SMARTER TOGETHER?
Collective intelligence and change in government

Stephen Boucher

Introduction
The backdrop to this handbook is people’s increasing disaffection with representative democracy, attacks against representative democracy, and, for some people, the appeal of undemocratic alternatives, including autocracy, the rule of experts, and military rule. In many countries, representative democracy is seen as not delivering sufficiently, not working properly, and not caring enough (Wike and Fetterolf, 2021; European and World Values Survey, 2017). Around the world, there are alarming signs that countries could slip away from democracy, a trend that has been exacerbated by the Covid crisis.¹ Such disaffection has contributed to the success of populist parties at the ballot box in many countries. Yet many of the same countries also express a desire for new forms of democratic governance (Welzel, 2021; Fourquet and Sibai, 2018; Harris, 2021).

The inquiry into the potentialities of what humans are capable of doing together at their best—the quest for optimal collective intelligence (CI)–is part of a deeper quest for more comprehensive understanding, and more powerful capacities of agency, to govern our common destiny in wise and appropriate ways. This inquiry has many implications for the role of governments in our society, which are called to evolve and transition into a whole new strategic and operational paradigm. Our times call for renewed awareness and greater capacity for collective leadership in order to face the systemic challenges that we face in a more intentional, effective, and strategic way. The field of CI, although still in its infancy, gives us some key questions and insightful responses into the best ways to capture collective creativity to tackle the main crises of our time, which are fundamentally systemic, interconnected, and interdependent.

“The urgent question therefore lying now in front of us,” posits Geoff Mulgan in Big Mind: How Collective Intelligence Can Change Our World,

is how could democracy be organized differently if it wanted to make the most of the ideas, expertise and needs of citizens? (...) Or again, how could a city administration, or national government, think more successfully about solving problems like traffic congestion, housing shortages, or crime, amplifying the capabilities of its people rather than dumbing them down?

(Mulgan, 2019)
While this handbook tries to answer this broader question by examining the different facets of collectively intelligent forms of government and smart public decisions, this chapter explores specifically why CI is very necessary for solving problems yet very hard to implement. In doing so, we will tackle the following questions: How are politics and CI related in theory? Why do governments not harness the knowledge of their citizens in practice? Why are public institutions not designed purposefully to foster CI? Why is CI potentially a solution to people’s disaffection with representative democracy? And what are the signs that CI is already informing new governance models?

**Collective intelligence for public problems: Much needed and hard to come by**

*Politics and collective intelligence: A natural match, in theory at least*

Politics is by nature a collective art with collective consequences. How a government manages its decisions determines, in the long run, whether the resulting actions meet the needs of the majority of citizens, or only a few. As John Dewey observed, “every serious political dispute turns upon the question whether a given political act is socially beneficial or harmful” (Dewey, 1927). One can therefore easily see how CI can be relevant to politics and policymaking. We understand here CI as the ability that a group has to find solutions to problems collaboratively that are superior to any of the solutions that members of the group might have found individually. The challenge of governance is to put in place and use the decision-making processes that will help meet the needs of certain populations, with their particular preferences and interests.

From the same perspective, democracy, which aspires to be “government of the people, by the people and for the people,” as Abraham Lincoln put it, is quintessentially a collective art. Borrowing a term from the economic sphere, its end goal – at least from a utilitarian perspective – can be understood as producing Pareto-optimal decisions, i.e. decisions that meet the needs of the maximum number of citizens, with no alternative solution able to satisfy a greater number of them. In this light, the central question for any form of democratic decision-making process should be, in our view, the following: How can we make the process smarter so that it produces Pareto-optimal policies? This presumes, importantly, that citizens are able to discuss and identify their needs without the distortions that can lead to massive delusions, such as those famously recounted in Charles Mackay’s *Memoirs of Extraordinary Popular Delusions and the Madness of Crowds* (1841).

Such a job is complex. From our experience the type of CI required by public administration is very often about enhancing cooperation and collaboration, also often about enabling better coordination, and also about identifying and mitigating cognitive biases. With this in mind, driving social and political change generally requires a lot of intelligence, i.e., the ability to solve problems, as well as many skills at all stages of the policy process, with a focus on deliberation and creative thinking skills.

If one considers the six phases of the policymaking cycle outlined in Table 3.1, it is also apparent that the types of tasks needed to govern require a multitude of interactions at each stage, with adequately equipped people collaborating in smart ways in order to make decisions in the common interest. Even the most centralized regime is not led in isolation by a single ruler, whether benevolent or tyrannical. And given the complexity and interdependence of public problems today, no one actor has the power, information, or agency to enact change unilaterally. Collaboration is a must (see Table 3.1).
Throughout the governance process, collaboration between interested parties – in the sense that we highlight in the definitions chapter, requiring proper deliberation and fostering creative capacity – is essential. And one would expect that the job of any government seeking to produce solutions should *de facto* be to “harness the power of a large number of people to solve a difficult problem as a group [to] solve problems efficiently and offer greater insight than any one individual could provide”... in other words to foster CI, as defined by the *Financial Times* Lexicon.4

If politics is in principle a collective process that requires intelligence, CI is also by nature fundamentally political, in the sense of pertaining to shared goals and collective survival and flourishing. Etymologically, Geoff Mulgan reminds us, both words “collective” and “intelligence” have deep ethical connotations: “Intelligence derives from the Latin word *inter*, meaning “between,” combined with the word *legere*, meaning “choose.” This makes intelligence not just a matter of extraordinary memory or processing speeds. Instead it refers to our ability “to use our brains to know which path to take, who to trust, and what to do or not to do. It comes close in this sense to what we mean by freedom.” As “collective” also...
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derives from legere with the prefix col-, meaning “together,” Mulgan concludes, “collective intelligence is in two senses a concept about choice: who we choose to be with and how we choose to act” (Mulgan, 2019).

Yet this correspondence, so elegant in the abstract, faces some very real constraints.

In reality: The conditions for CI are not easily met

Why do governments not always produce good decisions? We all accept that governments, democratic or not, can produce either intelligent or suboptimal, if not outright stupid and dangerous outcomes. And, as polls suggest, more and more people doubt in particular that their representative institutions are capable of making good decisions. If we borrow from Hélène Landemore’s three conditions to enable collective wisdom in democracy (Landemore, 2012), we see how challenging they are to meet in practice.

