Political culture: a theory in search for methodology. An editorial

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> *"What is problematical about the content of the emerging world culture is its political character.*
> *Although the movement toward technology and rationality of organization appears with great uniformity throughout the world, the direction of political change is less clear. But one aspect of this new world political culture is discernible: it will be a political culture of participation. If there is a political revolution going on throughout the world, it is what might be called the participation explosion."*
> Gabriel A. Almond and Sidney Verba (1963)
> *The Civic Culture: Political Attitudes and Democracy in Five Nations,*
> Princeton University Press, p.2.

1 Introduction

Political culture theory has passed through several periods of intensive development and high interest from both social and political science research (Seligson 2002; Eckstein 1988; Elkins and Simeon 1979). Its success has been based on the explanatory power of its arguments regarding the intermediate role culture plays in the relation between the citizens and the dynamics of the polity structure, organization and operation. It has also known long periods of critics and harsh denials of its very explanatory power, philosophical backgrounds, and methodological means (Welch 2013; Steinmetz (1999); Jackman and Miller 1996; Reisinger 1995; Pateman 1971; Lijphart 1980; Dittmer 1977). One such critical aspect is that political culture theory does not actually provide for an ontology and epistemology of its own, it just suggests dimensions of comparative analysis without having fundamentally specified what it is and how it works (Welch 2013). Moreover, it employs attitude measurements and evaluations of attitudes' impact on political behavior or action deliberation without actually having provided for attitude operationalization. Attitude research has ever since developed an impressive conceptual and methodological endeavor for achieving an operational form of the attitude

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structure as it has been defined by Allport (1929, 1935). The spectacular historical development in attitude fundamental and methodological research has not been closely followed by similar efforts in political culture theory and methodological research. Another critical aspect is that political culture theory has not integrated culture and state studies in a unified conceptual and operational framework (Steinmetz 1999).

Observing the methodological developments in the political culture research and connected areas, one could expect that they would have effects on the ontological and epistemological aspects which have long been waiting for a sound approach in political culture theory. There are several possible explanations of such expectations.

One such possible explanation could regard a new view based on a new type of support—the *big data*—the advanced technologies of the artificial as well as social media provide for the approaches on political participation in both virtual and real environments, which potentially modify the classic view on mass attitudes formation and change, political identities or political involvement. Not only that attitude survey research and, consequently, attitude measurements would be substantially transformed by the new technologies and the research methodologies they support, but the fundamental, methodological, and operational research on mass attitudes emergence as well as research on attitude structural components—affect and emotions, values and beliefs—have already been re-considered, and this seems to be only the beginning of a long and sophisticated chain of changes.

Another possible explanation addresses the actual need that political culture research could employ the virtual generative experiments which provide for the simulations of the potential dynamic evolutions of society and polity by means of the *artificial societies* (Epstein and Axtell 1996) and *artificial polities* (Cederman 1997; Cioffi-Revilla and Rouleau 2010) methodologies. Though initially inspired and developed within the areas of conflict studies and international relations, these theories as well as their associated methodologies, mainly based on artificial agents, complex adaptive systems, and artificial life technologies, have seriously questioned political methodology means and, moreover, have indeed changed the research methodologies in other social sciences, like sociology and social-psychology. The impact of these radical changes has resulted in new disciplines, (i.e., *computational sociology*), and have confirmed similar phenomena which happened in economic sciences (*computational economy*) or linguistics (*computational linguistics*). A phenomenon equivalent to a "earth-quake" in the advanced technologies of the artificial which started in early 1980s and has been intensively employed in social and political research, has been felt like a "tsunami" in these areas since the classic research methodologies (that is, based exclusively on public surveys) have been almost "flooded" by the generative experiments in which data are generated and only the outcomes of simulations could be efficiently compared with those obtained by empirical means (Flache et al. 2017). This phenomenon has subtly penetrated the political methodology research (Voinea 2016), and has even confronted with the dominant classic school: experimental political science (Druckman et al. 2011). Once the methodological backgrounds were shaken up, and the door for change was slightly opened, the wave is expected in the short run to hit massively the political methodology research.

2 Political culture: theory and methodology

Ever since its foundations by Gabriel Almond and Sidney Verba in their famous book *The Civic Culture* (1963), political culture theory has employed attitude measurements as means to define the political culture as the theory about the relationship between the

individual as *citizen* and the *state* viewed as an *open polity* (Almond and Verba 1963: p. 7). Classic political culture theory has provided for the modelling of the relationship between the individuals and the state, and this has thoroughly revealed both the need for such a concept and the strong methodological constraints to achieve a model of this relationship. The reasons were complex enough to explain the "crisis" which they generated between theory and methodology in political culture theory.

One important reason was the sharping difference between the way in which attitudes have been conceptually defined (Allport 1929, p. 221; 1935, pp. 798–844; Rosenberg and Hovland 1960) and the way in which they have been measured and operationalized. While the conceptual definition allowed for the classic 'affect-belief-cognition' ('A–B–C') structure of description, the operational definition could hardly go beyond relating the statistical variables describing belief, affect, and level of information in such a way as to achieve a binary outcome of rejection/acceptance with regard to the attitudinal object. This difference has strongly stimulated the social-psychology as well as the political psychology methodology research to achieve the operationalization of the attitudes as complex structures of belief, affect, cognition and action deliberation components which could explain behaviours and action choices. Moreover, the ultimate goal has always been that of explaining the relationship between citizens' political attitudes and the dynamics of state (polity), governance, and political power. However, there is a second reason which added more complexity to the first one.

The second reason is that measurements concerning the state (polity), the political power, and the emotional phenomenology which impacts political behaviour are still waiting for a measurement theory, operationalization theory and, eventually, a modelling theory. In spite of considerable developments in these areas, the development of the research methodologies have never truly, completely answered the need for complex operational descriptions of the polity, power and emotional phenomenology, nor have they been able to adequately and completely support the explanation of the dynamic relationship between individuals' attitudes and the dynamics of state and power.

These two fundamental reasons have been strong enough to shape the orientations of research methodologies concerned with issues of political culture starting from the mid'1970s until the present days. The first and most important consequence was that in the following two or three decades after the 1970s, the methodology research purposes have divided the methodology research effort to the aim of covering each and every aspect in the attitude structure which was actually waiting for an operationalization solution: emotion, belief, cognition, and later on, symbol and meaning formation. From this perspective, what actually happened afterwards was a tremendous development of disciplinary, multidisciplinary and interdisciplinary research aimed at achieving a full operationalization of attitudes.

2.1 The idea

The idea of this *Special Issue* was to collect methodological research approaches from various areas which address the fundamental concepts and methods in political culture and which have been included (or not) in the methodological concerns of political culture theory: values and beliefs, opinions and mass attitudes dynamics, political participation, mass belief systems and political communication, emotion and collective perceptions, symbol and meaning formation, narratives and public policy, political leadership and ideology, state dynamics, political behavior, management of the commons and collective

deliberation, conflict. The methodological approaches cover relevant areas like advanced data analysis, big data, data mining and machine learning, content analysis, text analysis, narratives, agent-based modelling.

The incredible expansion of methodological research as supported by the massive advanced technologies of communication, computational simulation and modelling has created a hard-to-cover gap between method, concept and philosophy of the domain. Political culture theory would not be the only domain which does not or could hardly keep pace with this fast and overwhelming development. One should not put the blame easily on the theory itself. The reason must be sought, of course, in the domain itself and, hopefully, identify a way to define what it is and how it works. However, the reason should be sought also in its essential connections to other domains on which it heavily depends, like the democracy and state studies.

