism falls short. By focussing on „*the meanings, interpretations, and judgments [actors] attach to events and*

¹ The title of this essay references Thomas Bayes’ (1763) seminal work on the conditional probability of events.

² To maintain textual clarity, I subsume all (neo-)institutional approaches under the general term *institutionalism*. Moreover, the argumentation in this essay is not limited to institutional or ideational paradigms *per se* but can be applied to further analytical approaches as well.

conditions“ (Lieberman 2002: 697), ideational scholars try to show how ideas matter in political processes. While institutionalist theories emphasize the role of fixed institutional structures in constraining the actors’ actions and behaviour, they do not account for subjective interpretations of political structures. Ideationalism, on the other hand, takes the heterogeneity of individual conceptions and beliefs into account by assuming that actors can overcome institutional structures and thus exogenously induced (and possibly changing) interests as well.

The articles of Hall (1993), Blyth (2001), Hansen & King (2001), Lieberman (2002) and Mandelkern & Shalev (2010) tie in with this criticism of institutionalist literature. Among those scholars, Hall (1993) was the first to identify state-centric and state-structural theories as two coexisting research programs in comparative politics at the beginning of the 1990s. Although theories of the state address issues such as actors’ interests and path-dependencies of national policies, Hall argues, the process of policymaking largely remains a „*black box*“ (1993: 275). To open up this black box, Blyth (2001: 5) emphasizes the role of ideas as a mediating variable between changing economic structures and subsequent changes in policy. Hansen & King (2001: 239) extend Blyth’s rather lopsided approach by stressing the causal relevance of synergy effects between actors’ structurally determined interests and their respective ideas that evoke institutional change. Lieberman (2002) argues in line with Hansen & King and hints at shortcomings of both institutional and ideational approaches. Consequently, he also sees the key to explaining processes of policy change in the interplay between patterns of ideationalism and institutionalism and in the „*friction*“ (2002: 698) their encounter generates.

As a result of this analytical progress, contemporary scholars call for methodological frameworks that account for the interlinkage of ideational and institutional approaches. As indicated above, Hansen & King (2001: 257-60) and Lieberman (2002: 704-5), in particular, highlight the notion of ideas and institutional structures as complementary factors of policy change. Moreover, Lieberman (2002: 709) stresses the importance of the „*match between idea and moment*“, i.e. policy change will only occur if there is a convergence between actors’ ideas, interests and institutional opportunities. Following Hansen & King’s and Lieberman’s reasoning, researchers are encouraged to adopt a configurative view of policy processes to focus on causal conjunctions of explanatory factors within their respective historical context.

To assess the causal influence of ideational and institutional factors, all previously mentioned authors proceed in a similar manner by conducting in-depth case studies. Three

out of the five articles address macroeconomic policymaking: Hall, who revises Heclo's (1974) concept of social learning, traces British policy changes during the years 1970 to 1989, Blyth examines the transformation of the so-called *Swedish model* of economic regulation and Mandelkern & Shalev study two attempts for economic reform in Israel – the *dollarization plan* (1983) and the *stabilization plan* (1985) of which the first one failed, whereas the latter succeeded. Turning towards socio-political puzzles instead, Hansen & King (2001: 242) evaluate the impact of eugenic ideas on British and US-American public policies as two cases of national policymaking where institutionalist theories provide seemingly insufficient explanations of the respective outcome. Lieberman, on the other hand, tries to shed light on the Civil Rights Act of 1964 which aimed at ending racial segregation in the United States. In short, the selected articles not only emphasize that ideas matter but try to show *how* and *when* ideas influence national policymaking by tracing within-case policy processes.

In doing so, all five narrative approaches (implicitly) reflect the conception of causal mechanisms as fundamental parts of a causal explanation upon which process-tracing analyses build.³ *Process-tracing* refers to a case study method that draws on the idea that a certain outcome of interest resulted from a combination of explanatory factors in a specific configuration. Generally speaking, process-tracing seeks to identify typical and possibly equifinal configurations of causal factors by analyzing the sequential unfolding of important actions and events which then reveal the underlying causal mechanisms. Thus, *mechanisms* are „*the cogs and wheels*“ (Hedström & Ylikoski 2010: 50) which link an outcome to its putative cause(s).

