The Impact of Democratic Innovations on Citizens' Efficacy: Leveraging the Systemic Approach

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January, 2018

Introduction and scope of the chapter

The idea that increasing the participatory and deliberative nature of public and private institutions would strengthen citizens' trust in democracy and promote citizens' engagement in politics traces back to the earliest justifications of participatory and deliberative practices (Freire, 1970; Pateman, 1970).

More specifically, both practitioners and scholars promote democratic innovations' as tools that can reinvigorate citizens' trust in institutions' responsiveness to their preferences, and promote the citizens' sense of competence in participating in politics (Finkel, 1985; Gastil & Dillard, 1999; Geissel & Hess, 2017; Mansbridge, 1999; Morrell, 2005; Nabatchi, 2010; Sjoberg, Mellon, & Peixoto, 2015; Smith, 2009)

Obviously the concepts of trust in institutions and self-efficacy are more complex than the two aspects highlighted above, and might vary significantly across cultures (Lee, 2005), but an in-depth analysis of these multifaceted attitudes is beyond this chapter.

The work of the Survey Research Center (University of Michigan) systematized the concept of efficacy in political science. In *The Voters Decide* (Campbell, Gurin, & Miller, 1954: 187) the authors define the sense of efficacy as

"*the feeling that political and social change is possible, and that the individual citizen can play a part in bringing about this change*"

The two aspects of "external" efficacy (the feeling that change is possible) and "internal" efficacy (the feeling that the individual can promote such change) first isolated by Balch (Balch, 1974) will be the focus of this chapter.

Derivative and related concepts such as the efficacy gap (McCluskey, Deshpande, Shah, & McLeod, 2004) and collective efficacy (Fernández-Ballesteros, Díez-Nicolás, Caprara, Barbaranelli, & Bandura, 2002) are left to others to explore. Throughout the chapter we will maintain the hypothesis that the sense of efficacy is an attitude that can change relatively easily, unlike personality traits which are more difficult to change according to most personality theories (Roberts, Walton, & Viechtbauer, 2006).

Although we lack the space to explore the literature on the variety and reliability of efficacy metrics (Bandura, 1997; Craig & Maggiotto, 1982; Craig, Niemi, & Silver, 1990; Morrell, 2003), it is worthwhile

for any researcher interested in exploring the impact of democratic innovations on efficacy. This literature highlights the difference between system level general efficacy, i.e., the feeling that an individual has enough knowledge to suggest meaningful changes in public policy, and situation specific metrics, such as for example the feeling of having learned a lot about the workings of the city budget after having participated in a participatory budgeting process and the feeling of being able to affect such city budget via the process itself.

Efficacy is intertwined with a discussion of power and inequality that is central to the debate in feminist theory, race studies, studies of participatory care in health science and disability studies. How to increase self-efficacy to promote political action is one of the crucial questions that we do not have the space to address here (Beaumont, 2011; Karpowitz, Raphael, & Hammond IV, 2009; Mendelberg & Oleske, 2000; Raisio, Valkama, & Peltola, 2014).

This chapter will draw insights from three primary sources: the vast literature in psychology on self-efficacy (Bandura, 1997), the subsequent applications in pedagogy (van Dinther, Dochy, & Segers, 2011) and the study of democratic innovations (Morrell, 2005). Other secondary sources will be the literature on persuasion, political communication and behavior in political science. This chapter will situate this enormous body of knowledge and reshape it using the lens of the emerging systemic approach to design a pragmatic research agenda (Fung, 2007).

Why efficacy?

A vast survey literature highlights that people who believe in their political efficacy and trust the government to be responsive to citizens' demands show a high involvement in traditional political activities such as voting and contacting their representatives (Balch, 1974; Craig, 1979; Finkel, 1985; Jung, Kim, & Zúñiga, 2011; Moeller, de Vreese, Esser, & Kunz, 2014; Pollock, 1983; Zimmerman & Rappaport, 1988). Therefore efficacy-enhancing democratic innovations could be designed to stimulate apathetic citizens and traditionally disengaged strata of the population to become more active in politics improving the *inclusiveness* of the democratic system – desirable for all theories of democracy (Parkinson & Mansbridge, 2012; Smith, 2009).

It is important to note that most of this literature offers a macro correlation between measures of global internal and external efficacy with engagement in traditional forms of politics. This literature does not support the widespread practitioners' claim that an intervention, such as a democratic innovation, that increases efficacy would necessarily generate more political participation.

This folk causal claim described in figure 1 does not sufficiently consider other explanations, e.g., personality traits, that might explain both efficacy and political participation (Caprara, Vecchione, Capanna, & Mebane, 2009) and it underscores reverse causation problems (Quintelier & Van Deth, 2014) – participation in traditional politics generates increases in efficacy and also the propensity to participate in democratic innovations. On average, most participants in open-to-all democratic innovations have an interest in politics that is significantly higher than the general population – often referred to as the "usual suspects."