This *Special Issue* is meant to emphasize this ever expanding methodological development, its dimensions and its potential impact on the epistemology of the domain. It is also meant to warn on the methodological advances and performances which should be taken into consideration for identifying the type of knowledge and how knowledge niche research areas arise, and to evaluate (even if very briefly) the contribution of each such approach.

2.2 Justification of a special issue

More than ever before, the technological innovation offered by the computational sciences as well as the sciences of the artificial has offered support and resources for research methodologies which could essentially impact the political culture theory. The methodology research developed in many connected interdisciplinary areas like *social simulation, computational social networks, internet and big data*, to mention but few, has extended its reach far beyond the initial border of the attitude measurement and analysis. It includes now a *corpus* of (old and new) measurement theories together with empirical data on issues which have not been measured before, like emotions or political identity repertoires. The consequences of this uncommon development and subtle methodological differentiation would soon have their impact on the need for identifying sound ontological and epistemological grounds in the political culture theory. It is our purpose to underline the major lines of dynamic interdisciplinary development and thus understand where we stand in the political culture theory more than half century after it has been founded.

2.3 The subject

It is this methodological research advance and its areas of reach which makes the subject of our *Special Issue*.

Firstly, the *Special Issue* aggregates methodological approaches to some of the most common issues in political and social sciences which address either directly or indirectly the area of political culture: political behavior, political cognition, political participation, political communication, democracy (political structure and political leadership), governance (policy), nation-state, citizenship and state (political organization and state dynamics).

Secondly, the collection of the selected papers is meant to cover a considerable number of orientations in current disciplinary and interdisciplinary research focused on issues which are usually included in the definition of the political culture area: opinions, attitudes, values, beliefs, behaviors, culture, symbol, collective perceptions, and collective deliberations.

This *Special Issue* is trying to provide a comprehensive view over the dimensions of ongoing extension of the methodological developments and their potential consequences for the mid- and long-term research orientation in political culture research. We have compacted past and latest developments in the methodological research in political culture and connected areas into several quite wide fields of theoretical and methodological research: (1) *attitudes*, (2) *democracy,* (3) *state* and *governance*.

3 More often, more advanced and more convinced: a picture from within political culture methodological research

The dynamics of political phenomena proves an ever increasing complexity in approaching them. Trying to face this complexity challenge and to keep evaluating the sources of change in the society and in the state dynamics, various research communities in social and political sciences are employing more often and more convinced new types of research methodologies which are based on more advanced technologies of the artificial. One can see how sophisticated technologies, like the technologies of artificial intelligence, artificial life, and artificial societies, as well as technologies of simulation-based modelling and large-scale virtual experiments are intensively employed in research areas of political culture. Moreover, research methodologies from interdisciplinary connected areas like computational linguistics, content analysis, web semantics, semiotics, or cultural anthropology have been intensively employed in the political culture research.

Methodologies in political culture research have started to be intensively employed after the cognitive revolution and mostly starting with the 1990s. Such developments have characterized many areas outside classic original domains of political culture theory, namely political behaviour and comparative politics. Their outcomes have divided the area into, roughly, classic and external areas. While the classic area keeps its attachment to the original type of approach, the "assault" has been prepared for long time outside it. There are several areas which contribute to the domain: initially, the nation identities and nationalism and the democracy areas have divided the domain. Later, several other areas have provided for conceptual and methodological research: (1) policy and public administration, (2) democracy-building (transition to democracy and consolidation of democracy), (3) state-building (state formation, state dynamics, state failure, and state re-construction after failure).

The first main impact has been induced by the value theories which have kept the original concept and methodology, but lowered the level at which values are identified and measured as determinants of the attitudes. Value theory has produced the first main paradigmatic shift toward cultural-based social change.

From a methodological and epistemological perspective, the political culture research is a meeting place for at least three paradigms: (1) positivist and post-positivist epistemologies as inherited from the classic theory survey methodologies of collecting and analysing data based on the empirical data, (2) constructivist epistemologies based on the methodologies of complex emergent systems (agent-based systems, complex adaptive systems), and (3) culturalist and rational choice-based policy studies.

No matter if developed in its own courtyard or in some conceptual neighbourhood, research approaches on issues which are addressing political culture are emphasizing (1) a pragmatic orientation toward widening and diversifying the methodological issues, and

(2) the need for methodological considerations which could potentially offer the ground for epistemological clarifications.

In the light of these developments a methodological clarification is strongly needed: getting scattered methodological research approaches together might prove unexpected changes at the theoretical level. The point we want to make is not just a methodological one, but also epistemological. Our *Special Issue* formulates an essential question in political culture research about whether all such developments represent a proof of an enhanced ability to tackle conceptual constructions by means of advanced technologies or they just reveal a novel framework of political methodological research that is in need of an epistemological clarification: namely what is the knowledge claim of the new methodological approaches?

It was the attitude measurements-based methodology which has initially offered support for shaping a theoretical formulation of what is meant by the notion of 'political culture' and how it works. However, later on, it was this same methodology which has actually opened the political culture theory's door for change. Now and then, this change is foreshadowed by the almost overwhelming extension of the methodological research. In this *Special Issue* we have considered four relevant types of development, each of them providing support for possible further epistemological clarifications: (1) modernization and human development theory, (2) cultural theory of politics, (3) computational political culture, and (4) political anticipation and anticipatory systems for governance and society.

Since these clarifications would be offered by competing types of approaches and very much different schools of thinking in various areas of social and political sciences, they are themselves questioned with respect to their knowledge claim: Firstly, *what* type of knowledge do they provide for? Secondly, *how* do we come to acquire such knowledge?

Let us take a brief look at each of these major developments.

3.1 A theory in search for its methodology

During the mid'1960s, there were two main arguments which have been decisive in what has been called the domination of the positivist wave: one was the impact of survey methodology in sociological and comparative politics research, to mention but two most affected areas in social and political research (Berezin and Sandusky 2017). The other one regards the influence of several main schools of thinking in promoting positivist accounts on the empirical research and survey data analysis (Steinmetz 2005): Lazarsfeld's group at the Columbia University, Campbell's team at the University of Michigan, David Easton and William Riker as mentors of several generations of political scientists at Harvard (Hauptmann 2005).

Political culture theory has been conceived as a theoretical and methodological comparative analysis approach in two areas of study: national identity and the nation-state, and the democracy phenomena, including elections, political leadership, partisanship, political socialization. It was its research programmatic goal which has made meaningful its theoretical approach and has conveyed its significance to the extended research community and to the large public as well, that is, the goal of explaining the dynamics of the relationship between citizens and the state in democratic societies as a means of democratic stability. Almond and Verba's impressive cross-country research approach, *The Civic Culture* (1963), has explained and made this dynamics predictable on the basis of empirical data and political analysis. The influence of Parsons' theories on the normative aspects of social and political life as well as the influence of Weber's ideas has been decisive for guiding the

political culture theory's development under a positivist framework. This positivist background of conceptual architecture and research aims has never changed. It still stands.

