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## **SHIFTING TO INTELLIGENT SOCIETIES**

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In a world in which common goods are severely limited for those who lack recourse to institutional decision-making bodies, a world in which radical changes of scale have taken place and in which we are confronted by problems of governance, political disaffection and insufficient consensus, the demand on us is to examine our tools for shaping the political will, giving special attention to the ways that we socially construct collective intelligence. How societies succeed or fail at harnessing distributed intelligence will determine our collective destiny.

Decision-making is typically organised on the assumption that governments possess the best knowledge of any situation. However, in reality, knowledge is highly dispersed throughout society and governments have no alternative but to avail themselves of this dispersed knowledge. This is particularly true at a time when the collective generation of knowledge has grown exponentially with new technologies. At the same time, it is also clear that collective rationality cannot be constructed simply by aggregating individual utilities: the market cannot operate without an

institutional framework that includes other kinds of logic, and the sound organisation of society requires ways to allow for the political articulation of interests. The question of how to shape intelligent democracies through networked intelligence or “smart governance” is a crucial issue. One formulation is the notion of “wiki government” (Noveck 2009). Whatever the case may be, however, the institutions of government need to be redesigned in an age of networks.

Effective governance in the twenty-first century requires organised collaboration. Hierarchies need to be transformed into collaborative knowledge ecosystems. Radical change is needed in the culture of government, moving away from centralised expertise toward a collective grappling with social problems.

The appeal to the intelligent self-organisation of society – for example, in the neoliberal model of self-regulating markets – and the disdain for public opinion voiced by an elite cadre of experts reflect a highly simplified view of the way in which societies generate collective knowledge. Such simplifications typically fail to take into account that it is the same society that gives rise to collective knowledge and yet, when badly organised, is liable to slide down a slippery slope into errors that ramify as they spread through society. This ambiguity or indeterminacy is especially typical of global knowledge societies, and it leads neither to the wisdom of crowds nor to the madness of mobs, but rather to opportunities that can transform common action into collective intelligence.

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## COLLECTIVE INTELLIGENCE

Whatever name we use to characterise our contemporary societies – post-industrial society, information society or knowledge society – all of these concepts point to a profound change that has taken place in recent decades in the developed nations of the world. These concepts refer to the powerful growth of information and knowledge resources in relation to material and energy resources. Knowledge generation and transfer are now of great significance. They play a fundamental role in social, economic and territorial development. We could sum up the nature of the period in which we live in this way: the great challenge of humanity no longer lies in the mastery of nature but in our joint progress in information and organisation. The chief enemy facing us is not so much poverty or fear as ignorance. Our major challenges concern knowledge in

the broadest sense and the most critical strategies focus on policies that address knowledge, science, technology, innovation, research and training. The real wealth of nations lies in what people know. What does this mean for politics? What challenges does it pose for governance?

The future of democracy depends on its ability to rise to the challenges of a knowledge society. The knowledge society requires the political system to raise the level of its knowledge and decisions so that governance also becomes knowledge work. This implies a radical shift in our routines, because the prevailing approach to decision-making remains

prescriptive and it needs to be complemented by a cognitive style. Social organisation must increasingly place an emphasis on knowledge tools and abilities, such as analytical reasoning, critical thinking, imagination, a view of diversity as a resource, independent judgment, collective deliberation and the ability to cope with uncertainty and complexity.

Charles Lindblom spoke of the “intelligence of democracy” (1965) to refer to a centuries-old triumph that has crystallised in structures, procedures and rules. Democracy has gradually taken shape as a system of representation, procedures for decision-making and the provision of public goods. The intelligence of democracy has replaced hierarchy and authoritarianism with an inclusive structure to take decisions on collective issues; it has pushed aside procedures of divine or hereditary authority in favour of representative voting systems and regular changes of government, and it has transformed eternal rules into systems of rules that are open to review and alteration.

If a knowledge society calls for a special cognitive effort, the reason for this is because there is an element of ungovernability in an active society with distributed intelligence. Professionals and specialists operate under their own standards, with professional ethics that cannot be imposed or controlled from outside. Nonetheless, there is still room for politics in the management of negative externalities, the demand for accountability, the ability to anticipate the need for change before it becomes desperately obvious, the provision of

framework conditions for the development of each and every one of the autonomous systems present in a society, and so forth. At any rate, politics needs to abandon its prescriptive obsession with “telling people what they have to do”, while at the same time not shirking its responsibility to create the opportunities required by an emerging knowledge society. A complex knowledge society needs to be able to carve out a set of spaces for distributed and decentralised collective intelligence, and the job of politics is to coordinate and moderate the interaction between these autonomous units.