However, in pedagogy and psychology there is enough evidence to show that interventions capable of increasing individuals' self-efficacy are causally correlated with increased performance in a variety of

knowledge-based tasks (Bandura, 1997; van Dinther et al., 2011). How much this translates within the space of political participation is an important question. Paradoxically, it is possible that participation in high quality deliberative processes induces a desire for participation outside traditional competitive politics and a reduction in the propensity to vote. In the past decade we have encountered a number of citizens who do not vote, but who do actively seek occasions to participate in deliberative and participatory processes. To our knowledge no studies have explored this in detail.
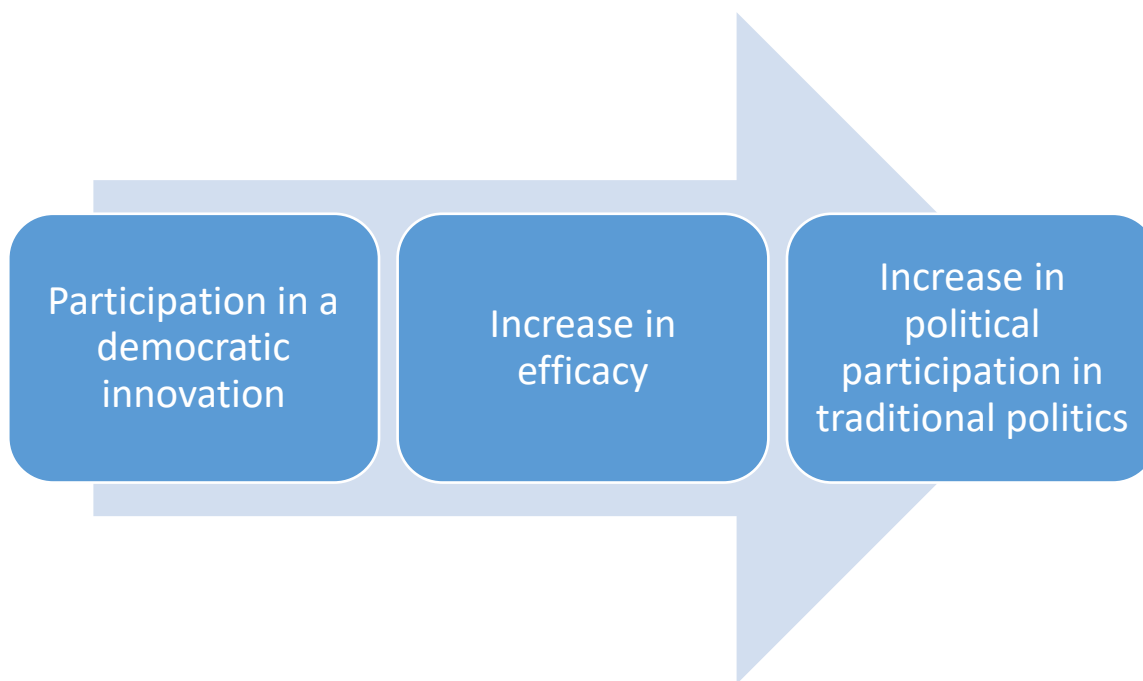
Participation in a democratic innovation → Increase in efficacy → Increase in political participation in traditional politics

Figure 1: Folk causal claim

While pilot democratic innovations can tell us something about the adoption of institutionalized forms of participatory democracy such as deliberation day (Ackerman & Fishkin, 2004) or proposals to institute a chamber of randomly selected citizens (Dahl, 1970), it is very difficult to predict what would happen after pilots are institutionalized. Critics have often said the role of media and interest groups will naturally change when small unknown tactical interventions scale-up and are institutionalized at the national level (Shapiro, 2009). The recent democratic crisis in Brazil reminds us how little we know about scaling-up democratic innovations and their institutionalizations.

What might appear to work in a small scale quasi-laboratory environment might be extremely fragile to media influence and interest group capture when scaled-up. We also need to consider that the impact of democratic innovations on trust and efficacy might be moderated by the novelty effects which gradually disappear after the democratic innovation becomes an established institution. The impact of the latter two phenomena, scaling-up and institutionalization, is again beyond the scope of this chapter.

Lastly, efficacy is potentially in tension with intellectual humility (Hopkin, Hoyle, & Toner, 2014; Paul & Elder, 2007; Whitcomb, Battaly, Baehr, & Howard-Snyder, 2017). Thus an innovation capable of

promoting efficacy must ensure that such increase is not due to the creation of a false sense of confidence and must be kept in mind when evaluating interventions.

So why explore the impact of democratic innovations on efficacy? While in political science we are still in the early stages of research trying to determine appropriate metrics and research designs, the concept of self-efficacy is a mature concept in pedagogy and psychology. These literatures give sufficient clues to reasonably assume that democratic innovations capable of increasing internal and external efficacy should generate increases in performance at least in situation-specific tasks. So one of the main justifications for studying the impact of democratic innovations on efficacy is that unique pedagogic effect described by Freire and Pateman (Freire, 1970; Pateman, 1970) but we should be very cautious about other simplistic assumptions, e.g., the folk causal claim described in figure 1.

Existing literature on the impact of democratic innovations on efficacy

While scholars and practitioners theorize the ability of democratic innovations to promote internal and external political efficacy, the empirical body of research is still underdeveloped and has proceeded in a nonsystematic fashion (Geissel & Hess, 2017; Nabatchi, 2010).

Most of the existing empirical knowledge is focused on the study of a single family of democratic innovations though some studies analyze variations within a family of democratic innovations such as citizens' assemblies or participatory budgeting processes.