Classic political culture theory avoids defining a proper ontology. The theory is based on a comparative analysis approach aiming at explaining the role citizens might play in the dynamics of governance, power and state by means of their *attitudes*, where the concept of 'attitude' is meant to cover in a most general and extensive way a wide range of "*subjective orientations*", from sentiments and emotions, to values, beliefs, cognitions, knowledge, and behavioural aspects. The type and structure of the empirical data counts as well since the theory is based on opinion survey data sets which provide for the comparative analysis at nation level such that causality between cultural and political issues can be modelled in variables correlational terms:

> Political culture research is characterized by an enormous diversity of studies on political attitudes. However, the theoretical status of a particular attitude and its […] explanatory value often remain ambiguous […] political culture presents itself as collective term […] which is analytically imprecise and hence has limited explanatory value. These two deficits appear in all criticisms regarding the concept. Yet, The Civic Culture has abetted this in two ways. First, it provides a very broad definition of political culture: namely, subjective orientations to politics. Second, the authors chose public-opinion surveys for the generation of the data set of The Civic Culture. This data collection method allows for a relatively simple analysis of individual attitudes (Fuchs 2007)

One of the most debated aspects has thus been that of causality. Classic political culture theory combines political behavior and culture at the subjective level of the individual citizen, atomizing the level on which attitudes are measured. Afterwards, these individual measurements are aggregated so that they provide for generalizations to mass attitudes. On the other hand, culture is considered as an emergent collective phenomenon (Elkins and Simeon 1979), and thus cannot be explained by simply counting or summing up individual projections. However, patterns of features could be identified such that cultures are associated in time and space with some typical community of individuals. Beyond this, the question remains: Political culture theory explains the governance dynamics by cultural means provided by the analysis of individual attitudes. As in this case the "cause" and the "effect" are of different natures (Elkins and Simeon 1979), the question is how could the theory explain the one by means of the other in statistical terms? Approaching this difficulty has resulted in repeated changes of paradigm: from systemism to methodological individualism to phenomenological individualism, from positivist to interpretivist or constructivist views.

3.1.1 Modernization and human development theory

One is concerned with theories of modernization and human development originating in Condorcet's ideas about the French Revolution, and preserving strong Parsonians and Durkheiminian roots. This development has brought to the front the concept of *value* (Inglehart et al. 2003; Welzel 2013). The approach combines the classic political culture theory with theories of social change and value theories from psychology (Schwartz 2012; Maslow 1954, 1993), sociology of culture (Rokeach 1973, 1979), theories of state-building and democracy-building after the fall of communism in the Eastern European countries in 1989 and democratic stability (Dalton and Klingemann 2007; Klingemann and Fuchs 1995;

Klingemann and Zielonka 2006; Pollak et al. 2003; Mishler and Pollack 2003; Huntington 1993), and state studies (Ellis 1997; Elazar 1970; Eckstein 1988).

These works prove a strong attachment to the classic concepts of *subjective orientations* as well as *individual* and *mass political attitudes* in political culture theory. However, while keeping in the mainstream Parsonians tradition, it succeeds to lower the classic methodological level of the political culture theory from '*attitudes'* to '*values'* as the latter takes a position of precedence with respect to the formation and change of the former in terms of causality. It is the most profound adaptation of the classic theory toward a more sound philosophical background, and what the approach suggests seems closer to an *epistemology of democracy* (Goldman and Blanchard 2015) in projecting these concepts—values, attitudes and actions as well as the relations between the individual citizen and the (democratic) state—onto the abstract level of their significance in democracy terms for the human development sequence (Welzel 2013). This theoretical development suggests an epistemology of democracy viewed and defined in terms of human action and, as intentional statement it is, most probably, closets to the original ideas of the founding fathers of political culture theory. It fits in the tradition of the ontology and sociological epistemology of human action which could be found in the works of Weber (1949), and Parsons (1968). Moreover, it reveals a deep inspiration in Lipset's ideas (1959):

> Our purpose here is not to demonstrate the impact of changing values on democracy so much as to make a point about the epistemology of survey data with important ramifications for the way we analyze democracy. Unlike dozens of articles we've published that nail down one hypothesis about one dependent variable, this piece analyzes data from almost 400 surveys to demonstrate that modernization-linked attitudes are stable attributes of given societies and are strongly linked with many important societal-level variables, ranging from civil society to democracy to gender equality (Inglehart and Welzel 2010)

Though close to some of the political culture theory's main targets, like the knowledge about democracy and the knowledge about how to keep a democracy stable and efficient in terms of governance (public policy) and relation to the citizenry, an attempt to develop it toward suggesting an epistemology of democracy in terms of human values and actions would, however, deflect the classic political culture theory from its original purpose, which is that of identifying the mechanisms and processes which explain how the citizenry and the democratic polity could substantially and, sometimes, decisively influence each other's dynamics.

3.1.2 Cultural theory of politics

The other one is a cultural theory of politics (Swedlow 2011a, b; Wildavsky 1987) which builds upon the structuralist backgrounds of Douglas' *Cultural Theory* (CT) an approach which combines culture, institutions, and political science in a theory which starts from the rationality of individual agents, their deliberative and action capacities, and the relations between individuals and institutions. The methodological approach takes into consideration the individual level (political culture) as well as the macro level (institutions) in cross-cultural contexts, and succeeds to achieve a significant explanatory power in areas which include public policy and international relations. It is of a special relevance the connection between the cultural relativist theory (Thompson et al. 2006) and the policy theory which explains the impact of the former in explaining the political conflict as well as the political

coalition formation and dynamics (Swedlow 2011a, b). This connection is important as it reveals a fundamental orientation toward meaning formation in the relationship between the individual and the institutions in policy terms and dynamics. This might help in identifying a conceptual congruence with the narrative policy theories (NPF) and also with the interpretivist theories of state and the network-based governance models (Marsh 2011). The methodologic approaches in these fields as well in their interdisciplinary areas share a fundamental interest in the dynamics of collective perceptions and meaning extraction from social and political structure suggesting as appropriate an epistemology of structural communication, meaning formation and transfer.

Aiming at explaining the subtle mechanisms of governance by cultural mechanisms, a theory of culture seems to complement the classic political culture theory with respect to the theoretical and methodological issues associated to the applications of the later to the area of governance and public administration, connecting it to both political power and public policy. In spite of its structuralist backgrounds, it suggests an epistemology of meaning. This suggestion might be reinforced by the close ties between cultural theory and narrative theories concerned with public policy.

3.1.3 Computational political culture

In between these two first developments, there is a long-claimed, strongly advocated theoretical development which reveals in political science—as well as in sociology and international relations research—a fundamental orientation toward emphasizing the dynamics of political phenomena and their complexity (Tilly 1995, 2001; McAdam et al. 2001; Goodin and Tilly 2006). The roots of this orientation should be sought in the middle-range mechanism theory (Merton 1949, 1957), and in the theories of mechanism-based explanation (Boudon 1998; Bunge 1997, 2004) which have marked the post-positivist wave. This conceptual and methodological development took political analysis and modelling from the universal law theories (Hempel 1942) to the dynamic processes and recurrence mechanisms in history-sensitive political phenomena (Tilly 1995). The developments on this dimension have revealed different philosophical backgrounds from methodological individualism to systemism. The consideration of culture in state modelling has been the result of the influence of a "culturalist turn" in both social and political sciences during the 1990s (Steinmetz 1999). It revealed the weaknesses of the modelling paradigms which employed culture in explaining state operation and state dynamics, and required a different view:

> Methodological individualism, phenomenological individualism, and system realism all have difficulty dealing with culture because they have no secure location for it. The two forms of individualism can pack bits of culture into particular human brains as preferences, cognitive filters, memories, or something of the sort, but they then lack any plausible account of culture's collective character, much less of its interdependence and systematic change. System realism faces the opposite problem: while locating culture in the aggregate as an organ of system-wide communication, control, or adaptation, it offers no credible account of cultural variability, multiplicity, conflict, and change, much less of how culture affects individual performance. (Tilly 1999: p. 410)

The paradigmatic changes in what regards state modelling dimension of political culture research has been, on the one hand, the result of the "*lack of ontologies and methodologies that are both philosophically profound and scientifically defensible*" (Pickel 2007).

