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**Using Analytic Narratives in Policy Analysis:
An Explanation of the Implementation of the Water Reform in Italy (1994-2002)**

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Draft

Abstract

Various critiques have been made of the analytic narrative, which is a methodological approach that combines historically oriented research with rational choice models. This paper discusses strengths and limitations of the approach and provides some suggestions for its inclusion in the repertoire of methodological tools at disposal for comparative policy studies. The argument is supported by evidence provided by the case study of the implementation of the water reform in Italy in the period 1994-2002. The case study shows how the interplay of game theoretic modeling and historical analysis results in the formulation of tentative hypotheses for explaining variation in the observed trajectory of policy reform implementation across time and space.

Keywords: Analytic narratives, game theory, policy reform implementation.

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Analytic narrative is a methodological approach that aims to reconcile the use of historical and comparative research with rational choice models (Bates et al. 1998, 2000, Levi 2002). Building on the work of Douglass C. North (1981, 1990, 1996), analytic narratives intend to explain social outcomes on the basis of constraints and incentives provided by institutions, which are understood as self-enforcing equilibria that coordinate behavior. Analytic narratives – as the phrase suggests – brings together analysis and narrative (Levi 2002). The analysis part consists of building models derived from rational choice, particularly in the form of extensive form games. The narrative part provides the detailed and textured account of context and processes, especially with a focused concern on sequence and temporality. Taken together, the analytic narrative contributes explaining a chosen problem or puzzle by building a model “to explicate the logic of the explanation”, “to elucidate the key decision points and possibilities”, and finally to evaluate the model “through comparative statics and the testable implications the model generates” (Levi 2002: 6).

As a research approach, the combination of rational choice with case study narratives (especially in the form of game theoretic modeling) has been often applied in works done in political science. Instances of such an approach can be found in Kenneth Schultz's (2001) study of the Fashoda crisis in 1889, Frank C. Zagare's (2009) work on explaining the outbreak of the 1914 war in Europe, and Jay Ulfelder's (2010) oeuvre on dilemmas of democratization. Other examples within the study of the policy process include Claudio Radaelli's (1998) research on the search for coordination in international tax policy, Oliver James' (2003) book on the creation of executive agencies in the UK, Shlomo Mizrahi's (2004) examination of water policy in Israel, and Araral's (2009, 2006) works on the strategic interaction between donors and bureaucrats and on the political economy of policy reform in the Philippines. Setting aside these (and other) notable examples, however, it is probably fair to assess that the analytic narrative approach has not been widely employed as a research strategy so far. When it has been used, it has been often put into practice by following the assumptions and the deductive logic of rational choice institutionalism as an argumentative heuristics, rather than by developing formal game theoretic models (Bennett and Elman, 2006). This state of affairs is relatively surprising, provided that both the contribution of case study research and of formal modeling to advancing our understanding of the political and policy processes are generally acknowledged (Fiorina 1975, Moe

1979, Morrow 1994, Büthe 2002, Steinberg 2007, Clarke and Primo 2012).

This paper builds on the presumption that analytic narratives could be more widely used in public policy research (including the one of comparative sort) if researchers are more aware of the strengths and limitations of the approach and of the circumstances where it can be most effective. One reason for the limited diffusion of the approach may be related to the limited number of “showcases” in the scholarly literature that expose the use of analytical narratives for explaining paths and outcomes of the public policy cycle. In order to help fixing this state of affairs, this paper aims to use the analytic narrative approach for explaining a particular episode in contemporary policy history, namely the implementation of the 1994 water reform in Italy.

The rest of the paper is organized as follows. Next section will review the analytic narrative approach and outline some of its strengths and limitations. Section three will illustrate the research design of the water reform implementation case study. Section four will present the analytic narrative of the case, which – in a typical style of writing of the approach (e.g., Greif, 1998) – goes back and forth between the historical narrative of the episode and discussion of formal game theoretic modeling. Finally, section five will discuss the findings of the case study and the implications for advancing the use of the analytic narrative approach in scholarly inquiry.