Democratic innovations are so different that is almost impossible to generalize and compare across wildly different designs. Attempts to create taxonomies of these processes, such as the Participedia, Latinno and the Cherry Picking project, offer a glimpse of a phenomenon that is very fast growing and very difficult to keep up with.[1]

Most importantly, the majority of the existing research, including our own, treats democratic innovations as a black box and thus does not offer precise mechanisms that can explain the potential impact on efficacy (Beuermann & Amelina, 2014; Fishkin & Luskin, 1999; Gastil, 2004; Geissel, 2012; Grönlund, Setälä, & Herne, 2010; Knobloch & Gastil, 2015; Morrell, 2005; Stromer-Galley & Muhlberger, 2009). Not surprisingly, this body of knowledge offers inconclusive results.

Summarizing the field difficulties at one of the Participedia meeting (Montreal, June 2013) Professor Gastil said:

"we are drawing knowledge by comparing not the effects of apples with those of oranges, but more like comparing the effects of apples with those of fried chicken!"

Have we reached a wall? Or is there a way to go beyond the current limits of the literature?

The systemic approach

This chapter will begin to respond to such questions by combining the knowledge of various literatures in pedagogy, psychology and political science, together with folk knowledge derived from practitioners

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[1] See: www.participedia.net, www.latinno.net and https://cherrypickingproject.wordpress.com/

experiences which emerged in our own activity in designing, implementing and analyzing democratic innovations over the past decade. In this section we begin by leveraging the flexibility of the systemic approach to the empirical study of democratic innovations to identify some of the mechanisms that might drive the impact on efficacy.

While most of the current literature uses the systemic approach to analyze the overall deliberative system (Neblo, 2015; Parkinson & Mansbridge, 2012), we will employ this framework to analyze the subsystems that comprise a single democratic innovation. Additionally, the deliberative system approach is a normative approach, while our research agenda is more pragmatic. For this reason we refrain from using the terminology of the deliberative system but rather talk about the systemic approach to democracy – the democratic system.

Our objective is to sketch a systemic empirical research agenda based on the empirical strategy described by Mutz (Mutz, 2008) that can build upon the pragmatic approach described by Fung (Fung, 2007).

Very familiar in political science, the minipublics will be our main source of examples (Ryan & Smith, 2014), but our approach is flexible enough to be applied to democratic innovations within firms, families, social networks and organizations. Within the minipublics we will focus on the families of deliberative polls (DP) and participatory budgetings (PB) due to their significant differences. We aim to show that using the systemic approach it is possible to create meaningful comparisons across the most different democratic innovations.

The research agenda we propose is simple. Instead of comparing the impacts of apples and fried chicken we will compare the impacts of the properties of the two foods – the vitamins, sugar and fiber that each contain. We can isolate the specific impacts of the nutrients, or combinations thereof, of each food and the *emergent* characteristics – characteristics that emerge due to a specific combination of their subsystems and elements – can be studied. So apples and fried chicken can be compared as different combinations of a large variety of nutrients – some they have in common, some they do not.

Similarly, we can isolate subsystems and elements of democratic innovations that have a clear impact on political efficacy and then compare across different combinations highlighting those that could generate the highest/lowest possible impact on efficacy.

It is important to keep in mind that we are not proposing to create a complete and deterministic mechanical account of the inner workings of the democratic system but rather a temporary lens of analysis that is designed to further the debate on democratic innovations; we do not have enough data to complete a taxonomy. The objective of the chapter is to suggest a meaningful application of the systemic approach which will be useful as a guide to promote process-tracing and better mechanisms identification before conducting empirical testing. Otherwise we risk accumulating evidence that cannot be compared because the units of analysis are so different, even within families of democratic innovations, that the comparison is flawed at the outset.

In the next section we will also isolate a few subsystems and then analyze such mechanisms paying particular attention to their impact on political efficacy and conclude with some reflections on the relevance of this approach.

The drivers of internal and external efficacy: analyzing the subsystems of participatory budgeting and deliberative poll

At first glance, the European models of participatory budgeting[2] and deliberative polls are quite dissimilar. A PB cycle lasts a few months, while DP last only one or two weekends. Participatory budgeting involves multiple self-selected publics, while deliberative polls engage only the members of a quasi-random sample of citizens. PB focuses on the experience of getting a citizens' idea implemented while DP focus on curating the experience of small group discussion and interaction with experts. Deliberative polls can *possibly* deeply impact a policy due to their consultative nature, while participatory budgeting processes, if well executed, *automatically* affect small public projects.

However, democratic innovations can be analyzed as a system in themselves, i.e., an interdependent group of elements forming a unified whole. A system is characterized by an input and an output and an architecture that integrates and disciplines the relationship of its components. Some of these components are subsystems – a set of elements which is a system in itself as well as a component of a larger system. Other components do not constitute a system in themselves; we will refer to them as elements.

We will start the analysis from the democratic innovation level as a system and not as a subsystem of the larger democratic system. Considering democratic innovations as a combination of subsystems and other elements that are integrated in different ways depending on the design, we can isolate recurring subsystems as a common unit of analysis across a variety of democratic innovations and transform the unit of analysis problem into a missing value problem. By growing our exploration on the properties of the subsystems and elements of democratic innovations, we will be able to build a more complete mapping of these components.