- **Inclusion**: There has been a historic decline in the number of citizens taking part in civic processes such as voting (see, for instance, The Economic Intelligence Unit’s Index of Democracy, 2008 to 2020).
- **Cognitive diversity**: The sociological diversity of policymaking circles is usually limited, in democratic countries and beyond (Surel, 2000).
- **Deliberation**: It is only in carefully designed deliberative mini-publics that the five criteria for quality deliberation defined by James Fishkin (2018) are met, whereas political discourse in the real world seems sorely lacking in many respects (Johnson, 2005):
  - Quality information: How often indeed are participants given access to reasonably accurate information that they believe to be relevant to the issue?
  - Substantive balance: The arguments offered by one side often dominate the agenda – the list of issues to which political actors devote their attention – rather than being answered with equal consideration by other perspectives. In fact, there is a notable tendency towards stridency in debates whose terms are framed by one side (on framing: Lakoff, 2014).
  - Diversity: The participants in any given public discussion rarely bring together the major positions at play on the topic considered. In fact, “One of the most important traits of human sociality is homophily, the tendency of similar people to be connected to each other due to their shared biological and cultural attributes such as gender, occupation, or political affiliation,” which “is a major force behind several pressing social issues including inequality, segregation, and online echo chambers” (Asikainen, 2020).
  - Conscientiousness and equal consideration (respectively in Fishkin’s words “the extent to which participants sincerely weigh the merits of the arguments” and “the extent to which arguments offered by all participants are considered on the merits regardless of which participants offer them”) are also rarely visible in everyday political debates or conversations.

Geoff Mulgan lists in his chapter in this handbook six functional capabilities of intelligence: the ability to observe the world, models to make sense of the information thus gathered, creativity to come up with novel and useful solutions, memory, empathy, and judgment and wisdom. Examining politics through this lens, we also see how designing institutions that can accomplish each of these tasks effectively is difficult:
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- **Observation**: While policymakers are overwhelmed with data, it is often hard to identify the most relevant data for the task at hand, or “weak signals” of problems before they arise.

- **Models**: Ideologies and dominant logic get in the way of sensible action: “what is seen are information-rich but interpretation-poor systems (...) that seem to confuse raw information or data with appropriate actionable knowledge” (Bettis, 1995).

- **Creativity**: Policymakers consider only a limited set of policy options, often constrained by political communications considerations, resulting in a narrow Overton window on any given issue in any given context. Named posthumously after Joseph Overton’s model of public policy change, the Overton window refers to the range of policies considered acceptable by a given population at a certain time. This is a particular challenge.

- **Memory**: It is hard in government to draw the right lessons from past successes and failures. Even policies that have worked well in one context cannot always be successfully transposed to another.

- **Empathy**: As French analyst Pierre Rosanvallon notes, people’s perceived hardships and emotions largely structure today’s political landscape, but are unequally acknowledged and channeled, and when they are, it is usually more deliberately so by populist movements (Rosanvallon, 2021).

- **Judgment and wisdom**: When it comes to drawing “on experience, ethical sensitivity and the ability to take a long view” and “being fluent in many frameworks and models and having the experience and judgment to apply the right ones, or combine them, to the context” (Mulgan’s description of applying judgment and wisdom), we know from economists David Colander and Roland Kupers that public administration tends to be dominated by economists’ tools (Colander, 2016) and from Australian academic Jonathan Boston that governments tend to have a “presentist bias” (Boston, 2016).

**Thinking collectively requires overcoming conflicting interests**

The fact is, as described in Lex Paulson’s chapter on a “brief history of collective intelligence, democracy, and governance,” while CI has emerged since the earliest human societies from political practice, institutions have rarely been purposefully designed to overcome the obstacles listed above and to foster the key components of better collective thinking. At the heart of this divergence lie two characteristics that set policymaking apart from other human activities: politics is inherently conflictual, and any public challenge is by nature intermingled with many other complex aspects of life in society. It is the plural and often conflicting nature of interests within a society that makes “public collective intelligence” a particularly hard challenge.

The job of politicians devising policies and those implementing them – public administration – is indeed by nature the art of dealing with conflict and enforcing or preventing change. And those that have power are those that can decide what the issues are, make decisions, and impose changes that impact others’ lives. We are a social species in a constantly changing environment; we need some way of making decisions, resolving conflict, and distributing resources for our survival. Thus, all human societies have systems of authority and rules of government, which are essentially about mediating diverging interests and imposing change so that the desires of some prevail over the preferences of others.

Managing change is at the heart of governance. This can take the form of policy change – incremental shifts in structures and policies (Bennett and Howlett 1992, cited by Cerna,
Policy change and reform may in turn introduce familiar solutions or bring about innovation – whether incremental, structural, or disruptive – which is a solution seen by observers as both useful and original relative to the context in which it is introduced. The types of innovation covered in this book include social innovation (solutions that address social needs), policy innovation (new public policies), democratic innovation (in the forms, institutions, processes of democratic governance), and political innovation (which, in our case, refers specifically to novel political campaigning approaches).

We are all accustomed, as citizens, to seeing policymakers struggle with bringing about change, let alone innovation. Indeed, no matter what the nature of the reforms introduced – be they to the pension system, designing a new public square, or updating car safety standards – each will encapsulate a choice of values, aspirations, visions, and interests. Each will prioritize different trade-offs, ex ante, and each will have different distributional effects ex post. Vested interests of groups are thus likely not to be aligned before, during and after the negotiation and implementation of reforms. As Greener notes (2002), actors who benefit from existing models tend to resist changing them. And, as explored by various scholars, interest groups tend to invest more energy in resisting policies they perceive as unfavorable than in promoting favorable ones (Rauch, 1994). The favored strategy of pressure groups to win arguments is often not to mobilize their collective thinking to come up with solutions closer to the Pareto frontier – that is, where the overall benefit to all stakeholders may be greater – than to form coalitions that resist any change to the status quo (Guéguen, 2021). European lobbying veteran Daniel Guéguen notes in fact that today, in the context of EU policymaking,

Industry pressure groups no longer have lobbying strategies. Their coalitions are false coalitions around EU consultations designed to increase the number of signatories. EU trade associations have become bureaucracies that are crippled by the lowest common denominator. They are reduced to defensive actions.8

Guéguen’s observation resonates with my own experience as a former lobbyist at national and EU level and later as an EU affairs ministerial adviser. The trend most evident from these experiences is toward broad federations of stakeholders that rally around lowest-common denominator positions, while governments seek to reduce the costs of reform for the groups that have been most vocal. Most interest groups master the art, not of smart collaboration toward common and innovative solutions, but of preserving the status quo.