Theoretical Background: Analytic Narratives and Its Critiques

Analytic narratives are a theoretical approach that aims to show how social outcomes consist of self-enforcing equilibria that result from the strategic interaction between actors (Bates et al. 2000, Levi 2002). The approach is typically applied by extracting key players, their goals, and the features of the environment that influence actors' behavior (especially the rules of interaction, the constraints, and the incentives) from narratives of social episodes, and then by defining game theoretic models tailored to the specific situations (Levi 2002: 112). Game theoretic models result in sub-game perfect equilibria that are compared to the observed behavior. In case of mismatch between the model equilibria and the observed behavior, the researcher can revise the model in order to single out the features that better account for the observed pattern of choice. Following this method, the researcher proceeds “back and forth between the model and the data, testing our ideas against reality” (Bates et al. 2000: 700). The approach, therefore, reformulates the issue of explaining social episodes in terms of showing what caused a “shift from an institutional equilibrium at one point in time to a different institutional

equilibrium at a different point in time” (Levi 2002: 111).

Since its formulation (Bates et al. 1998), the analytic narrative approach has been subjected to various critiques. Elster's (2000) argued that the recourse to rational choice theory is inadequate because people may not conform to canons of instrumental rationality. He questioned whether one can believe that actors are able to perform complicated reasoning through inter-dependent (nested) games and infinite time horizons, why concerns for fairness or emotions should not play any role in actors' decisions, and in what sense preferences could be attributed to aggregate actors. He noticed that analytic narratives are not persuasive if little or no evidence is provided for the “mental states” of individuals within the described choice settings. He also condemned the explanatory logic of constructing models where the case outcome is “explained” by matching the observed behavior with the result of choices of actors who seek to maximize suitably defined interests. Bates et al. (2000a) addressed Elster's critique by arguing that analytic narratives do not necessarily entail the assumption of instrumental rationality only. Alternatively, researchers can use any theory of choice, provided that it is sufficiently developed to provide a consistent technique for deducing behavior. They also noticed that some rational choice theorists recommend that the researchers develop a “hermeneutic understanding” of the experience studied. They objected to Elster's argument that little evidence is provided for individual's “mental states” by pointing out that intentions are too difficult to discern and, accordingly, rational choice theorists rightly rely on revealed preferences and behavior. They admitted, in part, that Elster's point about giving up the “postulate of hyperrationality” is persuasive, but they also contended that the assumption that actors' behavior is instrumentally rational enables parsimonious explanations of case outcomes that would not be significantly affected or enriched if embracing bounded rationality.

Other critiques to analytic narratives have been raised, within a Symposium issue of *Social Science History* (2000), by Daniel Carpenter, Sunita Parikh, and Theda Skocpol. Bates et al. (2006b) replied to their comments by acknowledging that the analytic narrative approach was still in its infancy and that it constituted an attempt to provide researchers with a more disciplined and rigorous way of constructing explanations of specific episodes of history. They admitted that “showcase” examples of analytic narratives contained in their 1998 book might not fully appeal to the aesthetic sense of historians, because the inclusion of models spoiled the narratives of their literary appeal. In addition, they also acknowledged that the focused concern of the cases included in the 1998 book on particular

historical and social puzzles could convey the sense that analytic narratives are directed to very specialized audiences only. The analytic narratives contained in Bates et al. (1998), indeed, bear the risk to remain relatively circumscribed within the narrow task of explaining particular episodes in history rather than contributing or calling for a wider cumulative research program.

Other sources of criticism to analytic narratives have focused on the extent to which findings of this approach result in generalizing theoretical arguments. Levi (2002) acknowledged that the aim of analytic narratives is to “go beyond” explaining particular cases and to elaborate more general conditions for institutional change. When it comes to matters of research design, however, analytic narratives tend to focus on explaining path and outcomes of particular episodes in history that often reflect researchers’ specific interests, but typically they do not explicitly contribute to wider research efforts to theorize about social phenomena. Admittedly, the criteria for case selection used by analytic narrativists “are closer to that of the historian than of generalizing social scientists” (Levi 2002: 7). This feature of the analytic narrative approach may be one that calls for more urgent repair. Of course, nothing prevents researchers who are specialists in particular areas of social science to employ analytic narratives to explain singular occurrences across history and world regions. If the aim of theorizing about conditions for institutional change is to be attained, however, the analytic narrative approach should be more attentive to issues of research design and case selection.