Obviously this approach is just the starting point because systems display emergent characteristics which cannot be traced back to the simple sum of the properties of their subsystems and elements

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[2] The traditional model developed in Porto Alegre (we'll call PB v1.0), asked citizens to rank general city macro priorities, e.g., housing, and select a group to support it. Representatives of each group would then propose and select ideas to be entered into the budget. The more citizens affiliated with a group, the more representatives in the ideation phase, and the higher the probability the item would be entered into the budget. After PB was imported to Europe, this indirect model was abandoned and an ideation open to all was introduced. This latter model (we'll call PB v2.0) is the current dominant one outside of Latin America. Some researchers and practitioners confound the two models, in part because the European model was then reintroduced to Latin America, particularly with the diffusion of digital participatory budgeting that emphasizes a more individualistic mode of participation. The original model was designed to promote the strengthening of civil society organizations and the formation of new groups around concrete public projects.

interacted with local conditions and other inputs. That said, emergent characteristics will hopefully display patterns which can be mapped.

Lastly, it is important to keep in mind that democratic innovations are processes manned by individuals that have significant agency and thus no matter how precisely we map the properties and impact of the subsystems of democratic innovations, it will only be possible to explain an average effect based on the average behavior of the participants observed in the past.

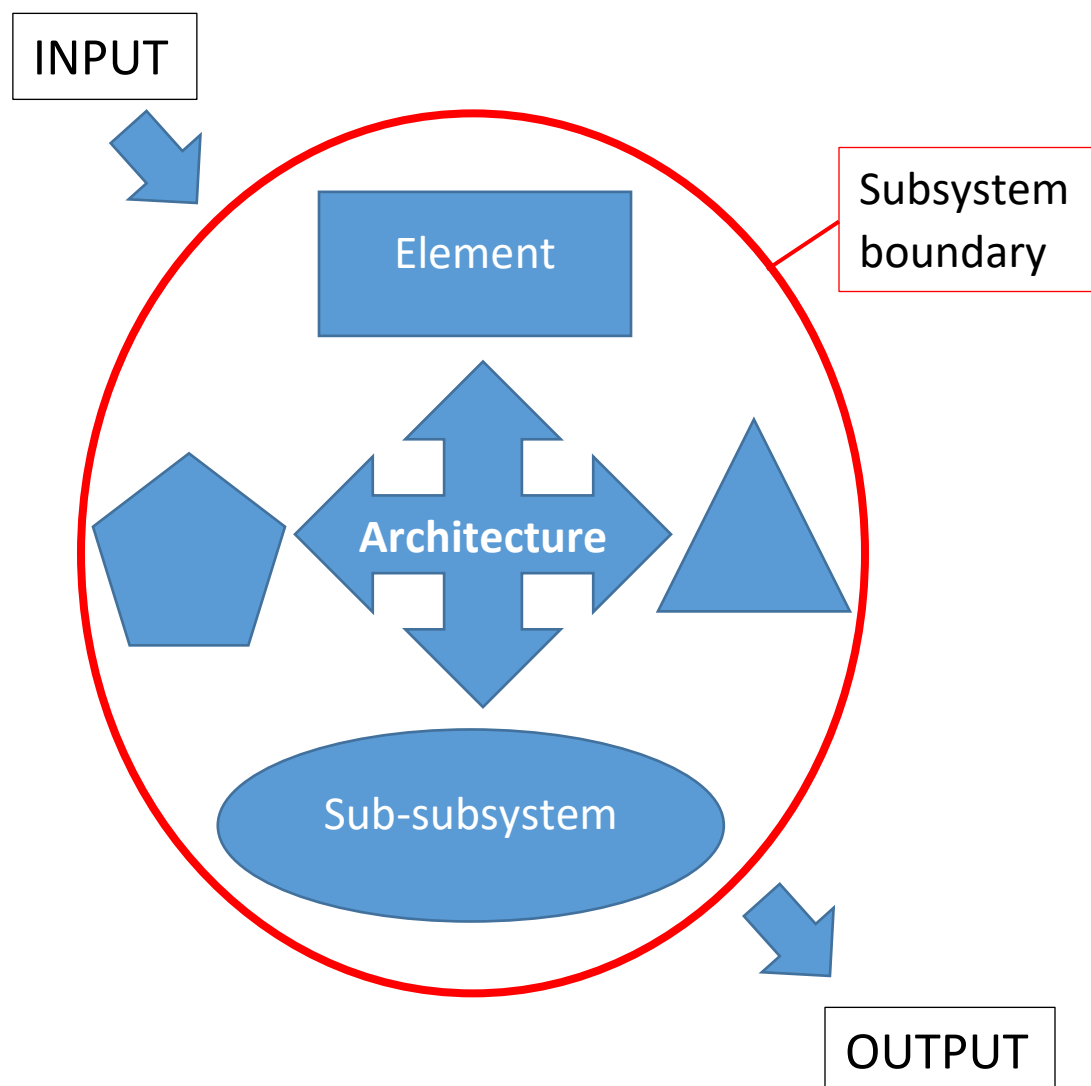## Democratic innovations as a subsystem within the democratic system

INPUT

Element

Architecture

Subsystem boundary

Sub-subsystem

OUTPUT

Figure 2: Democratic system

A system is characterized by an input and an output and an architecture that integrates and disciplines the relationship of its components. Some of these components are sub-subsystems – a set of elements which is a system in itself – and a component of a larger system. Other components do not in themselves constitute a system; we refer to them as elements.