Therefore, if politics is eminently about solving a multitude of complex problems, that job is made all the more difficult by the fact that the parties involved may not want to collaborate, but may in fact compete at each step of the process, framing issues and proposing solutions in a way that serves their interests and disqualifies other points of view. The adversarial nature of modern politics explains why thinkers, especially in the West, have tended to focus on ensuring people’s security (Hobbes), preventing absolutism and protecting the state of law (Locke), enhancing personal freedom,9 the balance of power, and religious tolerance (Jefferson), serving the general will rather than private interests (Rousseau), etc.10 Therefore, the key decision-making and CI tools at hand in the Western model of democracy – elections, parliaments, public administration – have been designed to reflect those priorities but not specifically engineered to foster the CI of the constituencies of actors involved. The CI benefits that we may find in today’s institutions are principally from trial and error rather than conscious design. It has thus taken this long to ask ourselves the question posed by Geoff Mulgan above: How can we make the most of the ideas, expertise, and needs of citizens?
Now, putting aside for a moment the conflict-driven perspective, different explanations of policy change have emerged based on notions of learning. Indeed, while conflicting interests are central to public problems, stakeholders of a given issue often seek to develop new policy options by learning from others. This too poses specific problems. Take, for instance, a consensual policy objective such as ensuring that all children get the best possible education. Why is it, for instance, that the PISA scores\textsuperscript{11} of children in Wallonia, the Southern region of Belgium, are so much lower than those of children in neighboring Flanders in the northern part of the same country? How much policy learning is there from the North to South of Belgium and vice versa? Policy learning refers to “relatively enduring alternations of thought or behavioral intentions which result from experience and which are concerned with the attainment (or revision) of policy objectives” (Heclo, 1974, p. 306, cited by Cerna, 2013). This highlights the fact that actors in the system can change their beliefs and adopt new policies by learning from others. It involves different processes, including learning about organizations, programs and policies, and policy diffusion or policy transfer, which is more specifically the process by which one public authority learns from another (Evans, 2009). Policy learning and transfer also turn out to be difficult: there is limited search activity; institutions are not always receptive to ideas; resources to adopt solutions may be insufficient; solutions might appear too complex, or disregard local know-how and knowledge; etc. There are cognitive as well as environmental obstacles (including linguistic, cultural, and political ones in the case of Flanders and Belgium, despite their geographical proximity) (Evans, 2017).

Furthermore, aggregating conflicting interests, making decisions, guiding change, and learning from experience grow more challenging as the world becomes more complex.

**The interdependence between issues and actors makes collaboration harder**

Due to coronavirus disease 2019 (Covid-19), everybody has come to realize concretely what the U.S. Army summarized in the acronym VUCA: Volatile, Uncertain, Complex, Ambiguous (Bennett and Lemoine, 2014): We live in volatile, uncertain, complex and ambiguous times. Public problems related to Covid have been: Volatile because the rate of change has been very high with the frequent appearance of variants reshuffling the deck of cards; Uncertain because governments, scientists, and citizens alike have been unclear about the situation and the factors at play from the start;\textsuperscript{12} Complex because the number of factors and actors involved in the crisis and its resolution has been worldwide and multidimensional; Ambiguous because even with huge amounts of data, the interpretation of information has proven difficult at each step. As a result, governments around the world have an increasingly hard time predicting the outcome of their decisions and understanding the situation, despite having access to unprecedented amounts of data. This is the case for many public problems that evolve ever faster, with unclear outcomes and developments, and where interconnections multiply between actors, causes and effects. And even when we do have data, interpreting what we know is hard.

In such a context, the possibility of unforeseen tipping points – also known as “punctuated equilibrium” (Baumgartner and Jones, 2009) – is greater. While there is ever more information and competition on the global market for policy ideas, some ideas will get more attention than others and gain unstoppable momentum, potentially leading to periods of rapid change (Baumgartner and Jones, 1991; Gladwell, 2006).
Overall, policymakers’ job in a VUCA world becomes all the more difficult, as change is so unpredictable and finding the right answers gets harder, yet the pressure on public administration to enact change that makes a visible difference increases. As a Belgian civil servant told me in recent interdepartmental negotiations on a new climate and energy plan for 2030, “We keep adding new requirements to our agenda. They’re all legitimate and important, from gender issues to climate to biodiversity, but they all require more horizontal coordination, more expertise, while we don’t get more resources. It’s becoming very hard to follow. And once you add new demands, there’s no going back, it keeps piling up.”

The increasing complexity of problems is forcing all types of organizations, and of course governments, to develop new learning processes to keep up. In this context, Peter Senge’s “five disciplines of learning organizations” are useful (Senge, 2014). Finger and Bürgin Brand pointed out (1999) that our governments need to become learning organizations, a concept which Peter Senge popularized as places “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together” (Senge, 1990). That – idyllic? – vision clashes with the reality of public institutions. They are often too slow and rigid. As Pierson (2000) notes, public policies and formal institutions are usually designed to be difficult to change, so past decisions encourage policy continuity. Public bodies suffer from path dependence, as “once a country or region has started down a track, the costs of reversal are very high” (Levi, 1997). Such path dependence is illustrated, for instance, by the difficulty of transitioning entire economies away from fossil fuels. And public administration is usually designed to provide stability and clarity in the execution of public policies, rather than facilitate disruptive new approaches.