Provided that sources of criticism are persuasively addressed, analytic narratives offer a valuable methodological resource for contributing to theory-building efforts. By design, analytic narratives typically include exercises of “comparative static” (Levi 2002: 112), where the researcher investigates “the effects of different models and context conditions on the path and outcome of institutional change” (Bates et al. 2000b: 694). The disciplined comparison between explanations of different trajectories of institutional change (between cases or within parts of a given case, across time or locations) can provide relevant evidence for the formulation of generalizations that transcend historically focused interests. An important condition, in this respect, is that the cases are purposively selected (Ragin 1989, Ragin and Becker 1992, Stake 1995, Yin 2003, Gerring 2004, Flyvbjerg 2006, Eisenhardt and Graebner 2007). Cases studies that have been categorized by Thomas (2001) as ‘atheoretical/configurative idiographic’ (i.e., merely illustrative studies) or as ‘disciplined configurative’ (i.e., studies where established theories are used to explain a case) result in modest theoretical contributions, with respect to works that aim to identify new causal patterns, assess the

validity and scope conditions of single or competing theories, explore whether further study is necessary, or try to establish common patterns for heuristic purposes.

An Analytic Narrative of Policy Reform Implementation: Research Design

Regulatory reforms of infrastructure and utilities sectors have attracted considerable scholarly attention in the last decades (Armstrong et al. 1999, Baldwin and Cave 1999, Bishop et al. 1995, Newbery 2000, Jordana and Levi-Faur 2004, Lodge 2002, Majone 1994, 1996, Thatcher 2002). On the basis of evidence collected from episodes of regulatory reforms carried out in various sectors and countries, scholarly works highlighted what kind of regulation better fits with the technological, economic, and social features of infrastructure industries, especially in relation to the design of regulatory institutions, the involvement of private operators and investors in the delivery of infrastructure and utility services, and the removal of barriers to competition in whole sectors or in selected parts of the industry only (Eberlein 2000, Eberlein and Grande 2000, Gómez Ibáñez 2003, Joskow 1996, 1997, Kessides 2004). Relatively few studies have paid attention, however, to the implementation stage of regulatory reforms (Dinar 2000, Durant 1984, Gönenç et al. 2001, Hanf 1982, Vogel 1998). Yet, the implementation of regulatory reforms is important in order to account for the features of any new regulatory regime. Decisions and actions made during the implementation stage of regulatory reform policy cycles, in fact, may divert – and possibly significantly reshape – the design of the regulatory system originally provided by policy-makers.

The issue of how regulatory reforms of infrastructure and utilities sectors are implemented is tackled here through the case study of the episode of the implementation of the water reform in Italy in the period 1994-2002. The case is selected because of its distinguishing features that call for an explanation of variation of the reform implementation trajectory over time and across space. Moving from initial conditions that included widespread local government ownership of water firms and high fragmentation of the sector, the reform aimed to improve the sorry state of water service performance in the country by providing the centralization of water regulatory functions into new sectoral regulatory authorities (*Autorità degli Ambiti Territoriali Ottimali* or OTA authorities). The execution of the reform policy mandate, however, was significantly delayed until 1997, when the first OTA authority was established in the Alto Valdarno area in Tuscany. From 1998 onward, the implementation of the new regulatory system progressed at a faster pace: the total number of OTA authorities raised to 20 by

the end of 1998, 30 by the end of 1999, to 48 in 2000, 74 in 2001, and 87 in 2002 – out of a total number of 89 which had been provided in regional legislations.