Returning to our two examples, both PB and DP require an engagement campaign to invite people to participate. Citizens are invited to learn new skills and absorb new information and are asked to perform a task. Both processes include impact feedback mechanisms. Deliberative polls present the result of the poll to the participants, while participatory budgeting presents the result of the final vote and subsequently shows which projects have been implemented. All these components are sufficiently similar and can be compared even if varying in duration and methodology. Having an input and an output and a clear boundary they can be analyzed in isolation as a subsystem. There are many other elements in each design that cannot be clearly framed as subsystems, e.g., the availability of child-care in an in-person event, the presence of facilitators or group composition. Nonetheless, such elements might play a crucial role (Karpowitz, Mendelberg, & Shaker, 2012; Spada & Vreeland, 2013).

Both processes include some subsystems the other does not. For example, many PB processes include an initial rule-making assembly in which participants can reshape the rules that govern the process, while DP have an advanced recruitment strategy designed to create a group of participants that is balanced across a few key demographics of interest. Both elements can be characterized as subsystems because they have a clear boundary in terms of time, they have an input and a clear output.

The two democratic innovations are significantly different but the comparison of the subsystems can shed light on the inner mechanisms of the two (see table 1). While scholars have already conducted experimental analysis on the subsystems of democratic innovations (Bächtiger, Steenbergen, Gautschi, & Pedrini, 2011; Farrar et al., 2010; Grönlund et al., 2010; Iandoli, Quinto, Spada, Klein, & Calabretta, 2017; Karpowitz et al., 2012; Morrell, 2005), these studies have never been embedded in a systematic research agenda that is comparative and isolates a set of subsystems to be investigated across democratic innovations.

Table 1	Deliberative polls	European model of participatory budgeting
Engagement	For the typical one-weekend DP, the invitation period usually lasts a month. The exact procedure is determined by the firm hired to create the quasi-random sample of participants, but borrows from the procedure to create quasi-representative samples employed in polling. Messages to keep participants on task during the event are delivered by the facilitators at the table and during plenaries. Post-event retention messages are limited or non-existent.	PB has multiple engagement processes corresponding to the phases of the process itself. Usually there are two phases open to all citizens; one to define projects, one to select projects. Thus organizers usually conduct two large engagement campaigns. Differing from DP, the design of the PB events are less curated so there are fewer messages to keep participants on task. Being cyclical, PB has more post-event retention messages with an ultimate objective of creating a persistent community.
Capacity building	In DP, capacity building starts before the event. Balanced information packages are sent to all participants. During the event the entire initial day is devoted to coming up with questions for an expert panel and clarifying any doubts.	Capacity building in participatory budgeting processes is minimal. In some designs some representatives of the participants – sometimes called budget delegates or budget councillors – receive some training. Usually the capacity building is limited to a short presentation describing the rules of the process (e.g., amount of money, admissible projects, etc.).
Problem solving/ feedback	DP usually tackles binary choices on a complex policy problem of public relevance (e.g., should we introduce affirmative action policies?). DP generates ongoing feedback that is divided into tasks to be completed before moving on to the next. Most DP are consultative in nature and thus have as a final outcome an exit survey and a report.	The most common application of PB focuses on identifying and selecting small public projects within a city. The problems tackled by the participants are very familiar. The voting phase of PB process is a friendly, game-like competition experience. Feedback is constant throughout the process.
Small group discussion	DP employ an accordion-style design that moves between small group discussions and plenaries. The small groups discuss the briefing materials and come up with questions for the experts during plenaries. The main focus of small group discussion is argumentation, not ideation. DP employ facilitators; the experience in the small group is extremely curated.	Most PB do not employ small group discussions. Those that do, such as the North American model, or some in Portugal, focus on ideation and consensus building. There is almost no structured argumentation. Obviously spontaneous argumentation might still emerge.
Taking ownership	DP do not allow participants to design the agenda. Possibilities to take ownership of the process are very limited. In some processes participants are initially allowed to rank the principles and goals of the discussion.	Most PB have a steering committee composed of participants that is in charge of reviewing the rules of the process and to propose changes.

As a first step in building a systemic research agenda with respect to the study of political efficacy, we have selected five subsystems common to a large variety of designs to explore their potential impact on internal and external efficacy (see table 1):

1) The engagement campaign

2) Capacity building

3) Manageable problem solving, impact feedback mechanisms and gamification

4) Small group facilitated discussion

5) Taking ownership of the process

These subsystems were selected to outline the advantages and challenges of the proposed research method and because there is existing research or sufficient clues in case studies and folk knowledge showing that each of them has a specific impact on efficacy.

Many subsystems commonly adopted are not covered in this chapter, e.g., ice-breaking exercises designed to ease the participants into the participatory process and create a sense of group membership. Such subsystems might affect the sense of collective efficacy. We do not have the space to discuss the effect of the interaction of multiple subsystems and elements – the emergent characteristics of a system.

These five subsystems are just some examples, but when combined cover many important features already extensively analyzed in the literature, e.g., participatory budgeting, citizens' assemblies, deliberative polls, and digital consultations. The majority of these innovations are invited spaces and while many of these elements and subsystems are also common to invented or claimed spaces (Gaventa, 2006), we will focus only on invited spaces.