On the other hand, this repeated paradigmatic shift has also revealed the difficulty of such paradigms in answering one of the most challenging research question which concerns the capacity of political culture theory to explain how order emerges, how macro-level processes and structure (institutions) could influence the micro-level behaviors and interactions?

As Tilly suggested, the appropriate developments of state theories which directly point to essential issues of political culture theory should take into consideration a relational approach (Tilly 1999: p. 419) at four levels of conceptual and methodological elaboration: citizenship, democracy, nationalism, and contentious repertoires (Tilly 1999: p. 414). Though elaborated in several fundamental works (McAdam et al. 2001; Goodin and Tilly 2006), this idea remained in theoretical qualitative terms. Notwithstanding its strong influence, the idea has not found a proper methodology, nor has it been going far beyond epistemological assumptions of critical realism. It, nevertheless, found a methodological accomplishment in what has been viewed as the computational and simulation wave in both sociology and international relations research inspired from state studies and from the generative forms theories based on Simmel' sociology (Cederman 1997). The orientation toward simulation-based research has been initially emphasized in Axelrod's Tribute Model (1997) and has been soon followed by an avalanche of agent-based methodological approaches to most variated issues in social and political sciences.

This orientation is strongly connected with a trend toward achieving a computational political science in much the same way as sociology, economics, or linguistics have experienced this dramatic transformation induced in the late 1990s and fostered during the past two or three decades by the technological innovation. Classic analysis of survey empirical data has been gradually confronted and sometimes complemented or even replaced by a generative approach which revealed that the constructivist theories took the lead during the late 1990s in social-psychology research on attitudes (Wilson et al. 2000), and simulation-based modelling research on Epstein and Axtell (1996, 2002), Axelrod (1997). Causality-based approaches made room to complexity based ones. It was the time when progress in social simulation and computational sociology has strongly influenced the political science research in the state study area (Cioffi-Revilla and Rouleau 2010), conflict studies and international relations (Axelrod 1997; Cederman 1997) such that the generative experiments of simulation-based modelling have been approached in different paradigms, like KISS (Axelrod 1997), and TASS (Ito and Yamakage 2015). All this struggling for paradigm has revealed a clear appetite for the *bottom-up* approaches in both social and political sciences, that is, a type of constructivism which has successfully addressed the emergence of structure in social and political organizations. Though not as successful in explaining the emergence of new political order, the methodological individualism and its methodological achievements in social simulation research systems has proved the capacity to explain structure emergence, which has been studied in connection with system complexity and self-organization.

This kind of methodological development suggests an epistemology of interaction. Concepts of "agency" and "interaction" could allow for the elaboration of an epistemology of society and polity as complex interaction entities able to adapt, grow or degenerate in consequence of their interactions in their spatio-temporal contexts. However, interaction alone without reflexivity and self-organization cannot provide for essential views of both society and polity. This might explain why a forth orientation has been identified and what does it offer in comparison with the others.

3.1.4 Anticipatory systems

The anticipatory systems for governance and society represent an initiative which is currently carried on by LEAP,[1] with a main focus on policymaking as a political anticipation of risk. The project develops qualitative research in anticipatory systems (Caillol 2017), a concept defined earlier by Robert Rosen (2012) and further adapted by Mihai Nadin to policy making systems (2015). An anticipatory system can be defined as a system in which "*present change of state depends upon future circumstances, rather than merely on the present or past*" (Rosen 2012: p. 5). Such systems contain models of themselves, and their behavior is characterized as anticipatory. Anticipation is a concept which originates in the interdisciplinary research in natural science and mathematics, and concerns the capacity of biological systems (living organisms) to

> generate and maintain internal predictive models of themselves and their environments, and utilize the predictions of these models about the future for purpose of control in the present. Many of the unique properties of organisms can really be understood only if these internal models are taken into account. Thus, the concept of a system with an internal predictive model seemed to offer a way to study anticipatory systems in a scientifically rigorous way. (Rosen, *Foreword* 2012: p. 5)

This concept has been further studied and formalized by Dubois (1998) who defines the anticipatory system as a system which contains a model of itself. Rosen's theory is based on an "*epistemology which defines properties of logic and mathematical structures*" (Kercel 2002, 2007) where such property, like "*impredicativity*" is described as "*every functional aspect of the model is contained within another functional component*" (Nadin 2012: p. 26)

Luhmann's theory on social systems (2012) has been inspired by the Maturana's theory on autopoietic systems (2002). Luhmann's view is based on the idea of communication. His works on social and political systems are fundamentally concerned with the transmission of meaning in structures of communication (social systems) or structures of governance (political systems). His theories suggest an epistemology of meaning as the fundamental working principle in both social and political systems.

The epistemologies of meaning are more often suggested or elaborated with concern to reflexive systems. *Reflexivity* is a concept which is intensively used in research on social media systems and on social and political systems. In socializing networks and in self-organized criticality research, reflexivity concerns the capacity of virtual systems to become (re)active to repeated contacts with other virtual active systems, that is, systems which receive messages, understand their content, and further transmit the messages in a neighbourhood of contacts. In social and political systems, reflexivity concerns systems with model-based behaviour, that is, anticipatory systems: such systems could self-organize such that a new internal order might replace an old one. It is one of the possible scenarios which political culture cannot explain so far in terms of mass attitudes and their impact on the dynamics of an open polity. Meaning formation, meaning dynamics and meaning transmission appear as basic aspects in the definition of anticipatory systems. Meaning research methodologies transcend psychological and social boundaries, and have been approached with concern to the definition and operation of macro-systems, like the polities.

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[1] European Laboratory of Political Anticipation (Laboratoire Européen d´Anticipation Politique): https://www.leap2040.eu/.

From this perspective, meaning epistemologies might be the ones to win the competition as we have described it in the previous sections and sub-sections: the main argument might be that they incur philosophical soundness in political culture theory.

There are other approaches on the ontological and epistemological choices in political culture theory. Some authors have tried to re-elaborate political culture theory on different ontological and epistemological backgrounds by introducing concepts of *discourse* and *practice* in a dual model inspired by the philosophical works of Foucault (1981) and congruent with the constructivist works on attitudes (Wilson and Hodges 1992; Wilson et al. 2000):

> The great virtue of Foucault is to have stated as strongly as it could be stated that discourse – representation, codification, categorization, prescription, and so on – has a necessarily political character. […] power is discursive in the sense that it operates through analysis and then prescription of the worker's actions. (Welch 2013, p. 173)

Other authors have elaborated more on the weaknesses and limits of political culture theory (Bove 2002).

3.2 Tendencies of methodological research developments in political culture

The aim of this Special Issue is to understand and describe the main tendencies in the area of research methodologies associated with political culture theory research. The most relevant and effective tendencies which have been selected for this Special issue are summarized in what follows. Their selection was meant to illustrate some of the ongoing relevant dimensions of the current development. It was also aimed at warning with respect to the wideness, complexity and multi-, and inter-disciplinary characteristics of the domain of theories and methodologies employed.