The case of the water reform implementation presents, therefore, some intriguing features. Why was the water reform not implemented until 1997? Why, instead, did it progress faster from 1997 onwards? Why was the execution of the water reform mandate faster in Alto Valdarno than elsewhere? In part, answers to these questions may relate to the theoretical body on knowledge on policy reform implementation, that especially takes into account the role of the political confrontation between implementers and target groups (Bardach 1977, Berman 1978, Lipsky 1978, Wildavsky and Majone 1979, Mazmanian and Sabatier 1981, 1989, Sabatier 1986, Patashnik 2003, 2008). In part, answers should also take into account that, within the scenario of a multi-level governance system, sub-national governments play an important role as direct providers of public services within their respective territorial jurisdictions, bear political responsibility towards local communities, and may exercise prerogatives such as veto powers provided by the constitution and/or relevant legislation, the right to appeal to supra-national, constitutional, and administrative courts, and exclusive competences on the regulation of local public services. Such role is unmatched by the one generally played by actors (such as governmental agencies or branches of the executive) that are typically involved in implementing a policy reform in unitary countries.

The trajectory of the water reform implementation is explained here by contrasting and comparing the part of the episode in the period of inertia (1994-1997) with the one of accelerated execution of the policy reform mandate (1997-2002); and by contrasting and comparing the part of the episode related to the faster trajectory of the water reform implementation in Alto Valdarno (1994-1997) with the rest of the country in the same period. Designed as such, the case study exploits within-case variation for articulating a theoretical account of factors and conditions that are relevant for explaining the execution of – or the resistance to execute – policy reform mandates.

Data were collected from primary, secondary, and tertiary sources. Primary sources included parliamentary minutes about the making of the water reform, 35 documents issued by the national water regulatory agency (*Comitato di Vigilanza per l'Uso delle Risorse Idriche* or Supervising Committee on the Use of Water Resources), and 20 interviews with informants based in the Supervising Committee on the Use of Water Resources (4), in the local regulatory authorities (11), in the water firms (3), in the association of water firms Federgasacqua (1), and in the research center

Istituto Ricerche Sociali (1). Secondary sources included 23 reports issued by the water research centers Proacqua, proceedings of the yearly conferences 'H2Obiettivo 2000' organized by the water firms' association Federgasacqua, and 546 articles from the business press *Il Sole 24 Ore*. Tertiary sources included various scholarly works done on the water reform in Italy (Massarutto 1993, 2005, Bigatti et al., 1997, Guffanti and Merelli 1997, Muraro 2003, Gilardoni and Marangoni 2004, Anwandter and Rubino 2006a, 2006b, Citroni and Lippi 2006, Citroni et al. 2007, Lippi et al. 2008, and Danesi et al. 2008).

Data were stored and coded through the Nvivo software package. Originally, the coding frame was based on theoretically derived concepts and constructs that originated from the review of the literature on regulation and regulatory reforms. During the process of examining the empirical evidence, the coding frame was progressively amended and enriched in order to reflect the variety of the discourse carried out in the water policy community in Italy in the period between 1994 and 2002. Coded data formed the basis for the analytic narrative, which included both the writing of narratives of parts of the episode of the water reform implementation and the design of game theoretic models. The design of game theoretic models and their interplay with the historical narrative followed the methodological guidelines provided by Bates et al. (1998, 2000), Levi (2002) and Weingast (2005).

An analytic narrative of the implementation of the water reform in Italy (1994-2002)

Local governments' inertia to define the OTAs (1994-1997)

In 1994, the central government of Italy passed a reform of the country's water sector that intended to improve the sorry state of water infrastructure and water service delivery. At that time, the water industry was largely fragmented (it counted more than 23,000 firms, mostly owned by local governments) and lacked adequate investments. The reform mandated the consolidation of the sector by requiring local governments to establish new water administrative areas (*Aree Territoriali Ottimali* or OTAs) and local water regulatory authorities (OTA authorities). OTA authorities were required to assign franchises to water firms that could serve each entire OTA on competitive tender basis. The reform, therefore, contained provisions for the liberalization of water service provision and its re-regulation through mechanisms of franchise allocation rather than direct public ownership (Gómez Ibáñez 2003).