Our objective in the following sections is to explore the impact of these subsystems on efficacy.

The engagement campaign

The starting point of any democratic innovation based on an invited space is an engagement campaign aimed at persuading citizens to participate. Independent of the type of recruitment strategy, whether open-to-all, mediated by social groups or closed to a quasi-random sample of the population or a persistent online community, or some combination thereof, citizens must first be invited and persuaded to participate in some tasks.

Participants are often invited with slogans that highlight their competence on the basis of local knowledge and stress the positive impact their participation will have. These messages alone might reinforce the sense of internal and external efficacy, if only temporarily. A typical engagement message such as "we want your input on the design of the new park in your neighborhood because you know best what the neighborhood needs" already potentially boosts the sense of self-efficacy of the participant.

Most modern campaigns that leverage hybrid systems, i.e., democratic innovations that have a digital channel of participation or employ frugal technologies to augment the experience of in-person

participation (Spada & Allegretti, 2017), can also microtarget email or text messages on the basis of real time monitoring of detected behaviors.

In general, the persuasive messages of the engagement campaign can be divided into three main categories: first contact messages, messages designed to keep the participants on task, and retention messages.

First contact messages are aimed at having citizens come to the physical or digital invited space. The on-task messages are persuasion messages aimed at promoting a certain behavior, from speaking in a small group discussion to providing information in a participatory mapping process or taking a picture of a pothole in an issue reporting in a phone app. The retention messages aim at continuing the relationship with the citizens during and after the innovation. These are particularly important where citizens are asked to participate multiple times (e.g., participatory budgeting, citizens' assemblies, issue-reporting software). Participants are often thanked for their contribution and the importance of such contribution is emphasized.

The literature in political psychology and communication has shown the effects of persuasive messages in altering, if only temporarily, people's self-reported attitudes. For example, agenda setting, and framing and priming, are two classic mechanisms that have been studied extensively in political communication and persuasion studies (Gerend & Sias, 2009; Scheufele, 2000).

Additionally, the literature in pedagogy and psychology has shown that teachers' positive persuasory feedback can raise students' self-efficacy when those who provide this information are viewed by students as knowledgeable and reliable (Bong & Skaalvik, 2003; Schunk, 1991). These messages are similar to those used to keep participants on task and to retain their participation by reinforcing and emphasizing their contribution and the potential impact.

Research in the field of democratic innovations has yet to attempt to isolate the impact of the engagement campaign on efficacy metrics. But it is reasonable to assume that such impact exists.

When studying the impact of democratic innovations on efficacy, the engagement campaign subsystem effect should be seriously considered – particularly in multi-event innovations and innovations with complex tasks that require an almost constant engagement campaign. An effective campaign will likely raise the sense of efficacy reported by participants and induce them to participate actively. The question is, how stable is this effect and what happens if the democratic innovation fails to deliver on its promises.

Capacity building

Participating in a democratic innovation entails being exposed to new information and learning new skills. Depending on the complexity of the task the amount of capacity building varies. For example, surveys, crowd-mapping processes and issue reporting typically require very minimal capacity building and tap into citizens' pre-existing skills (e.g., taking a photo with a smartphone), while complex deliberative assemblies that aim at creating a new regulation require a significant amount of learning. Participants of the Grandview-Woodland citizens' assembly in Vancouver, tasked with designing a neighborhood plan, had to study zoning and building regulations (Beauvais & Warren, 2015).

The capacity building subsystem might promote a sense of internal efficacy, or might highlight the difficulties of policy-making and could depress internal efficacy. In fact, politicians we work with often

hope democratic innovations will show people just how difficult their job really is. This is based on the intuition that promoting intellectual humility and an appreciation of the complexity of policy-making will reduce the false sense of internal efficacy that is fueling antipolitics sentiments.

A vast literature in pedagogy and psychology tracing back to the 1980s has investigated how different educational practices affect self-efficacy (Schunk, 1995; van Dinther et al, 2011). While the field of democratic innovations was originally strongly influenced by innovative forms of pedagogy, papers leveraging the knowledge of the pedagogic literature to shed light on the impact of the subsystems of democratic innovations are currently almost non-existent in political science (Prosser et al., 2018).

Manageable problem solving, impact feedback mechanisms and gamification

From the most basic issue-reporting app that asks people to help with street maintenance, to a deliberative assembly tackling a complex issue such as global warming, all democratic innovations based on invited spaces are designed around a problem to be solved together with citizens. But democratic innovations are also designed to present participants with manageable problems and with tasks that can be completed in the allotted time. Complex issues are often broken down into simplified sub-tasks and participants are sometimes supported by experts. Substantial resources and energy are devoted to creating an experience that is manageable; a process that does not become chaotic and ineffective.

Most tasks have an impact feedback mechanism. Participatory budgeting reports the results of the ideation phase so participants can track what happens to the idea they have proposed. Deliberative exercises strive to create a public report and include within-process feedback highlighting achievements of the participants.

The experience of managing a complex issue, solving a task, and having an immediate positive feedback is a reinforcing experience that can lead to further engagement. Working in confrontational settings in which communities were struggling to obtain something from local governments or firms, Saul Alinsky pioneered the classic technique of promoting the empowerment of a community by giving an easy "victory" and attributing such victory to the participatory methodology (Alinsky, 1971).