The difficulties of governments in innovating and scaling innovations can be enumerated ad nauseam. Christian Bason (2012) listed the reasons that he observed as head of the Danish public innovation lab, which other observers corroborate: Too much internal focus; a propensity to seek to retain power; insufficient static and dynamic memory despite (or because of) an information overload (Pollitt, 2006); a bias towards safety, certainty, hierarchy, and bureaucratic rigidity (Graeber, 2015); lack of holistic thinking taking into account feedback loops (Israeli, 2020); insufficient understanding of complexity and a prevalence of economic tools that oversimplify the world (Kupers and Colander, 2014); fear of experimentation; and a “bottom line” that is difficult to identify. And yet, many public officials are coming to understand that “the context of high volatility and complex challenges require governments to develop new responses, new capabilities and new ways of understanding how to act,” to quote the European Commission. Information overload amplifies uncertainty and ambiguity and civil servants around the world acknowledge that we need more minds working together on these challenges. For many, Covid-19 has catalyzed their thinking on how to increase public administration’s resilience through innovation.

Meanwhile, however, politicians’, bureaucracies’, and governments’ capacity to think and act has become an object of popular derision. But this is no laughing matter.

The legitimacy of representative democracy is being challenged by illiberal and autocratic regimes

The legitimacy of representative democracy as we have known it for the past century or so is being seriously challenged as the competition between different governance models runs
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rife. And as citizens’ trust in public decision-making processes – and in traditional information sources – weakens, acting collectively becomes still harder. Asking ourselves why and how collective wisdom can be mobilized for the benefit of the many is thus inseparable from the issue of the legitimacy of public decision-making. And the question we face becomes not just, as Geoff Mulgan phrased it, “how could democracy be organized differently if it wanted to make the most of the ideas, expertise and needs of citizens?” but also “how, in doing so, can it regain people’s trust?”

Political scientists Fritz Scharpf (1999) and Vivien Schmidt (2012) invite us to consider three dimensions of the legitimacy of public action, which Schmidt defines as “democracy requiring government by the people (political participation), of the people (citizen representation), and for the people (governing effectiveness).”

1. **Input legitimacy** is the perception that policies have been guided or oriented by the people they are intended to serve;
2. **Throughput legitimacy**, also referred to as procedural legitimacy, comes from the perception that the policies have been developed through fair and transparent processes;
3. **Output legitimacy** is the perceived effectiveness of policy outcomes for the populations concerned.

To these three dimensions of public legitimacy, we propose to add a fourth:

4. **Emotions legitimacy** is the perception that policies correspond with the deeper values, aspirations, worries, feelings and needs of the populations concerned (Boucher, 2021a).

Integrating all the above, we see that the challenge to democratic forms of governance is along all four dimensions.

1. **Input legitimacy**: Populist movements have renewed political communications, either communicating on unprecedented scales directly with their constituencies (e.g. Donald Trump tweeting), or organizing internal online forums (e.g. the Italian Cinque Stelle movement with its pioneering Rousseau digital platform). Populists claim to act on behalf of a purported better understanding of what more “authentic” people truly want and have managed to give the appearance of being more approachable to some categories of the population, as results at the ballot box indicate. Meanwhile, the very foundations of what constitutes meaningful, even truthful contributions to the public sphere are severely undermined.

2. **Throughput legitimacy**: Procedural legitimacy was most likely the driving concern behind the organization of the French “Grand national debate” in 2019 following the yellow vest movement, which complained fiercely that decision-makers were too detached from people’s real-life hardships, likening President Macron to Louise the 16th and his wife to Marie-Antoinette. A key request of the movement was more direct democracy. With the national debate, the French authorities intended first of all to set in place an organized process to inform policymaking. In fact, many questions during the “Grand Débat” revolved around how transparent the algorithms were, who got to choose the questions in local debates, etc.

3. **Output legitimacy**: Authoritarian rulers promote a technocratic/elitist form of government that they claim is less messy and overall more effective. In fact, “illiberal” regimes
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take the liberty to stress this, as did, for example, a recent article in China’s *Global Times* arguing that an “Overloaded West faces [a] crisis of democracy,” which suggested that the enterprise is inherently flawed, as “Europe and the US look like an overloaded old car” with “the policies of political parties [concentrating] too much on the so-called interests of their voters.” The article concludes, as surely many other people do in China and elsewhere, that “the Covid-19 pandemic has become a crisis of the West and democracy” and that “the powerful role of government in allocating resources is now clearly indispensable. Governments should make and implement orders. People need to fully cooperate with them as responsible citizens. (…) And arguments should give way to cooperation” (Wen, 2021). However, is top-down decision-making by a small clique of like-minded bureaucrats what will help the State become more effective in the face of future crises and increasingly complex challenges, and will this be sufficient to restore trust in government?

4. **Emotions legitimacy**: The French “Grand débat” was, argues Hélène Landemore (2020), unprecedented for France (and Western democracy) for its scale and methodological effort. Yet people’s trust in the government was not perceptibly improved in its immediate aftermath, with the government, and in particular the country’s president, still very much seen as aloof, even snobbish by many. Based on this and other recent examples, we argue that policymakers should, in addition to attending to people’s input, the decision-making process and the impact of their decisions, attend to “emotions legitimacy.” In other words, truly listening, being seen to show empathy and care about people’s feelings, and treating such emotions as meaningful input for policymaking. This is starting to become a topic of attention for those developing new deliberative democracy approaches (see Blondiaux, 2018). As the Grand Débat suggests, even if efforts are made to bolster government’s input, throughput and output legitimacy, citizens may not develop great trust in their public leaders so long as they feel that their fears, feelings of injustice or deeper aspirations have been ignored. Meanwhile, populists have become “emotions entrepreneurs,” argues French analyst Pierre Rosanvallon (2021).

Yet, most people still want more democracy, certainly in countries with a long history of representative democracy. Taking again the example of France, a large majority of citizens now want public officials to ask citizens what they think more frequently and through various channels, including citizen councils, large surveys and national debates, citizen assemblies, participatory budgets and other mechanisms. There is widespread backing for direct democracy in many countries. In this context, we believe humanity faces at least the following crucial questions: Can democracy foster CI better than other forms of government? Can CI, properly nurtured, serve democracy better than other regimes and help invent new and deeper forms of democracy? Can CI serve democracy in a way that strengthens its legitimacy on the global governance market? Can we muster CI deliberately to serve governments and people better? Why does CI not work in some of the stories told in this book? Can CI become an effective approach to strengthen input, throughput, output, and emotions legitimacy?