3.2.1 Attitude and attitude change dynamics and the relationship between attitudes and value systems and values dynamics, beliefs systems and belief (ideology) dynamics, affect dynamics, dynamics of knowledge acquisition and structuring (learning) and dynamics of cognitive processes and cultural cognitions

This tendency could be characterized as enlarging and advancing the methodologies for *dynamic attitude operationalization* and *dynamic attitude change* research. There are two main dimensions of research which dominate the picture: (1) studies of attitude change dynamics in agent-based systems, and (2) studies of attitude change dynamics in relation to the dynamics of belief systems, ideologies, values, symbols. In this volume, while the former proved fruitful in understanding scenarios of preference falsification in deliberation processes (Tena-Sanchez et al., *this volume*) or in war contexts (Mitsutsuji and Yamakage 2019), the latter type of approach prove useful in understanding the cognitive basis of attitude change dynamics. However, cognitive modelling, while appropriate to model a dynamic scenario like Brexit attitudes, could also reveal at the methodological level the lack of conceptual complexity in the political culture methodology in relating attitude change dynamics with belief dynamics, thus leaving the burden of the modelling task on the opinion dynamics modelling and social simulation agent-based methodology (Edmonds, *this volume*). This tendency addresses also the relationship between emotional phenomenology and sentiment analysis (Takikawa and Sakamoto 2019), political violence, contentious politics, social and political unrest and ethnical conflict (Lemos et al. 2019),

political discourse and ideology analysis (Maerz and Schneider 2019). This tendency also covers the need to address a complex evaluative perspective over the value system transformation in the context of major political regime change, like revolutions, in particular, the revolutions in the Eastern Europe which determined the fall of communist regimes in 1989. Cultural maps of the world prove their complexity when constructed with different statistical means and criteria (Pavlović and Todosijević 2019).

3.2.2 Emotions and ideology, meaning formation and meaning dynamics in political communication and social media, emergence of symbols

This tendency addresses the *communication* issues which influence and could appropriately explain the attitude formation and change processes. Such issues address the meaning formation and symbols' dynamics in sensitive social and political context, emotional phenomenology which influences the formation of meaning and its dynamics in political discourses and dynamic social and cultural contexts (Maerz and Schneider 2019).

3.2.3 Governance and policy public perceptions, collective perceptions, and the narratives

This tendency is mainly addressing the issues of both policy and polity dynamics by means of analysing and evaluating public perceptions and narratives which provide for attitude formation and change. This tendency also covers the need to employ modelling methodologies which provide for explanatory capabilities of both policy and polity dynamics. One major class of methodologies is that of Narratives Policy Framework (NPF) which have been intensively employed in the analysis of the relationship between policy and cultural cognition (Walter-Smith et al. 2019). Another one is that of agent-based models of institutional structures dynamics: political regimes as well as political systems achieve catastrophic behaviour generated by public perceptions revealing preference falsification in contexts of affective cognitions (Miodownik and Lustick 2019).

3.2.4 Common resources management, and community action deliberation

The need to address the complexity of management and deliberation with regard to common resources in deliberative communities induces this tendency of covering the community deliberative action choice in terms of political culture, that is, attitude formation, belief change, value consolidation/de-consolidation, etc. (Barsony et al. 2019).

3.2.5 Comparative analysis, testing, and evaluation of research methodologies and their supporting technologies

This tendency proves the need of the methodological research to achieve an integrated, advanced body of methodologies which could improve not only the performances in processing huge amounts of data, connections, and resources now available in both the physical and virtual spaces, but mainly a justification of their effectiveness in relating political culture theory with its milieu of rather independently developed methodologies which are now waiting to prove how and why they can contribute to political culture theory improvement (Ettensberger 2019). This tendency has been induced and sustained in agent-based modelling and social simulation research by some of the most relevant attempts to elaborate

comparative analysis of research methodologies (Axtell et al. 1996; Lorenz 2014). This tendency is now revealed in political culture methodology research development as a way of selecting research methodologies based on criteria of performance and effectiveness in achieving research goals defined at the political culture theory level.

4 A landscape of methodological research in political culture and connected areas

This *Special Issue* aims at identifying the extension and the impact of the new research methodologies and technologies on the political culture research outcomes and performances to answer the inquiries on the potential emergence of a computational dimension of political culture research in much the same way the computational sociology, to give but one example, has fundamentally transformed the classic domain of sociology by methodological and technological means.

A number of contributions employ *agent-based models* as a virtual laboratory to investigate political culture. The range of phenomena covered by these contributions range from changing identities to sudden collapse of political institutions and emergence of new order. It is striking, however, that many of the agent-based models apply various forms of opinion dynamics modelling and only very few approach the political attitudes modelling.

Other contributions apply *big data* technologies along with *data mining*, *machine learning* and *text mining* technologies to search for natural language patterns in political discourses. These contributions attempt at classifying political culture.

Other contribution uses *cluster analysis* of statistical patterns on the macro level of the world value surveys as provided by the most relevant database in this area.[2]

Some other contributions employ *mixed methods* approaches up to *qualitative* micro sociological analysis of ways of public life. These various approaches demonstrate the fruitfulness of recent methodological developments in political culture research in the crossing of traditional disciplinary boundaries.

4.1 Agent-based models

Two papers, one by Ian S. Lustick and Dan Miodownik and one by Francisco José León-Medina, Jordi Tena-Sánchez, and Francisco José Miguel describe agent-based models of the theory of preference falsification. The theory has been developed by the political scientist Kuran (1995). The basic idea is the well-known tendency from survey research that individuals orient their public expression of beliefs and attitudes on what is socially acceptable. This can have the consequence that their true preferences differ from their publicly expressed attitudes. Kuran uses this basic assumption for explaining political phenomena.

In their paper on "*Fakers Becoming Believers How opinion dynamics are shaped by preference falsification, impression management and coherence heuristics*", Francisco José León-Medina, Jordi Tena-Sánchez, and Francisco José Miguel provide a theoretical investigation of the theory of preference falsification by means of an agent-based model of opinion dynamics. Opinion dynamics is a long-lasting and highly active research field in the domain of agent-based modelling (Lorenz and Neumann 2018). So the authors could

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[2] World Value Survey (http://www.worldvaluesurvey.org).

rely on an already developed framework for their research. The theoretical objective of this investigation is twofold: on the one hand the authors utilize agent-based modelling for overcoming limitations of Kuran's mathematical theory such as the assumption of homogeneity of actors, or ignorance of status differentials. On the other hand, they introduce the concept of preference falsification to the research program of opinion dynamics by developing a model that is carefully grounded in psychological theory. This implies that agents might change also their private opinion. The main objective of the simulation experiments is again theoretical: studying how unanimity of public opinion emerges and the micro dynamics of the related opinion change. This is a purely theoretical objective. Indeed the authors end with remarking the possibility of a sudden collapse of pluralistic ignorance such as the Arab Spring as potential further research. This is exactly the objective of the article by Lustick and Miodownik. They utilize the theory of preference falsification for explaining the stability and a possible sudden collapse of institutions. So the end of this theoretical investigation is the beginning of the next one.