After the reform came into force, local governments were expected to formulate proposals

about the definition of the boundaries of the OTAs. This task would determine which local governments were to collaborate with which others in order to establish new water regulatory authorities at the local level (OTA authorities). The design of the OTAs and the establishment of the OTA authorities bore important implications for the governance of local water services, especially because the centralization of water regulatory functions in the OTA authorities entailed that local governments would lose a source of influence on the local water industries. Local governments had enjoyed a long tradition of direct ownership and control of water firms that dated back to the early 20th century (1903 legislation had allowed local governments to directly manage local public services). Sometimes, local politicians had exploited the control on water firms for affecting water-related jobs and public contracts, with the intention to cultivate the electoral support of local constituencies. In local politicians' perceptions, benefits from maintenance of status quo conditions could be perceived to outweigh those attached to establishing the new water regulatory institutions.

Explaining local governments' inertia (1994-1997)

Why local governments did not execute the mandate of the water reform? In order to tackle this question, we model the interaction between local governments in a game theoretic fashion. The reform statute provides that any region can enact legislation that establishes the OTAs only after local governments agree on the definition of the OTA boundaries. The agreement between local governments is conceived as an equilibrium of a coordination game, where local governments choose whether to be in accord with neighboring municipalities on the OTA boundaries or not. Let LG_i indicate any i -th local government within a region. Any LG_i plays a coordination game with an unspecified number (tens or hundreds, out of about 8,100 municipalities included in the country) of neighboring local governments. Any local government could, in principle, negotiate the definition of the OTA boundaries with any bordering and surrounding municipalities. Modeling this coordination game in detail would be particularly complex, because (a) the number of players of the game is not given (i.e., any local government can choose whether to sit at the negotiation table or not) and (b) any player can participate to several games at the same time (i.e., any local government can negotiate the definition of the OTA boundaries with different sub-sets of municipalities).

For the sake of simplicity, let us consider a scenario where two local governments only, LG_1 and LG_2 , play the coordination game. Players have infinite horizon and a time discount factor of $\delta \in$

(0,1), that is assumed constant for all players. Each local government can choose whether to agree on the definition of OTA boundaries or not. If both local governments do not agree, then they maintain the status quo and get nil payoff. If any local government chooses to agree while the other does not, then no agreement can be reached and they both get nil payoff. If both local governments agree, then the region enacts the legislation that defines the OTA and local governments expect the payoff from executing the rest of the water reform statute. This payoff includes (a) the cost C_{lg1} of losing direct control of water planning and regulatory functions (which, if the water reform is implemented, are centralized into the OTA authority), (b) the cost C_{lg2} of losing direct control of water management functions (which, if the water reform is implemented, are centralized into the water firm that gets the franchise granted by the OTA authority), and (c) the possibility to gain the benefit B_{lg1} of shared influence of larger organizations (i.e., the OTA authority, and possibly the water firm if the franchise is awarded to a firm owned by local governments). Costs (C_{lg1} and C_{lg2}) and benefits (B_{lg1}) take place at future times (t_1 , t_2 , and t_3). Hence, the payoff that each local government can be generally written in the form:

$$p_{lg} = \frac{-C_{lg1}}{(1 + \delta)^{t_1}} + \frac{-C_{lg2}}{(1 + \delta)^{t_2}} + \frac{B_{lg1}}{(1 + \delta)^{t_3}}$$

Table 1 shows the payoff matrix of the game played by the two local governments. If p_{lg} is negative, then the strategy not to define the OTA boundaries (ND) weakly dominates the strategy to define the OTA boundaries (D) and the game presents a Nash equilibrium (ND, ND). If p_{lg} is positive, then strategy D weakly dominates strategy ND and the game has two Nash equilibria, (D, D) and (ND, ND). Obviously, the value of p_{lg} is higher – *ceteris paribus* – if local governments believe that pooling together water management into larger firms results in greater benefits, that the loss of control of water planning and regulatory functions is small, that benefits materialize relatively early with respect to costs, and the discount rate is relatively low. What is interesting to notice, however, is that local governments may not come to an agreement on the definition of the OTA boundaries even if p_{lg} is positive. The belief that p_{lg} is positive, therefore, is a necessary but not sufficient condition for an agreement to define the OTA boundaries.