We will now seek to provide some very preliminary answers to these questions to provide some elements of context for the stories in this handbook. These questions will however require our utmost attention and need to be answered convincingly and in depth in the coming years, far beyond what this handbook can achieve.
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CI and the renewal of democracy

Overall, democracy is a more natural laboratory for collective intelligence

Fostering inclusion, diversity, and deliberation and bringing together purposefully the six functions of “government as a brain” suggested by Geoff Mulgan is not a given, as we have just seen. This does not mean however that all governance types are equal in fostering or hindering the emergence of better collective decisions. Hélène Landemore (2012) and the school of epistemic democracy argue forcefully that, while citizens may not always think rationally, and may be apathetic and poorly informed, democracy is the system that makes the most of this human material, which many will deride as incapable of making good collective decisions (and yet which all political systems must account for). Democracy, Landemore and others argue, in particular in the more open form she envisages, can be seen as a cognitive system that epistemically outperforms the rule of the few, because democracy is better at aggregating the information and expertise of large and diverse populations, thus making better collective decisions, if not every time, certainly on average over time. Through inclusion, cognitive diversity, deliberation, and majority rule, errors tend to cancel each other out, and, over time, democratic regimes tend to make less mistakes than less democratic regimes. In summary, Landemore argues “that in an open liberal society, it is simply more likely that a larger group of decision makers will be more cognitively diverse, and therefore smarter, than a smaller group.” She thus attributes “the epistemic superiority of democracy not only to the sheer number of decision makers, but also the qualitative differences that, in liberal open conditions, this great number of decision makers is likely to bring with it” (Landemore, 2012).

Democracy in this spirit does imply a certain kind of liberal society, with a free market of ideas, a diverse economy, and liberal education fostering autonomy and individuality (Landemore, 2008). Under such conditions, inclusive deliberation (direct or indirect) tends to produce better results over time than deliberation among a small circle of experts, while providing the many with majority rule matches epistemically the smart few (Landemore, 2012). Combining both aspects – deliberation and majority rule – results in democracy epistemically outperforming other forms of governance.

Despite these advantages, real-world democratic systems feature numerous obstacles to CI, as we have seen, requiring us to think about how to deliberately nurture the factors that will make it more likely to see better solutions emerge. Such factors, as mentioned earlier, include in particular inclusion, cognitive diversity, deliberation and majority rule. Also, social psychology scholars have stressed the importance of intrinsic motivation to foster creativity and innovation within groups (Csikszentmihalyi, 2013). Intrinsic motivation is the act of accomplishing something without the need for external rewards (Amabile, 1998). It can be linked to the importance of emotions in collective affairs mentioned above. It is central to overcoming the conflictual nature of politics highlighted earlier. Adequately combined, those five factors have the potential to give public decisions greater legitimacy.

Can collective intelligence help solve the legitimacy equation?

The stories told in this handbook show different ways of tackling the key obstacles to acting collectively and bringing about change and sometimes expanding the window of discourse, including in very difficult contexts such as the Covid-19 pandemic. It is interesting to note that many cases describe a similar effort to nurture a combination of greater inclusion,
cognitive diversity, collaboration methods (including deliberation and many other types), and/or harnessing intrinsic motivation to create better public solutions. Sometimes these processes unfold intuitively, without branding the approach with a specific name; sometimes they employ carefully developed and tested methods. These principles are illustrated by the following examples.25

• **Inclusion**: Carina Antonia Hallin, with a case in Denmark, Anirudh Dinesh in Latin America, Helen Liu and Lin Tze-Luen in Taiwan, Elisa Lironi in Iceland, and Gitte Kraghe regarding citizen science in the Arctic, each show the potential of crowdsourcing for addressing public challenges. Crowdsourcing has been defined by Howe (2006) as outsourcing a task to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential laborers.

The cases show that crowdsourcing can also be applied to a variety of policymaking tasks as an alternative to other forms of idea generation (Pisano and Verganti, 2008). Ankitha Cheerakathil, in her story about participatory budgeting, Passy Amayo Ogolla and Julie Jenson Bennett, in theirs about futures thinking, and Keira Oliver and her colleagues in the Scottish administration show how broadening the circle of decision-makers can, under the right circumstances, foster positive results by sensing the context better, coming up with new options, providing greater legitimacy to the decisions, etc.

• **Cognitive diversity**: Verena Ringler and Chiara Rosselli suggest how lawmakers from different countries can get to know one another and appreciate different perspectives, while David Baum tells a compelling story of how the fresh perspective of a younger generation helped an indigenous community overcome internal divisions. The story of the Youth Justice Board in the UK demonstrates how attending to the institutional setup can be central to overcoming silos, contributing different skills to the task, and stimulating new thinking and energy. And Emile Servan-Schreiber recounts how certain types of crowds can forecast the evolution of infectious diseases better than specialists with the right tools and protocols.

• **Collaboration methods**: Tim Switalski shows how positive change can occur when there is an alignment of the relevant people using a creative process under the right conditions to produce meaningful outcomes. The International Panel on Climate Change is a prime example of collaboration on a major scale, combining science and diplomacy as expanded on by Kari De Pryck. Aadisteshwar Seth shows how mobile phones can be used to accelerate collective learning, even in marginalized communities. The role of experimentation is highlighted in Pierre Portevin’s story of a local innovation agency and in the story I tell of an experiment to fight long-term unemployment in France. Prof. Carina Hallin shares the case of a Danish city using Artificial Intelligence (AI) to reinvent local government and improve deliberation with citizens. Luis Lafosse talks about how Australia successfully pioneered public challenges in the early part of the 20th century, while Prof. James Fishkin tells us of the adaptation of the Deliberative Polling method to the era of online video conferences. Many other methods are illustrated throughout the
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• **Fostering intrinsic motivation:** As Stephanie Tawa-Lama shows, carefully nurturing inclusion, diversity, giving a voice to the excluded, and allowing hopes, frustrations, resentment, even acrimony to be expressed in a constructive fashion can help victims of discrimination engage with public authorities. Knut Bergmann describes how former German Chancellor Helmut Kohl sought to create the right conditions to nurture dialogue in a diplomatic context, while Bernard Le Roux explores how deep listening facilitates productive dialogue within local communities (and what happens when this fails). Allowing actors to express a shared and desired vision of the future and to come together around a common set of values is also central to the story of The Alternative, a recent political formation in Denmark. Keira Oliver tells an impressive story of how the Scottish government built on the insights of Theory U – a leadership and CI approach developed by Otto Scharmer of the MIT – to tap into people’s deeper aspirations in order to tackle the Covid crisis.