In their paper on: "*When do Institutions Suddenly Collapse? Zones of Knowledge and the Likelihood of Political Cascades*", Lustick and Miodownik utilize simulation experiments for studying the rare events of revolutionary political cascades. A huge amount of simulation experiments enables to investigate conditions for the likelihood of revolutionary cascades, by studying conditions in the parameter range in which tipping it will never occur, and others with a certain likelihood within predictable limits. The formal model enables to enhance Kuran's theory of preference falsification by specifying hidden assumptions of the theory. Lustick and Miodownik first extend Kuran's theory by introducing different agents according to their propensity to act on their genuine beliefs on a scale from activists of a "Che Guevara" kind to merely passive citizens. This is somewhat similar to Epstein's model of civil violence (Epstein 2002). Next they introduce the term "zones of knowledge" that specify the range of the neighbourhood that can be monitored by the agents. When a monitoring agent observes sufficient mobilization by others to pass its own threshold for mobilization, it mobilizes. The findings of a statistical analysis of the simulation experiments tend to support the lines of argument by small worlds theorists that middle range combinations of connectedness are more conducive to tipping points.

Also the paper of Katsuma Mitsutsuji and Susumu Yamakage on "*Dual attitudinal dynamics of public opinion: agent-based reformulation of L.F. Richardson's war-moods model*" describes an approach on public opinion dynamics, focused specifically on the attitudes towards war. Related to the theory of preference falsification also the agents in this model have public and private opinions even though the model is not specifically built on Kuran's theory. Rather, they refer to the theory of duality of public and private attitude developed by the early pioneer in complexity research, Lewis Richardson in the 1940s. The model investigates the dynamics of one specific public opinion, namely attitudes towards war. The objective is an explanation of cycles of war fever and weariness that could have been observed in Europe during the World War I, but also in the US public opinion during the wars after World War II. Whereas Richardson formulated a systems level model of differential equations analogous to models of the spreading of epidemics, Mitsutsuji and Yamakage refine Richardon's approach by an agent-based model to capture the microdynamics of opinion change. While no status differentials are implemented in this model, also here agents update their publicly expressed opinion based on observing their neighbourhood. War is represented as an external shock with an additional influence on the agents' attitudes. This relatively simple model is able to produce patterns of meta-stability of public opinion which might quickly flip to a diverse majority after long times of stability which is comparable to the war mood cycles in empirical data.

The paper on "*Co-developing beliefs and social influence networks—towards under-standing socio-cognitive processes like Brexit*" by Bruce Edmonds describes a model of opinion dynamics as well. However, the author deliberately abstains from relying on the classical framework of opinion dynamics models which is critically reviewed in this article. The central innovation of the model is a representation of the mutual influence of individual's beliefs and social structure by integrating a theory of mental coherence with processes of social network change within an agent-based model. This model structure results in very different processes than classical models of opinion dynamics (e.g. Deffuant et al. 2000; Hegselmann and Krause 2002) that typically evolve towards a stable state of either conformity or diversity of different opinion clusters like it is also the case e.g. in the model presented by León-Medina who study exactly the processes leading to unanimity in public opinions. A comparison with data opinion polls prior to the Brexit shows that these are highly volatile rather than emerging towards a stable state. This is the puzzle that Edmonds attempt to explain by integrating cognitive and social processes in a model of social intelligence. In the model the agents have links to other agents and a set of beliefs that might be more or less coherent. Agents can suggest their beliefs to other agents in their network and agents can individually drop a belief in order to increase the coherence of their belief set. Moreover, agents can change their network, i.e. drop or add link to other agents based on the principle of homophily. For capturing processes of undecided voters such as in the Brexit case, agents might also be strong minded or weak minded regarding the need for cognitive coherence. Simulations experiments show that the combination of cognitive and social processes produces different results than runs with only social or cognitive processes activated. The combined processes show oscillating patterns in the opinion dynamics similar to those in the opinion polls before the Brexit.

In terms of citations two success stories exist in agent-based simulation research: On the one hand, opinion dynamics models (see e.g. a special issue in *Advances in Complex Systems on Opinion dynamics and collective decisions* for a state of the art of this research field), a research field to which also the contributions discussed so far can be subsumed, even though they are highly innovative further developments of this approach. The other "success story" consists in the models of ethnic segregation in the line of Schelling's model of ethnic segregation (Schelling 1971) and Axeldrod's model of dissemination of culture (Axelrod 1997).

The research presented by Carlos Lemos, Ross Gore, Laurence Lessard-Phillips, and F. LeRon Shults on a *"Network Agent-Based Model of Ethnocentrism and Intergroup Cooperation"* can be broadly considered as a contribution to this research field. Even though they do not deal with segregation, their model investigates effects of ethnic in-group and out-group differentiation. In line with the game theoretic approach of Hammond's and Axelrod's model of the evolution of culture (2006) they apply a Prisoner's dilemma game to study ethnocentrism. Agents are marked with tags to differentiate different ethnic majority and minority groups. Based on these tags the agents have a different likeliness of other agents of the same or a different tag that represents group barriers. Like Edmond's, this model also investigates the mutual interplay between individual cognition and social structure. The cognitive element is represented by the agents' updating their strategies in the Prisoner's dilemma game, and social structure represented as in Edmond's model by embedding the agents in a network structure of partners with whom the agents play the Prisoner's dilemma game. Due to experiences, the network might change over time. Lemos et al. investigate the parameter space of the model for investigating how group barriers influence the emergence of co-operative or non-cooperative behaviour, how structural adaption shapes the emergence of cooperation between groups, and the influence of the

relative size of the majority and minority groups on the formation of mixed network structures. A central finding is that all different kind of combinations of strategies can emerge, however, with different likelihoods. Whereas the group barriers, marked by tags, are of central importance, relative size of the populations is only of minor influence on the results.

4.2 Big data, text mining, data mining and machine learning technologies

Agent-based models are particularly useful for investigating the interplay of cognitive and social structure. The approach enables to study at the same time the cognition of individual agents and the structural properties of their interaction and how they are mutually interwoven. The computational agents enable to grow society "from the bottom up" as it has been famously coined by Epstein and Axtell (1996). In consequence, the "top down" role of elites is less considered in this research approach. Elites come in the focus of investigation of political culture research when turning to approaches that use computational technologies for "big"- data mining, i.e. examining patterns in "real-live" data such as speeches, newspaper articles etc. This is data that is neither simulated nor generated by surveys, but "naturally" occurring in the social world. Subject of this data however, are often political elites—may these be speeches by political leaders themselves that are publicly available or newspaper articles covering political events.