< Insert Table 1 about here >

The execution of the water policy reform mandate (1997-2002)

In 1997, the central government launched a program of investments in sewage and wastewater treatment infrastructure that aimed to comply with the environmental standards set by 91/271/CE directive. The program provided that the central government would assign funds on the basis of infrastructure development plans prepared on an OTA-by-OTA basis and that, if the OTAs were not established, these water administrative areas would correspond to the territories of the provinces. Local governments, who were eager to appropriate funds for infrastructure development within their jurisdictions, started to negotiate the definition of the OTAs and the implementation of the other parts of the water reform. Within a few years, local governments came to define the OTAs all over the country (generally equating, or being very proximate to, the administrative jurisdictions of the provinces) and then they proceeded to centralize the water regulatory functions in the OTA authorities. By 2002, 87 OTA authorities had been established in the country, out of 89 OTAs that had been defined in regional legislations. While the implementation of the water reform had languished during the initial period 1994-1997, after a “turning point” in 1997 the process speeded up and resulted in the quasi-complete execution of the water policy reform mandate.

Explaining the execution of the water policy reform mandate (1997-2002)

Why did local governments accelerate the implementation of the water reform from 1997 onwards? In order to answer this first question, we model again the interaction between local governments as a coordination game in Table 2. Let us assume, for the sake of simplicity, that two local governments only (LG_1 and LG_2) are included in the same OTA. Each local government can choose whether to define the OTA (D) or not (ND). After the 1997 legislation, local governments expect that the lack of agreement to define the OTA results in the delay of the formulation of infrastructure development plans and therefore of the appropriation of funds. Let C_{lg3} be the cost for each local government in case of lack of agreement to define the OTAs. The solution to the game shown in Table 2 depends on the relative values of p_{lg} and C_{lg3} . If p_{lg} is lower than $-C_{lg3}$, then the game presents a Nash equilibrium (ND, ND). If p_{lg} is greater than $-C_{lg3}$, then the game has two Nash equilibria (D, D) and (ND, ND).

< Insert Table 2 about here >

The comparison between the two games shown in Tables 1 and 2 suggests that the launch of the infrastructure development program in 1997 might have made local governments more likely to agree to define the OTA boundaries. Under conditions included in the game shown in Table 2, in fact, local government could coordinate their strategies (D, D) even if p_{lg} is negative, insofar as it is greater than $-C_{lg3}$. The game shown in Table 2, however, also suggests that the local governments could persist in disagreeing on the definition of the OTA boundaries, if they believe that payoff p_{lg} from coordinating their strategies is negative and lower than $-C_{lg3}$, or if they believe that the counterpart is committed to the status quo. The launch of the infrastructure development program in 1997, therefore, provided an incentive (in terms of funding) to the definition of the OTAs, but – by itself – it is not sufficient to explain the acceleration of the implementation of the water reform. An additional component part of the explanation can be found, however, in a change of beliefs about the effects of implementing the water reform and the attitudes of other local governments, that originates from events that took place within a particular area of the country, in Alto Valdarno in Tuscany.

The implementation of the water reform in Alto Valdarno (1994-1997)

Differently from the rest of Italy, in part of Tuscany the implementation of the water reform proceeded at relatively fast pace. In the area called Alto Valdarno, local governments had been negotiating the centralization of water service provision since 1990 (Lobina 2005). At that time, the local government-owned gas firm Coingas, which was owned by the municipality of Arezzo, proposed to the mayor to let the firm develop into a multi-utility company operating in the gas and water industries. Supported by the center-left parties that backed up the city executive, in October 1992 Coingas submitted a plan which provided that the firm would be reincorporated as a ‘municipal company’ and would be assigned the water concessions of Arezzo and of other 24 neighboring local governments. In 1995, support for the Coingas plan dissolved after the formation of a new center-left coalition executive in Arezzo. Following the political orientation of the regional branch of the leftist party *Democratici di Sinistra* (DS), the new mayor favored the formation of mixed public-private ownership companies rather than municipal companies for managing local public services. By 1997,

Arezzo and the other local governments centralized their regulatory functions into the Alto Valdarno OTA authority and established the mixed public-private ownership company *Nuove Acque* with selected business partners (a consortium led by Suez-Lyonnaise des Eaux).