On paper, carefully cultivating such factors can lend public decisions greater legitimacy, thus facilitating systemic change:

• **Input legitimacy,** because CI requires that we make purposeful efforts to tap into “the crowd’s” different perspectives. Nearly all the actors of the cases studied in the handbook make a deliberate effort to involve a wider range of players (and, note, not only “ordinary citizens,” but also a variety of experts).

• **Output legitimacy,** because CI carries the promise of delivering better solutions. This is always a matter of appreciation. However, all the Covid-19-related stories, the Youth Justice Board story (in which the number of juvenile delinquents behind bars was cut into half), the What Works Scotland example, the reform of Iceland’s constitution, and many other examples show a marked improvement in outcomes for the target populations, whose inclusion in the process also helps ensure the viability of these approaches over time.

• **Throughput legitimacy:** Because CI requires careful decisions about the steps, methods, and tools employed in a given process, it can, overall, be perceived as being fairer. Collaboration, transparency, and accountability are at the heart of CI and open government approaches. This is the case, for instance, of the jan sunwai complaints mechanism in India, or of the Icelandic constitutional reform process and many others.

• **Emotions legitimacy,** by listening to relevant stakeholders’ deeper values, aspirations and visions for the future. We see attempts to do this in the examples of the North American tribe, Scotland using the Theory U approach, the Sager der Samler citizen platform in Aarhus or again in the case of the jan sunwai.

In turn, we can surmise that greater legitimacy is positively correlated with intrinsic motivation to engage in public affairs and contribute one’s opinions, ideas, and talents for the public good.

**New governance methods to harness CI are under construction**

We arguably have never been as well equipped as we are today with knowledge, know-how, data, tools, and technologies to make sense of the world’s complexity. Overall, we have seen over recent years a flourishing of methods that seek to nurture the key factors of CI in service to public decision-making. Table 3.2 provides a cursory overview of some of the
### Table 3.2 How collective intelligence methods contribute to the six phases of the policy cycle:

**Examples of methods and tools**

*NB – Several of the methods listed below can be applied at different stages of the policy cycle.*

<table>
<thead>
<tr>
<th>Phase</th>
<th>Examples of methods and tools</th>
</tr>
</thead>
</table>
| 1. Agenda-setting and problem definition | - Civic-, gov-tech to identify and discuss issues  
- Crowdmapping platforms  
- Participatory Action Research  
- Data mining  
- Prediction markets  
- e-petitions  
- Surveys (off-/online)  
- Forecasting, crowd predictions, future studies, scenario building (e.g. Future casting; TSP; Delphi method, Future workshop, Causal Layered Analysis…)  
- Collaborative mapping  
- Predictive modeling, Predictive Analytics and AI in Governance  
- Lean and prescriptive analytics, behavioral insights, ethnography… |
| 2. Creating solutions | - Open calls  
- Open data / government  
- Participatory Budgeting  
- Collaborative platforms  
- Hackathons  
- Design thinking (e.g. living labs…)  
- Public challenges and other challenge mechanisms  
- Ideation techniques (e.g. design sprints, hackathons, Creative Problem Solving…)  
- Policy labs  
- Think tanks  
- Citizen juries |
| 3. Selecting options | - Mini-public deliberations (Citizens’ Assemblies, Deliberative Polls, planning cells…)  
- Focus groups  
- Opinion surveys  
- Data collaboratives  
- Decision Matrix, Multi Criteria Decision Analysis |
| 4. Argumentation and acceptance | - Transformative Scenario Planning  
- Door-to-door canvassing  
- Citizen hearing  
- Serious gaming |
| 5. Implementing, testing and scaling the solution(s) | - Nudging  
- Mutual aid networks  
- Pol- / Legal- / Sup-tech  
- Regulatory sandboxes and innovation hubs  
- Randomised control trials |
| 6. Evaluation, learning, correction | - Wikis  
- Communities of practice  
- Collective learning and sense-making  
- Research, training  
- User committees |
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Approaches being developed in relation to governments’ various tasks. While incomplete, it illustrates the diversity of paths being explored, including and beyond those presented in this handbook. While incomplete, it certainly shows that CI methods that can help public administration and people address public challenges go far beyond citizen participation, which in turn many simply equate with citizen assemblies. Governments’ CI toolbox is far richer and expanding by the day.

New institutional models are being designed with CI in mind

Not only do policymakers have at their disposal a variety of methods inspired by CI principles, new forms of governance and institutional designs are also being informed by new values and objectives that put CI to public use. Some governments have been learning to become not only forward looking — learning how to think ahead with others — but also outward looking — considering the experience and input of other stakeholders, including the experience of other countries. Such openness to outside input is relatively recent.

This diversification in approaches was recently charted by the UK Policy Lab (see Figure 3.1), a civil service unit that believes “that future public policy should be more open, inclusive, evidence-based, empathetic and informed by both present and future needs.” Through its many interventions, the UK Policy Lab has developed a vision it calls “Government as a System.” As Table 3.3 indicates, public authorities have at their disposal a variety of governance styles, depending on their propensity to be, on one side of the spectrum, centralized, directive, and hierarchical, or, on the other side, reliant on outside input, collaborative, and open. Combined with seven different possible functions (influencing, engaging, designing, developing, resourcing, delivering, and controlling), the UK Policy Lab identifies 56 very distinct governance approaches and types of action, from an advisory or stewardship role to a more traditional regulatory function.

As the recent past has shown, as well as the stories told here, governments have become adept at mobilizing a variety of governance styles and functions, including to tackle the Covid-19 pandemic. New approaches are being studied, such as “joined-up government” and “networked governance” (Pollitt, 2003; Hartley, 2005; Mulgan, 2009), or “public value governance” (Bryson et al., 2014), highlighted by Helen Liu and Lin Tze-Luen in the case of vTaiwan), that cultivate the core principles of CI. Bryson, quoted by Liu and Tze-Luen, argues that

The new movement is a response to the challenges of a networked, multisector, no-one-wholly-in-charge world and to the shortcomings of previous public administration approaches. In the new approach, values beyond efficiency and effectiveness—and especially democratic values—are prominent. Government has a special role to play as a guarantor of public values, but citizens as well as businesses and nonprofit organizations are also important as active public problem solvers.