In general, successes build a strong sense of self-efficacy and failures lower it, especially when failures occur before a robust sense of efficacy is developed (Bandura, 1997).

The growing body of literature on gamification explores the positive effects of "winning" in non-game environments mostly from the standpoint of engagement and retention (Walz & Deterding, 2015). Activity trackers that many now wear reinforce positive successes with constant positive feedback to keep the user motivated.

Similarly, many democratic innovations are designed to maximize the number of "winners" and the occasions to receive positive feedback. PB practices that have a preset amount of money to spend (e.g., 1 million) often limit the maximum for a single project to a subset of such allocation (e.g., 250000) and allow participants to cast multiple votes so participants have a greater chance to propose or vote for a winning project.

It is reasonable to assume that the effects of completing a task, receiving positive feedback and winning boosts the sense of participants' efficacy and the more difficult the task appears, the bigger the victory.

Therefore, we would expect that democratic innovations that tackle a complex issue, breaking it down into a manageable problem should generate the highest level of the sense of self-efficacy. Innovations such as issue-reporting software or rudimentary consultation processes and basic referendums in which participants can only cast a vote or report some information should generate the lowest efficacy return.

On the other hand, it is reasonable to assume that participatory processes that tackle an issue that is too complex to solve or that becomes unmanageable should generate a decrease in the sense of efficacy (Schunk, 1995).

These are hypotheses to be tested; as yet there is no research in political science dealing with the impact of manageable or unmanageable problem-solving and gamification on political efficacy.

Small group facilitated discussions

Small group facilitated discussions are a widely used to promote better dialogue and discussion that is inclusive of all voices. Some exercises are designed to promote a sense of belonging to a group of equals, some to induce intellectually humble discussion and some to promote contributions from all the members of the group. Generally facilitators aim at maximizing the contribution of all participants, while decreasing the inequality of participation and preventing domination by a few vocal individuals. There is a vast literature on group facilitation boosted by the growing industry of consultation services (Schuman, 2010; Wilkinson, 2012).

Given the large variety of possible exercises, small group facilitated discussions should be further dissected, i.e., sub-subsystems in the systemic language, and the impact of each exercise should be analyzed in isolation first and then common combinations of exercises should be explored to investigate potential reinforcing effects of specific sequences of exercises.

Next we will focus on three examples among the most common exercises and their potential impact on efficacy.

1) Ideation

An ideation exercise (brainstorming) designed specifically to reduce self-censoring, aims at soliciting ideas to solve an issue. The facilitator's role is to ensure that all participants have enough time to express their thoughts and that no proposed idea is criticized or dismissed; all ideas are valid and participants are to refrain from criticism. Any member of the group – no matter their knowledge, education or skillset – has some wisdom and ideas to offer. The facilitator actively promotes the process by thanking each participant for their contribution.

When correctly implemented, the ideation exercise appears to be a strong mechanism to promote internal efficacy because it combines many of the mechanisms previously described – from assigning a manageable task to providing positive feedback.

2) Evaluation of the pros and cons of ideas (argumentation)

The evaluation exercise is a classic deliberative exercise in which the participants are invited to respectfully offer pros *and* cons for a set of ideas/projects regardless of their position. The objective being to induce more considered judgment. The facilitator's role is to ensure that discussion is respectful and that the argumentation is based on facts or experiences, not personal attacks or rhetorical tricks.

The positive impact on self-efficacy is not as clear as the impact of the ideation exercise in which the role of the facilitator is often to reduce the critical evaluation of ideas to maximize the level of participants' contributions. The impact of the pros/cons exercise might depend on the overall evaluation of the idea preferred by a member. If the preferred idea is criticized by most participants the participant might experience a reduction in self-efficacy.

The exercise is designed to enhance group knowledge by sharing the views of all participants in a respectful manner so the acquisition of new knowledge might generate an increase in self-efficacy on the specific topic.

During this exercise the participant might change his/her opinion and thus their attachment to an idea might change, making the impact on efficacy quite difficult to theorize. Some facilitator handbooks theorize the promotion of exercises that detach the participants from the authorship of ideas and how such exercises strengthen the sense of group and, potentially, collective efficacy (Mindell, 2002).

No analysis of the impact of argumentation on self-efficacy has been conducted in an experiment. However, Morrell analyzed a form of deliberative decision-making that included argumentation and consensus based decision (Morrell, 2005).[3] He found that this combination of subsystems (argumentation + consensus decision making) does not lead to increases in global measures of internal efficacy, but does produce increases in situation-specific metrics of efficacy, particularly when conducted face to face.

3) Consensus building exercise and filtering

Many democratic innovations employ consensus-building exercises – small group discussions that aim at filtering a few ideas from a larger set of ideas.

Many medium sized deliberative assemblies, such as the recent UK citizens' assemblies (50 participants), include a two-step decision making process. First, small groups are asked to narrow down their preferred ideas to just a few (consensus building). Next, all the ideas are gathered and all the members of all the small groups are invited to vote secretly for their preferred idea (filtering). This procedure is repeated throughout the assembly for many decisions (Flinders et al., 2016).

The consensus-building exercise attempts to keep those that disagree with the majority engaged in the discussion. This is particularly important in the early stages, otherwise the group risks disengaging a subset of its own members for every decision –promoting self-censoring and potentially reducing the sense of efficacy of the participants.