Even though the use of causal process-tracing enables researchers to account for ideational and institutional mechanisms at the same time, Lieberman (2002) and Mandelkern & Shalev (2010) hint at two major shortcomings of multi-paradigmatic approaches. Firstly, as Lieberman (2002: 698) points out, merging distinct paradigms entails the risk of losing analytical rigour by (non-systematically) combining seemingly competing theories which might lead to fuzziness and conceptual stretching. Additionally, it also raises the question of whether the findings from the empirical case under scrutiny can be generalized to a larger set of cases. Secondly, qualitative within-case analyses generally induce the risk of confirmation bias, i.e. the tendency to search for empirical evidence that confirms the researchers' hypothesized causal explanations. Hence, whether

³ Hansen & King (2001: 242-43) explicitly mention their use of process-tracing analysis to detect the causal mechanism between ideas and public policies.

intentionally or not, omitting potentially disconfirming empirical evidence not only threatens the internal validity of the researchers' findings but also reduces their external validity. Mandelkern & Shalev (2010: 469) most likely allude to this when observing the „[c]onspicuous“ absence of crucial explanatory parts of an institutional mechanism in Blyth's (2001) conception of ideas as key factors in interpreting the transformation of the Swedish model. Conforming to this criticism, Blyth's approach will serve as an illustrative example in the subsequent sections.

III. (Dis-)confirming hypothesized explanations: A matter of likelihood

In order to pinpoint the importance of Mandelkern & Shalev's point, consider the following thought experiment. Based on Blyth's (2001: 5) conception of ideas as a mediating factor between economic structures and institutional change, we hypothesize a competing institutionalist explanation as we assume that institutional structures influence the power of ideas by constraining their implementation. We then find a piece of evidence that seemingly confirms our hypothesized alternative explanation. This scenario allows us to draw two basic inferences. Speaking in *absolute* terms, finding this piece of evidence significantly increases the likelihood of our hypothesized institutionalist explanation being valid, whereas failing to find this evidential piece would more or less eliminate our alternative explanation altogether. Speaking in *relative* terms, finding evidence ‚confirming‘ our institutional explanation significantly weakens the likelihood of Blyth's ideational explanation being valid, whereas not finding the respective evidence would strengthen his ideational explanation. Thus, by only evaluating empirical evidence one expects to find from an ideational perspective and not assessing possibly contradicting evidence, the results will most likely be biased.

This fictitious evaluation of Blyth's methodological approach is based on the work of Van Evera which can be fruitfully applied when testing the strength of empirical evidence. Van Evera (1997: 30-34) classifies four distinct types of tests that differ according to their diagnostic weight: (1) Hoop tests, (2) Smoking-gun tests, (3) Doubly-decisive tests and (4) Straw-in-the-wind tests.⁴ The rationale behind these tests is to derive observable predictions from a hypothesized explanation about the evidence one expects to find if the explanation were true and then evaluate whether the empirical evidence at hand

⁴ The previous example corresponds to a slightly weakened version of Van Evera's doubly-decisive test. All four tests vary in their degree of *certainty* and *uniqueness* (Van Evera 1997: 31). Generally speaking, the more certain and unique an inferential test, the stronger the diagnostic weight of the underlying empirical evidence. See Bennett (2008: 706) or Collier (2011) for further information.

passes or fails the respective test. Taken together, this procedure allows researchers to (gradually) increase the explanatory power of a hypothesized explanation by (gradually) decreasing the explanatory power of competing explanations.