The implementation of the water reform in Alto Valdarno attracted considerable attention within the water policy domain. Water policy experts spread accounts of the experience of Arezzo and other local governments, especially through the national association of municipal water and gas companies *Federgasacqua*. The “Tuscany model” – as it was called – gradually started to appeal to local governments based in other parts of the country as well, especially because it became apparent that the centralization of regulatory functions enabled local governments to retain influence on the local water industries at a larger scale than the municipal service areas.

Explaining the implementation of the water reform in Alto Valdarno (1994-1997)

The interaction between local governments in Alto Valdarno can be modeled in the same fashion of the coordination game shown in Table 1. As shown in the first part of the analysis, a positive value of p_{lg} is a necessary, albeit not sufficient, condition for the coordination between local government to define the OTA boundaries. Differently from the rest of the country, initial conditions in Alto Valdarno could play an important role in both (a) setting the value of p_{lg} as positive and (b) inducing local governments to believe that counterparts were positively inclined to coordinate to implement the water reform. Local governments of Alto Valdarno area had already negotiated the centralization of water management functions well before the enactment of the water reform. Even if the negotiation did not result in any reorganization of water service provision, local governments could form the belief that future benefits of pooling together the regulation and management of water services offset the costs of losing direct control of water firms within their respective municipal service areas. In other words, we can hypothesize that past experience of negotiation could facilitate a mechanism of emergence of cooperation (Axelrod, 1984) between local governments when they played the game to define the boundaries of the OTAs. Local governments of the Alto Valdarno area, moreover, were especially receptive of the political orientation of the regional branch of the party *Democratici di Sinistra* (DS), which favored the formation of mixed public-private ownership firms for water service provision. Local governments of the area could form the belief that the other municipalities of Alto Valdarno shared equivalent views about how to reorganize water firms. Additionally, we can argue that

not defining the OTA boundaries bore negative implications, because of the loss of the political capital that had been accumulated when forming the consensual view about pooling together the water services.

Explaining the role of Alto Valdarno in the implementation of the water reform

As already discussed, the launch of the infrastructure development program is not sufficient to explain the acceleration of the implementation of the water reform after 1997. Events that took place in Alto Valdarno in the period 1994-1997, however, may be relevant in this respect. After the establishment of the Alto Valdarno OTA authority and the formation of *Nuove Acque*, local governments all over the country became exposed to accounts of the “Tuscany model” that could make them believe that the benefits of centralizing water regulatory functions offset the costs. In addition, evidence of other local governments’ behavior could stimulate a hypothesized mechanism of imitation (Levine and Pesendorfer 2000), which helped strengthening the belief that other local governments were becoming inclined to coordinate to implement the water reform.

Conclusion: Explaining Variation across Trajectories of Public Policy Cycles

The present case study provides some evidence for explaining variety of the trajectory of the water reform implementation across time and space. The comparison between parts of the trajectory of the implementation of the water reform in Italy suggests that various factors need to be taken into account for explaining the process dynamics of implementing the policy reform. Local governments’ inertia to implement the water reform in the period 1994-1977 is especially related to initial conditions (the fragmentation of the water industry, diffused local government ownership, and local governments’ stakes in the local water industries), features of the policy content (the mandate to consolidate water services and centralize water regulatory functions), and features of the policy process (the procedural rules of the water reform statute that required cooperation between local governments). The acceleration of the water reform implementation in the period 1997-2002 is explained taking into account features of the policy content (the incentive provided by the infrastructure development program) and of the policy process (the diffusion of ideas about the centralization of water regulatory functions through the policy community of water experts). Changed beliefs of local governments towards the execution of the water policy reform mandate, moreover, have been related to the

execution of the water policy reform mandate in Alto Valdarno, whose occurrence is related to special features of initial conditions (the negotiated agreement between local governments on the centralization of water services) and of the policy process (the formation of an advocacy coalition in favor of centralizing water services).