A prototypical example within the practice of democratic innovations is offered by the deep democracy methodology pioneered by Mindell (Mindell, 2002). One of the key exercises used by practitioners of this method aims at unearthing the wisdom of the minority and preventing the creation of a *terrorist line* – a coalition within the group – that does not express its true motivation because it feels unrepresented and then boycotts the process.

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[3] More recent studies analyze more complex democratic innovations involving a variety of small group exercises (Grönlund, Setälä, & Herne, 2010; Nabatchi, 2010; Iandoli et al. 2017).

The objective of deep democracy is to pacify the minority and to include its wisdom in the final decision. On the basis of the various mechanisms discussed, there is reason to assume that this process will increase the sense of efficacy of the minority.

Combining small group discussion exercises

The three forementioned exercises outline the complexity of tracing the impact of a single sub-subsystem such as a deliberative exercise within a small group discussion on efficacy. Actually, most democratic innovations integrate all three exercises and more.

Imagining a sequence of these three exercises, we could assume an increase in internal efficacy if the consensus building is successful and the ideation exercise balances the effect of the argumentation exercise. The complexity is already quite overwhelming and we have little knowledge on what happens when the third exercise is mismanaged. So the thought exercise shown below might be helpful to organize research designs that can test such hypotheses.
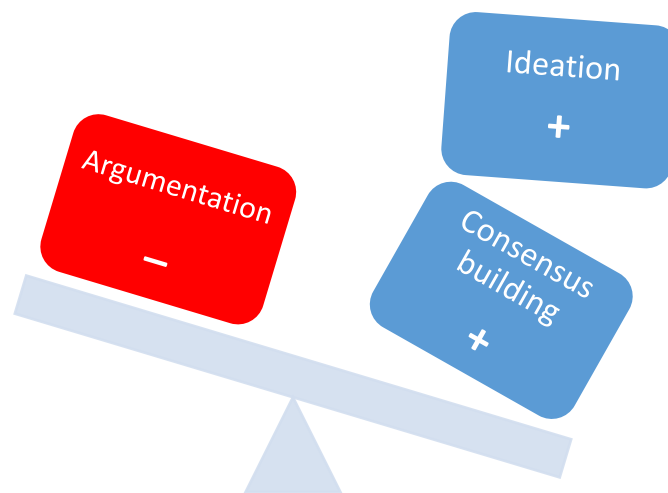
Figure 3 – Example of hypothesis of overall effect group discussion on efficacy: ideation and consensus building have a positive effect that together, overcome the negative effect of argumentation

The identification of these three basic exercises makes it easy to imagine a research agenda based on experiments aimed at solving the puzzle. Each exercise is clearly identifiable and can be reproduced under a large variety of conditions. This approach would also promote a better qualitative reporting of the experience of actual democratic innovations and help unearthing exercises that did not get as expected (Spada & Ryan, 2017).

Taking ownership of the process

The specific subsystems of some democratic innovations are designed to relinquish organanizers' control over part of the agenda and part of the design of the process itself. Many deliberative exercises begin by allowing the participants to establish overall principles to guide their activity within an established framework. Similarly, some participatory budgeting processes introduce a rule-making workshop prior to each cycle which allows participants, or a steering committee, to change the rules of the process. Open space technology and unconferences are the most extreme examples of this approach in which the entire process is structured around a shifting agenda.

The effect of having the ability to set the agenda and re-design the rules on participants' efficacy has never been explored empirically.

While we can expect that the ability to deeply control the design of a democratic innovation itself might further reinforce the sense of participants' efficacy, we have examples where an elite group emerged that reshaped the rules to strengthen their position, thereby eventually decreasing the overall legitimacy of the process (Spada & Allegretti, 2017).

Discussion: the advantages and disadvantages of the systemic approach

This chapter by itself does not offer additional empirical evidence with respect the impact of democratic innovations on efficacy, but it offers an introduction to the most critical elements in the debate in the literature in social science and offers a framework that allows the researcher to be more aware of all the factors that can impact participants' efficacy.

The chapter used as example the impact of participatory budgeting and deliberative poll on efficacy due to the large amount of studies that have dealt with this topic generating conflicting results that are difficult to reconcile.

The chapter shows that by interpreting these two very different democratic innovations as a system that combines similar subsystems it is possible to create testable hypothesis on single subsystems, and their combination, moving beyond a simplistic analysis that would treat DP and PB as black boxes.

The approach of this chapter can be applied to analyze the impact of democratic innovations in general. The framework we describe moves beyond the current alchemic state of the field to achieve the construction of a global repository of knowledge on the subsystems of democratic innovations akin to "a table of elements".

While it is not difficult to sketch such research agenda mixing laboratory experiment at the micro level, with participatory action research, field experiments and qualitative comparative analysis at the macro level, the adoption of such systemic strategy of research requires a level of coordination that is currently absent in the field.

Additionally to move from the current alchemic exploration to systematic testing we need to replicate experiments and pilots across many different environments. Such work is not glamorous enough to achieve publication status and thus we might need new governance institutions and incentive structures to set it up. For example we could introduce in our curricula classes that promote the repetition of pilots

and experiments focused on single subsystems (e.g.; engagement, ideation, filtering…) as a teaching tool for students interested in the methodology of implementing and evaluating democratic innovations.

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