A methodological contribution to applying machine learning technologies to political science is the paper on "*Comparing Supervised Learning Algorithms and Artificial Neural Networks for Conflict Prediction: Performance and Applicability of Deep Learning in the field*" by Felix Ettensperger. Such methodological investigations provide an important step for assessing new technologies in political science research that deserves further attention and research. The motivation for applying machine learning technologies is that quantitative conflict analysis is still based mostly on conventional regression methods. However, conventional linear regression methods are often problematic in predicting the complex non-linear interactions. A hope can be that machine learning algorithms might overcome this problem of a linear analysis. However, so far an analysis of their reliability is missing. For overcoming this gap, Ettensperger compares the accuracy of various different learning algorithms. Nine different machine learning techniques are evaluated, *including k-Nearest Neighbour* (k-NN), *Random Forest* (RF), *Feed-Forward Neural Networks* (FFNN) and *Recursive Neural Networks with Long-Short-Term-Memory* (LSTM) Layers. As input data for the conflict prediction is used socio-economic, demographic, and political data. The resultant classification can be 'Peaceful', 'Almost Peaceful', 'Minor Conflict', 'Major Conflict', and 'War'. Given the five categories one would expect an accuracy of prediction by chance to be 20%. Thus algorithms should be of higher accuracy to be useful. For the comparison different tests are used such as excluding whole countries for investigating how the algorithm works with completely new, unfamiliar data. The test result is that simple linear regression models achieve a median accuracy of slightly above 50%, whereas supervised learning algorithms, which are probabilistic approaches to pattern recognition and classification, predict 70% and 80% of the cases correctly. However, they perform poorly when excluding whole countries (i.e. in prediction structurally new cases). In this respect the so-called random forest algorithm, shows the best result. Accuracy remains at about 50%. Overall neural networks with single or multiple hidden layers networks perform less accurate than probabilistic pattern recognition. This holds also for a new variant of network architectures so-called Long-Short-Term-Memory Networks, a technique used for instance for image recognition or playing *Go*. Moreover they provide less information on

how predictions are achieved, i.e. about the relative explanatory power the different variables used as input information. Thus the problem of conflict prediction poses different challenges than traditional fields of applications of artificial intelligence. Here probabilistic learning algorithms remain reliably technologies.

By using a large scale text-mining approach based on natural language processing technologies the paper on "*The Moral-Emotional Foundations of Political Discourse: A Comparative Analysis of the Speech Records of the U.S. Congress and the Japanese Legislatures*" by Hiroki Takikawa and Takuto Sakamoto provides a contribution to political psychology, more specifically a critical re-examination of Haidt's moral foundation theory (Haidt 2012) and the relationship between emotions and political ideology as suggested by Wojcik et al. (2015). These accounts have the far reaching implication that political polarization may be mainly driven by innate factors. However, the assumption of a close association between an individual's moral-emotional behavior and his/her political ideology lacks comparative perspective as it is mostly based on US data. This is the motivation for comparing US and Japanese congress speeches over a longitudinal time frame. The results provide only limited support for the assumptions of political psychology that psychological factors such as emotions or moral foundations drive ideological preferences. Sentiment analysis for studying emotions and moral dictionary for investigating moral foundation theory enables the authors to undertake a multivariate regression analysis. However, the authors could not find systematic differences between democrats and republicans in US, but more emotions by minority party. Surprisingly, in Japan emotional language is more polarized and the polarization intensified over time, presumably due to long time just one ruling party. Likewise moral foundation theory is not well supported in US. However, the authors find better conformance of the data and the theory in Japan. The main finding is that positional factors of the political parties, i.e. being majority or minority party is of more explanatory value whereas there is no consistent relationships between moral-emotional phenomena and political ideology in the data. This challenges traditional assumptions of political psychology research.

In the paper "*Comparing Public Communication in Democracies and Autocracies—Automated Text Analyses of Speeches by Heads of Government*" Seraphine F. Maerz, and Carsten Q. Schneider develop a scale of liberalness of political leaders based on a computational analysis of speeches. By using a self-developed dictionary the authors apply a machine-based classification of keywords on a scale ranging from clearly liberal to clearly illiberal keywords. They analyze 4740 speeches delivered between 1999 and 2019 by 40 political leaders of 27 countries for developing the scale. The scale is validated using multiple criteria. This includes criterion validity, which checks if the speeches are delivered by leaders from known liberal democracies or authoritarian regimes. Furthermore qualitative coding of a random sample of selected speeches confirms the validity of the scale. Validation includes also discovering latent topics of the talks with unsupervised topic models, a machine learning technology for statistically detecting topics in a natural language text corpus and a network analysis of topic clusters. These tests show that the authors developed a valid measure to identify meaningful differences among political leaders from democratic to autocratic regimes.

4.3 Statistical macro analysis

A methodologically relatively traditional but nevertheless highly important quantitative contribution to this special issue is the article by by Zoran Pavlović and Bojan Todosijević

on "*Global cultural zones the empirical way: Value structure of cultural zones and their relationship with democracy and the communist past*". The article provides insight into the state of the art in the statistical macro analysis of political culture following Inglehart's global cultural map (Inglehart and Welzel 2005). Thus the investigation contributes to the research on cross-cultural differences in values in the succession of classical modernization theory. The authors use cluster analysis. This is basically a classification technology like machine learning technologies as well. However, in contrast to natural language processing technologies, this analysis relies on statistical survey data, namely the World Value Survey. Whereas Inglehart relied on theoretical considerations based on a factor analysis of the dimensions of cross-cultural variation, the authors apply clustering techniques. While the cluster analysis is based on Inglehart's claim of two dimensions of cross-cultural variation, a distinction between traditional/secular-rational and survival/self-expression values, their analysis does not support Inglehart's model of nine cultural zones, as groups of countries with distinctive value profile. A statistical test of differences between the cultural zones suggested by Inglehart showed no significant differences between the groups. In contrast, a solution of the cluster analysis with three clusters appeared as empirically most appropriate and theoretically meaningful. The authors differentiate between theoretically three distinct zones: a zone of traditional authority, comprising 50 countries, a zone of secularized authority, including 20 countries, and a zone of emancipation, consisting of 14 countries. Next to religion and socio-economic development in particular the presence or absence of a communist legacy appears to be highly relevant for the prospects of political culture. The authors suggest that the differentiation of the value zones seems to be theoretically correlated with the quality of democracy: Democratic political culture seems to be a matter of a specific combination of both value dimensions—the zone of emancipation. This theoretical discussion sheds light also on Maerz and Schneider's article of the empirical development of scale of liberalness as it allows to locate the liberalness of political leaders to cultural zones.

4.4 Mixed (methods) approaches for cultural analysis

The mapping of global cultural zones leads to cultural theory, developed by the anthropologist Douglas (1986), as an analytical frame for detailed analysis of political culture. Going back to Emil Durkheim's claim that social relations can be classified by two dimensions of integration and regulation (Perri 6, 2008), Cultural Theory posits a kind of Parsonian fourfold table of culturally possible ways of life spread out by the two variables. For instance both strong integration and regulation characterizes a hierarchical stance towards ways of life, whereas individualism is characterized by weak integration and regulation. Dependent on the different manifestations of the two variables the cultural patterns of individualism, egalitarianism, hierarchy or fatalism appear. Two contributions to this special issue make use of this theoretical account for studying political culture.

The paper "*Political Disagreement in the Classroom: Testing Cultural Theory through Structured Observation*" by Aenne Schoop, Marco Verweij, Ulrich Kühnen, and Shenghua Luan provides the first example for applying Mary Douglas' cultural theory to political culture research. Methodologically, the research advances qualitative methods in political culture research by exploring the methodology of structured observation: Groups of high school students were asked to discuss their opinions concerning three to five highly complex problems and how to resolve them. Complemented by a survey of basic questions

concerning demographic indicators and affinity with a political party and interest in politics, four classes with a total of 64 participants have been asked to discuss issues at least three out of five complex dilemmas of climate change, gun control, support for extreme right-wing parties, reaction to terrorist attacks, and child poverty. These are issues of high relevance for political culture research. The theoretical objective of the study was resolving the puzzle of cultural theory why the distinct ways of organizing, behaving and perceiving appear as a "way of life" as postulated by cultural theory. For this purpose each utterance was coded by a deductive coding scheme derived from cultural theory, i.e. as individualistic, egalitarian, hierarchic or fatalistic. Results reveal an inter-coder reliability of 98% and thus only 2% of incidents were excluded. Thus the students' attitude can uniquely be classified by the theoretical framework of cultural theory. However, the results show also a great diversity in the classroom, even though structured by the skeleton of cultural theory: While a slight majority of the students' preferred hierarchic solutions for the problems, a diversity of the individual attitudes remained within a certainly rather homogeneous environment of one and the same the high school in a small town in a rural area of Northern Germany. Methodologically, the study demonstrates that the methodology of structured observation, derived from psychology and management studies is a valuable tool for political culture research.