In part, these findings from the case corroborate existing generalizing arguments about the importance of changes of institutional arrangements and positive feedback effects (Patashnik 2003, 2008) on the trajectory of policy reform implementation. In part, however, they also suggest some qualifications of previous scholarly works. The political confrontation between local governments may result in a deadlock of the policy reform implementation process, especially when conditions include the presence of a relatively large number of actors who have entrenched stakes in the reformed policy domain. In such circumstances, incentives to execute the policy reform mandate may induce reluctant implementers to become more favorably inclined towards the reform implementation. It seems, however, that (a) past experience of collaboration between the implementers and (b) the activation of brokers (McAdam et al. 2001) between different “sites” of reform implementation may help accounting for a change of beliefs of the implementers about the net benefits of the execution of the water policy mandate and the inclination of the counterparts towards the reform implementation.

The present case study suggests how analytic narratives can be employed for explaining sources of variation between different public policy cycles, or between different parts of the same policy cycle. Working through comparative statics, analytic narratives help to formulate hypotheses about the causal relationship between factors, context conditions, mechanisms, and the observed features of the policy process to be explained. The logic associated to the recourse to formal modeling helps to qualify factors and conditions as either necessary, or sufficient, or both, in order to explain variation of the policy trajectory. In addition, the attention paid to the historical evidence helps to identify possible sources of causal factors and mechanisms that are brought to bear into the tentative explanations. In an iterative fashion, similarities and differences between tentative explanations of different cases (or parts within the same case) stimulate further questions about the sources of relevant causal factors and mechanisms.

Finally, a further issue at stake is what analytic narratives can contribute in addition, or in contrast, to alternative approaches to comparative policy research. In the discipline of political science in general, several works have discussed the relative strengths and limitations of alternative theoretical

perspectives, such as rational choice (Levi 1997, Tsebelis 1990), historical institutionalism (Thelen 1999), and ideational approaches (Schmidt 2010). Similarly to other views (Katznelson and Weingast 2005), the analytic narratives approach calls for the use of conceptual resources that draw from both the rational choice and historical institutionalist perspectives. In doing so, analytic narratives build on the capacity of rational choice approach to provide relatively parsimonious explanations with respect to other theoretical approaches (Levi 1997). As discussed by Hay (2004), however, the analytical parsimony of rational choice is not conducive to explanatory or causal inferences. While the rational choice approach can be used as a heuristic analytical strategy, the recourse to the historical part of the analysis can help improving the accuracy of explanatory accounts and theoretical generalization.

These considerations may bear some relevance for the design of comparative public policy studies. Researchers may benefit from the use of formal game theoretic modeling for elucidate the assumptions about actors' preferences and beliefs and illustrate the deductive logic that results in the formulation of explanatory hypotheses. In addition, evidence provided by historical narratives can result in the re-formulation of the tentative hypothesis, and suggest the identification of factors and mechanisms associated to the observed trajectory of the policy cycle.

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Tables

Table 1. Payoff matrix of local governments' coordination game of defining the OTA boundaries (1994-1997).

		LG ₁	
		To define the OTA boundaries (D)	Not to define the OTA boundaries (ND)
LG ₂	To define the OTA boundaries (D)	p_{lg}, p_{lg}	0, 0
	Not to define the OTA boundaries (ND)	0, 0	0, 0

Table 2. Payoff matrix of local governments' coordination game of defining the OTA boundaries (1997-2002).

		LG ₁	
		To define the OTA boundaries (D)	Not to define the OTA boundaries (ND)
LG ₂	To define the OTA boundaries (D)	p_{lg}, p_{lg}	$-C_{lg3}, -C_{lg3}$
	Not to define the OTA boundaries (ND)	$-C_{lg3}, -C_{lg3}$	$-C_{lg3}, -C_{lg3}$