Closely related to Van Evera's inferential tests is the logic of Bayesian inference. Bayesian inference enables researchers to evaluate the analytical weight of empirical evidence, depending on the likelihood of finding this piece of evidence if (a part of) the hypothesized explanation were true in a case under scrutiny compared to the likelihood of finding it if an alternative explanation were true (cf. Beach & Pedersen 2013: 83-88; Bennett 2008).⁵

To make valid conclusions about the relative strength of a hypothesized explanation by means of Bayesian inference, researchers need to assess three quantities: (1) $\Pr(H)$, i.e. the *a priori* likelihood of the hypothesized explanation (H) being true, (2) $\Pr(E|H)$, i.e. the likelihood of finding a certain evidential piece (E) given the hypothesized explanation were true and (3) $\Pr(E|\neg H)$, i.e. the likelihood of finding the empirical evidence given the hypothesized explanation were *not* true. As Beach & Pedersen (2013: 85) point out, „[c]onfirmation is a matter of degree“. Thus, when using Bayesian inference in process-tracing analysis, it is important to evaluate and report all quantities, whether by discussing the *a priori* assumptions or by calculating precise scores as shown below.

After assessing the required *a priori* likelihoods, Bayes' theorem (1763) allows to compute the so-called *a posteriori* likelihood ($\Pr(H|E)$):

$$\Pr(H|E) = \frac{\Pr(E|H) \times \Pr(H)}{\Pr(E|H) \times \Pr(H) + \Pr(E|\neg H) \times \Pr(\neg H)}$$

Put less formally, the *a posteriori* likelihood provides information on the likelihood of a hypothesized explanation being true, given the available empirical evidence. Hence, the diagnostic weight of empirical evidence – as classified by its certainty and/or uniqueness (see note 4) – increases or decreases the *a posteriori* likelihood. In turn, this means that the researchers' belief in the validity of a hypothesized explanation depends on either the passing or failure of Van Evera's inferential tests.⁶

Resorting to the fictitious example from the beginning of the section, Bayesian logic allows us to (re-)assess the validity of our hypothesized institutional explanation. Based on Blyth's seemingly convincing empirical findings, we *a priori* expect the

⁵ The subsequent demonstration of Bayesian inference builds loosely on Beach & Pedersen (2013).

⁶ Which test is chosen depends on a researchers' subjective evaluation and contextual knowledge.

likelihood of our institutional explanation being true to be merely $\Pr(H) = 0.3$.⁷ In contrast, we expect Blyth's ideational explanation to be valid with an *a priori* likelihood of $\Pr(\neg H) = 0.7$. This implies that *iff* Blyth's hypothesized ideational explanation is true, it should be highly unlikely to find evidence confirming our alternative institutionalist explanation and *vice versa*. Following this logic, finding evidence for the presence of an institutionalist explanation will cast severe doubt on the validity of Blyth's ideational explanation. Suppose we indeed find empirical evidence that, at least in the Swedish case, institutional structures set up barriers to the implementation of new ideas, e.g. by analyzing previously undisclosed protocols of the Committee on Unemployment in 1927 which document how the key actors' ideas were institutionally constrained. Given our contextual knowledge, we reason that finding this piece of evidence (E) supports our hypothesized institutional explanation (H), i.e. we assume $\Pr(E|H) = 0.8$ and $\Pr(E|\neg H) = 0.2$, respectively.

Hence, the *a posteriori* likelihood can be calculated as follows:

$$\Pr(H|E) = \frac{0.8 \times 0.3}{0.8 \times 0.3 + 0.2 \times 0.7} = 0.63$$

In other words: Prior to finding said empirical evidence, the *a priori* likelihood of our alternative explanation being valid was merely 0.3, whereas the *a posteriori* likelihood increases our belief in this explanation to 0.63. Contrary to prior belief, we are now relatively confident that our alternative explanation is valid which in turn decreases the explanatory power of Blyth's explanation significantly.