In different ways, the central role of government is being revisited pragmatically, in which it does not “get out of the way” of private initiative, but supports it. The Organisation for Economic Co-operation and Development (OECD)’s Observatory of Public Sector Innovation sees three new types of governance approach thus emerging: what it calls the “invisible government” (in which public authorities develop proactive public services that require little to no action by the user); the “matrixed government” (“making bureaucratic and sectoral boundaries permeable and bringing together different pieces of society...
Figure 3.1  Government as a system.

Note: Reproduced with permission from the UK PolicyLab.
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in order to work together to achieve goals”); and the “anticipatory government” (that “explores scenarios and takes action today to actively shape tomorrow”) (OECD, 2020). This transcends older dichotomies and suggests how public administration is in some places becoming increasingly permeable to outside input and long-term thinking.

All in all, new approaches and concepts are emerging in the field of public governance. Many are at an early stage, as are many of the initiatives in the stories presented throughout the handbook. Technology allowing, new democratic and governance innovations not covered here are yet to flourish, for instance, by voting and making decisions in smarter ways. It is therefore difficult to tell conclusively whether these approaches and concepts are key in securing the role of CI in modern democracies. We do however seem to be in an ebullient phase of exploration.

There is still a lot we don’t know

Despite the available evidence, the enthusiasm of many practitioners, and an abundance in methods and governance approaches, and while the positive effects of participation/deliberation on citizen engagement and increased public acceptance of policies have been studied, less attention has been given so far to the impact of CI methods on the quality of decisions. This is, arguably, a complex matter to research. As described in the Paolo Spada’s chapter, empirical studies of the real-world effects of crowd-based approaches on the quality of decisions and on the participants remain relatively scarce.

Also, while the toolbox for policymakers inclined to foster CI is rich and expanding quickly (as suggested in Table 3.2), the study and practice of how to combine and sequence these approaches throughout the policy cycle is still limited. Hélène Landemore in Open Democracy - Reinventing Popular Rule for the Twenty-First Century seeks to provide an integrative perspective, which practitioners and students of politics and CI alike can build on to address this matter.

Furthermore, crowdsourcing policies may not work in all situations, as argued by University of Illinois professor Tanja Aitamurto (2016). Aitamurto observed, in a policy crowdsourcing process regarding Finnish off-road traffic law reform, how a large number of local crowdsourced inputs may not fit well with the need for the synthesis at a higher level of abstraction that is often the job of policymakers. She noted altogether ten differences in the logic of crowdsourcing and policymaking. This is a challenge addressed as well in the story told by Mark Klein in this book. Thankfully, CI is not limited to crowdsourcing, and crowdsourcing and other CI approaches invite us to rethink traditional policymaking limited to a small set of players.

When considering again the six functions outlined by Mulgan, scholars and practitioners of CI in public affairs may pay more attention to understanding how to nurture the observation, models, and memory functions, possibly creativity to a lesser extent, but less so to the functions of empathy and judgment. John Parkinson, commenting on the lack of satisfying deliberation mechanisms to prepare for the UK referendum on EU membership, argues more generally that we pay insufficient attention throughout the policy cycle – outside electoral campaigns – to what he calls “the political arts” (Parkinson, 2016). The political arts are the factors that psychologists, political communication scholars, specialists of business leadership, cultural theorists, linguists, neuroscientists, and rhetoricians say go into persuasion and the changing of minds: the staging and performance of events, the framing of issues and arguments, the way that the meaning of events is constructed by leaders, background discourses, and the constructive channeling of emotions.
Finally, building on the controversy between Cass Sunstein (2002) and others regarding groupthink dynamics, scholars have shown that “free discussion without rules led to group polarization in like-minded groups, whereas polarization could be avoided in groups with deliberative norms” (Strandberg et al., 2019). More broadly however, we need to understand better how to foster proper deliberation and avoid group polarization online and offline in the public arena as a whole, and not just in controlled mini-publics.

There are many other points deserving our attention. Overall, Nesta and the GovLab note that, “despite some successes, too often leaders do not know how to engage with the public efficiently to solve problems,” and that knowing what institutional changes to make to develop new CI capabilities, and knowing “how to redesign the way public institutions make decisions, requires a much deeper and more nuanced understanding of when and how to use collective intelligence” (Ryan et al., 2020).

Hopefully, this handbook helps advance this critical conversation. Beyond what this book can contribute, we will need to continue researching the contribution that CI can make to foster change in government, in particular as new technologies, be they AI and bioethics, AI and predictive policing, or other new powerful tools keep offering new opportunities and presenting new risks to democratic societies everywhere (Lewandowsky et al., 2020).

**Conclusion**

Why put CI at the heart of politics? The answer may not have seemed obvious till now, considering how recent the interest in the matter is. Is it sufficient to note that public challenges require diverse forms of knowledge, and that harnessing the intelligence of many citizens is necessary to solve the hardest public problems? It is sufficient, in our view, to justify trying. Also, the rising complexity of problems and social pressures force us to explore the matter. When government as usual is no longer adequate, we need to develop new governance models that are smarter and, hopefully, more democratic.

This act of faith is corroborated by the abundant evidence found in this handbook and through the many directories of innovative public projects that can be found online. Today, all those wishing to act in the interest of the people, solve complex public problems, and develop adequate institutions to do so more effectively can benefit from the rich and evolving science of CI. Bearing in mind that, even if individuals within a community are willing to put their heads together to address common challenges, driving the systemic changes that such public challenges require remains very difficult in the face of real-world politics. This is why the science of CI must develop as an interdisciplinary field that brings together research from cognitive science, political science, computer science, sociology, social psychology, and many other disciplines, as we have sought to do in this handbook by calling upon a diversity of contributors. Just as the art of nurturing creative teams, designing innovative workspaces, or developing management practices based on CI principles has been cultivated in the private sector, so are we learning how the factors of CI can contribute in the public realm. At every step of the policymaking cycle, mobilizing CI well and ethically can serve policymakers and the people. Conversely, badly organized citizen engagement and decision-making processes can be counterproductive.