The second example of using cultural theory for political culture research is the paper by Aaron Smith-Walter, Michael D. Jones, Elizabeth A. Shanahan, and Holly L. Peterson on "*The Stories Groups Tell: Campaign Finance Reform and the Narrative Networks of Cultural Cognition*". At the example of attitudes towards campaign finance of political parties the authors show that homogeneous cultural groups tell distinct stories about political processes that reflect their diverging core values. These narratives enable sense-making and structuring perception. Thereby narratives are central for valuation as certain aspects are put in the foreground of the narratives while others are put in the background. The selective framing of these stories follows patterns as prescribed by cultural theory, e.g. by individualistic or hierarchical attitudes. Relying on the methodological insight of the narrative policy framework that these narratives provide a fundamental driver for political processes, the authors elaborated a mixed-methods approach for analyzing the valuation of political processes by different cultural groups. Data had been gathered by a number of culturally homogeneous (but distinct from each other) focus groups for discussing political campaign finance. For differentiating different focus the approach of cultural cognition had been applied, based on the differentiation provided by cultural theory. In fact, the groups generated distinct narratives. The differences of the narratives have been analyzed by quantitative measures of classical statistics and network measures. Statistical test theory had been utilized to measure differences in narrative components (i.e. existence or absence) between groups. Network measures have been deployed for mapping the characteristics of the narratives. For instance, density provides an indicator for a more cohesive story. For comparing differences between the networks of the different groups measures of statistical significance have been applied, supported by selected in vivo codes, whereas a qualitative analysis enabled identification of characters (e.g. heroes and victims) and causal mechanisms (e.g. that policy is made intentional by humans) in the narrative story. As narratives provide framework for integrating new information, a fundamental finding of the research is that even when provided with the similar information, the stories that the groups produced varied along theoretically consistent cultural dimensions. This is of practical relevance for policy: it cannot be assumed that "naked" information can simply objectively communicated to the public.

Finally, the contribution by Éva Perpék, Fanni Barsony, György Lengyel on "*Enclave Deliberation and Common-Pool Resources. An Attempt to Apply Civic Preference Forum on Community Gardening in Hungary*" represents the most distinctive qualitative angle of this special issue. The authors apply the method of a deliberative civic preference forum. This is a group discussion which differs from survey research as participants can reflect on their thoughts and those of other participants aiming at disseminating information and expressing diverse opinions. Based on the philosophy of deliberative democracy the attempt of the research is to investigate whether community gardens can be understood as common pool resources in which the institutional design principles developed by Elinor Ostrom can be found. Ostrom (1990) typically investigated close-knit typically rural communities and thus the research question of the investigation is whether this organizational management style can also be found in community gardening. More broadly the authors have a threefold goal: provide gardeners a forum, testing if a civic preference forum is an adequate method for deliberative participation, and finally learn the institutional design of gardening communities. Relying on the discursive quality index (Steenbergen et al. 2003) to evaluate quality of deliberation the authors find that these criteria had indeed been fulfilled. Theoretically they could also find elements of Ostrom's institutional design principles. It has to be mentioned however, that restricting the philosophical foundation of deliberative democracy to gardening is also telling about the degree of development of civil society and status of liberal democracy. This confirms the big data driven findings of Maerz and Schneider (analyzing the speeches of political leaders) from a level of a qualitative micro-sociological perspective.

5 In spite of the impressive methodology developments, it is still too early for conclusions

Ever since Gabriel Almond and Sidney Verba have founded it in the early 1960s, political culture theory has undergone a process of research domain fragmentation: its very domain has been divided into more and more tinny "niche" areas which, once developed, have brought back to it certain kinds of conceptual and methodological enrichment.

Bringing back such fragments or, even better said, bringing altogether parts which have been approached separately and further developed has not, however, resulted in achieving a specific methodology of research. Freed from the nomothetic constraint (Hempel 1942), and almost overwhelmed by the methodological "boom" strongly supported by the advanced technologies of the artificial, political culture has not found as yet a way to synthetize all these methodological contributions into theory improvement.

Attitude research is still looking for the means to formalize the relationship between beliefs, values, attitudes and behaviours, and to explain how the macro-level phenomena influence the attitude formation and change in the individuals. Rokeach (1979) has conceptually described the relationship between beliefs and values and the role they play in attitude formation. However, this description could not be formalized so far as it needs to define the mechanisms which achieve the relationships between beliefs and values, the emergence of attitudes, and the behaviour dynamics.

Polity research still needs a way of measuring and evaluating the state dynamics, state performance, and state failure. State dynamics as well as state performance have been modelled for conflict scenarios by means of agent-based systems and complex

adaptive systems, though these models are based on economic conceptual backgrounds and conflict theory (Mueller 1991; Cioffi-Revilla 2009; Cioffi-Revilla and Rouleau 2010; Cederman et al. 2018). While index-based measurement has been able to provide a comparative basis for state failure (Graf 2012), state failure measurement and the dynamic evaluation of the after-failure reconstruction capacities have been more appropriately approached by means of agent-based systems methodologies since they could cover the relationship between micro and macro levels of a political systems (Sakamoto and Endo 2016; Sakamoto 2013).

Socializing networks have provided for huge amounts of data in which complex information about emotional phenomenology is hidden. *Facebook, Twitter* or any other—all of them abound of data: these socializing platforms are going to essentially change the political culture theory. It is a matter of technology to extract the meanings from this data.

Notwithstanding the impressive methodological developments and achievements, as long as political culture theory is still lacking substantial and integrative methodological contributions from *polity*, *political regime, political power* and *emotional phenomenology* research, it keeps waiting for the innovation to become effective.

Our *Special Issue* aims to warn on the huge, multidimensional conceptual and methodological space of political culture research, and its continuous enlargement based on the technological advances. Despite the methodological diversity, it can be stated nevertheless that many highly different contributions, ranging from agent-based modelling (ABM) to narrative policy theories, search for mechanisms: mechanisms of institutional collapse (Miodownik and Lustick, *this volume*), mechanisms of attitude change towards phenomena such as war (Mitsutsuji and Susumu Yamakage 2019) or Brexit (Edmonds 2019), mechanisms of the collapse of a political monopoly or mechanisms of sense making (Walter-Smith et al. 2019) to mention a few examples. Identifying mechanisms attempts at answering the question: how does it work? This is an epistemological question. It attempts at providing an explanation, rather than asking for instance, the ontological question of what is existent. Mechanism based explanations are a specific type of an epistemological orientation (Hedström 2006). Thus, the search for mechanisms suggests a *common epistemological* orientation even among *methodologically highly diverse approaches* in recent directions of political culture research. This is a first hint that can be gained from the collection of research in this Special Issue. Nevertheless, one might ask: Where are we heading to?—A tentative answer is provided in the **Prologue to the *Special Issue*** (Voinea 2019).

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