In sum, the logic of Bayesian inference provides additional benefits in critically evaluating the analytical approaches of Hall, Blyth, Hansen & King, Lieberman and Mandelkern & Shalev by assessing the likelihood of finding certain pieces of evidence if their proposed (ideational) explanations were true versus the likelihood of finding this evidence if alternative explanations were true. Hence, applying Bayesian inference allows researchers to systematically disclose the diagnostic weight of empirical evidence and to enhance the transparency of causal inferences, which then reduces the risk of confirmation bias and increases the validity of hypothesized explanations with regard to the case(s) under scrutiny.

Irrespective of the methodological strengths of Bayesian inference, one point remains open. Strictly speaking, ultimately (dis-)confirming an institutional explanation relative to Blyth's ideational explanation is only feasible *iff* both explanations are mutually exclusive. This assumption seems to undermine both Hansen & King's and Lieberman's

⁷ The exact figures serve as an example. See Tannenwald (2005) for a similar, albeit nonmathematical, approach on testing ideational versus material factors in explaining policy change.

call for a unified framework and a fundamental understanding of causal process-tracing – the notion of *equifinality*, i.e. the possibility of concurrent mechanisms leading to the same outcome. The final section addresses this concern.

IV. Tracing Bayesian likelihoods: Causal mechanisms and equifinality matter

To systematically account for either conjunct or equifinal institutional and ideational factors within one methodological framework, it is helpful to distinguish between *mechanism-based* and *Bayesian-inspired* process-tracing.⁸ Recall that in ‘traditional’ process-tracing, causal mechanisms are the basic elements of a hypothesized causal explanation that link putative (and possible equifinal) causes in a specific configuration to an observed outcome. In contrast, the logic of Bayesian inference – as demonstrated in the previous section – is used in process-tracing analyses to strengthen the validity of a hypothesized explanation by weakening the explanatory power of competing explanations. This brief description illustrates that mechanism-based process-tracing seeks to generate theoretical explanations by tracing causal mechanisms and their respective configurations, whereas Bayesian inference allows to comparatively test said explanations, given the empirical evidence at hand.

Thus, instead of choosing one variant of process-tracing over the other, researchers should systematically apply both variants in a two-step approach to increase the overall validity of their empirical findings. In a first step, researchers should use mechanism-based process-tracing to conceptualize X and Y within a specific historical context and to reconstruct the causal chain leading from X to Y. That is, in case of ideational and institutional factors being present, by identifying either the conjunct or equifinal mechanisms that cause policy changes. In a second step, researchers should then validate their hypothesized explanation from the first part by using Bayesian logic to test its relative explanatory power based on the empirical evidence at hand. Taken together, both variants of causal process-tracing allow for theory-generating and theory-testing analyses at the same time – systematically within one unified methodological framework.

⁸ Thanks to Wolfgang Seibel for the terminological clarification on this distinction. The underlying idea is similar to the view of Bennett (2008) who regards causal process-tracing and the logic of Bayesian inference – while sharing many similarities – as two distinct approaches which both rely either implicitly (process-tracing) or explicitly (Bayesian logic) on Van Evera’s inferential tests.

V. Conclusion

This essay emphasized the importance of systematically assessing the relative strength of – either conjunct or equifinal – causal mechanisms by applying Bayesian inferential logic in a two-step process-tracing approach. In doing so, researchers can draw on multiple analytical paradigms to explain policy change without suffering from confirmation bias or a lack of systematic rigour. Generally speaking, by accounting for the likelihood of given empirical evidence, researchers can use the potentials of bridging the gap between ideationalism and institutionalism while avoiding the apparent pitfalls that Lieberman and Mandelkern & Shalev mention.

To conclude by coming full circle in Bayesian terms: *Given* a hypothesized mechanism being at work: *Required* the likelihood of finding empirical evidence to (dis-)confirm the validity of the respective explanation relative to an alternative explanation being true. Nonetheless, to what extent the validity of Hall's, Blyth's, Hansen & King's, Lieberman's and Mandelkern & Shalev's ideational approaches can be enhanced via Bayesian logic needs to be discussed in future research.

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