What needs to be stressed also is that CI in public affairs is not a mere teamwork. While politics is a team sport, not all forms of governance produce CI, and, in turn, not all “collectively intelligent” forms of governing produce solutions that are necessarily ethical and/or in the interest of the largest number of citizens. We explore in this handbook some of the
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key factors that improve the ability of a decision-making system to produce better solutions. The specificity of politics however, relative to other human activities, lies in the importance of the normative nature of the decisions taken. It is thus inherent to the job of solving public problems that we need to combine the “procedural” dimension of CI (e.g. key conditions such as inclusion, diversity, collaboration methods, and intrinsic motivation), with adequate methodologies and technologies (be they online platforms, deliberative polling, or appreciative inquiry), and with ethical guidelines, noting that any of those principles and methodologies can be mobilized by any type of public authority, whether or not such authorities respect the core principles of freedom of speech and assembly, consent of the governed, the protection of minority rights and other central tenets of democracy. In our view, all the examples chosen for this handbook meet this standard.

We still lack systematic evidence on how politics can best be served at each point of the policy cycle by diverse forms of CI, fostered by different reforms of democratic institutions. As “considerable challenges remain to identify specific conditions facilitating reform and to pinpoint windows of opportunity,” (Cerna, 2013) a key question for the near future will be whether the careful nurturing of CI increases the ability of policymakers not only to introduce better reform, but also how this in turn strengthens – or not – the performance of democracy and people’s adherence to its principles. We are aware that the intentions of policymakers in the stories told in this book are not always explicitly stated. Taking steps to foster CI is well and good, but sharing transparently how external parties’ input is treated is crucial to the long-term credibility and effectiveness of such processes.

Overall, the evidence is nevertheless there that our collective genius can develop smart solutions, from bagless vacuum cleaners to problems as tricky as protecting the ozone layer. While helping CI emerge in public affairs and democracy is very hard because of the conflictual nature of politics, it is precisely because that task is hard that we must explore – enthusiastically and rigorously – new and better ways to make government of, by, and for the people a reality.

Notes

1 The overall erosion of democracy over the past 15 years is apparent in the Economist Intelligence Unit’s yearly Democracy Index while various surveys, such as the Pew Global Attitudes Survey, document people’s increasing disaffection with representative democracy.
2 For systematic definitions of the terms used throughout the book, readers may revert to the definitions chapter.
3 Tables 1 and 2 borrow from Boucher, 2021b, pp. 13–14.
4 Quoted by Thomas Malone in his Handbook of Collective Intelligence (Malone 2015).
5 see also www.mackinac.org/OvertonWindow.
6 See the case study “Challenging Received Wisdom and Spreading Innovation: Lessons from the Youth Justice Board”.
7 As compared to, for instance, the CI needed to design a space shuttle or a bagless vacuum cleaner, which are commonly seen as breakthroughs in human ingenuity. These are no small feats, but they only concern a very specific challenge and a very small part of people’s lives. The rewards for innovation are relatively immediate in the private sector. The task is as a result comparatively easy as compared to the public sector.
8 Email correspondence, July 22, 2021.
9 Furthermore, the post-Locke tradition is very focused on “negative” freedom (of the “leave me alone” kind) as opposed to the “positive” or collective freedom of ancient Greek thinkers such as Aristotle.
10 It is worth noting here that these are all Western, post-Renaissance thinkers. Other, non-Western views of politics may be more consensus-based.
11 PISA is the OECD’s Programme for International Student Assessment. It measures 15-year-olds’ ability to use their reading, mathematics and science knowledge and skills to meet real-life challenges.

12 Take, for instance, French President Emmanuel Macron’s spokesman declaring on November 9, 2021 ahead of a possible 5th viral wave: “We face a hurdle which height we do not know at this point in time...”


14 Building a Shared vision; Systems Thinking; Mental Models; Team Learning; Personal Mastery.

15 H2020 project “Making innovation a consistent, reliable and strategic resource for governments” – https://cordis.europa.eu/project/id/870913


17 Popular folklore is rich on this matter. Even in the academic world, it’s interesting to note the editorial success of “number one international bestseller” (according to the book’s cover) The Psychology of Stupidity, a book recently put together by French academics harping on this theme (and more provocatively titled Psychologie de la Connerie en Politique in French, see Marmion 2020). We also recommend Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed by James C. Scott (2020).

18 There is lots of data on the matter of trust, ranging from the Pew Worldwide Values survey, to the annual Edelman Trust Barometer. www.edelman.com/trust/2021-trust-barometer.


22 While many French citizens are willing to consider more authoritarian forms of government, 90% of citizens still believe that democracy is “important” or “very important” according to a survey conducted by the Fondation Jean Jaurès in March 2019, which also showed support for other ways to strengthen democracy: https://jean-jaures.org/sites/default/files/redac/commun/productions/2019/0320/observatoire_de_la_democratie_mars_2019.pdf.


24 Hélène Landemore defends five institutional principles as the foundations of an open democracy: participatory rights, deliberation, the majoritarian principle, democratic representation, and transparency.

25 The factors chosen resonate with other categorizations, for instance the six principles identified by the Laboratory of Aragón Open Government (LAAAB 2020), which authored the case about the Hexágono de la Innovación Pública: Open (open up public administrations); Trans (collaborate across disciplines, stakeholders, sectors); Fast (introduce agile dynamics and methodologies); Proto (foster an experimental culture focused on prototyping, piloting and MVP for rapid innovation); Co (all things “co”: community, collaboration, co-creation, co-design, collective intelligence – embedded at all levels of government); Tech (IT and digitalization as a transversal element enabling all of the above).

26 Technology can help bring about new forms of CI. The case studies presented in this handbook arguably only provide examples of positive uses of technology, as in the case of crowdsourcing initiatives in the face of Covid-19. We are clear however that the additional brain power provided by machines can also expand the capacity of malevolent political regimes.

27 For those seeking more inspiration, there are countless new technologies, methods, and knowledge repositories being developed. To explore those further, we recommend the Civic Tech Field Guide (https://civictech.guide/author/mlsi/), Participedia (https://participedia.net), the Observatory of Public Sector Innovation (https://oecd-opsi.org), Latinno (www.latinno.net/en/), and NESTA’s Trello board of collective intelligence tools (https://trello.com/b/vf3cXUVG/collective-intelligence-tools).
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Stephen Boucher


Harris Interactive survey for LCI, Apr.29, 2021


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