Collective intelligence is the only possible way to counter the risks inherent in complex systems, such as in the case of financial risks. Individual people and actors appear to be blind to the properties of a linked, interdependent system. In modern societies, social actors and systems must be able to function as complex, interacting wholes, not as a mere aggregation of elements.

However, it would be wise to have an adequate understanding of what we mean when we pose a concept like collective intelligence (Salomon 2003; Rheingold 2004; Sunstein 2006; William 2007; Willke 2007). First, it is necessary to distinguish individual knowledge from collective knowledge, because a specific aspect of organisations or societies is that they generate specific knowledge that is additional to the knowledge of their members and even greater than the sum of those members’ knowledge. There is a difference between learning in societies and societies that learn, just as there is a difference between actors who cooperate and

institutions that learn. While individual expertise is a private matter, the framework for achieving collective intelligence is a genuinely public task.

It is often said that knowledge in an organisation is simply the result of adding together the knowledge of its members. Of course, the competence of organisations depends on the knowledge of their members. However, just as a jumbled assortment of geniuses and Nobel laureates does not make for an intelligent organisation, neither does a rise in the number of university graduates automatically produce an intelligent society. It makes little sense to pay too much attention to individual qualities, rely too heavily on people's virtues or be content with our indignation at the defects of individuals or institutions when what we should be doing is paying attention to how these factors are interconnected.

In the case of matters involving group dynamics, there is always a question of whether the whole is greater than the sum of the parts, of whether there is a supra-individual aspect – i.e., the system, the organised whole, an emergent phenomenon – “that cannot be reduced to the intentions of the participating individuals” (Heintz 2004, 3). The term *emergence* is used precisely when there are general properties that cannot be reduced to the characteristics of their elements. A knowledge society is not a society with many experts, but a society in which the systems are expert. It is not enough for individuals to learn and innovate; there is little value in citizens acquiring new competences while the rules, routines and procedures – in other words, public, organisational intelligence – stand in

the way of harnessing these new competences. Change happens only when collective structures, processes and rules change as well. The knowledge of a society amounts to more than the mere accumulation of existing knowledge, just as an organisation is intelligent by virtue of the synergies produced by its systems of rules, institutions and procedures, and not by the mere addition of the intelligence of its members. Knowledge generation arises out of communicative acts or, to put it another way, knowledge is a relational good.

## **POLITICAL MIRACLES**

It was Hannah Arendt who said that in politics we have a right to expect miracles. Not because we are superstitious, but because human beings are, when acting freely and in concert with one another, “able to perform what is infinitely improbable” (1993, 35). I have always interpreted these words of the Jewish philosopher as a definition of democracy and, more specifically, of the collective intelligence that makes democratic life possible. Today’s landscape, however, is bleak and public opinion is rife with discourses that run counter to Arendt’s view: routine, predictability, disaffection and more. Any of us who still believe in politics as a transformative force in society may be viewed as deluded or credulous, just as we may once have believed things in the past that we can no longer support today.

But why must we give up this hope? The entire organisational complexity of democracy is a triumph

of humanity in the pursuit of something like collective wisdom. Let me put it more provocatively: a handful of fools have produced something wise. But we can also posit a more refined formulation: a group of average people, who did not start out in agreement ideologically and who had diverse interests, have been able to generate – and not despite their diversity but because of it – a society that is more intelligent than each person taken individually. This is what we could call the miracle of politics – a politics that is more intelligent than the people who are engaged in it.

The enemies of democracy have always been sceptical of this miracle. Their preference is to point to the stupidity and madness of the mob. The problem is that they have spread belief in another miracle that is even more difficult to swallow: that right is on the side of the few, the elites, the experts, those who have somehow been declared the best. If in spite of everything democracy exists, however, it is because we do not know how to determine who the best are and because, above all, even if we could identify them, nothing guarantees that their decisions, too, would be the best.

For a number of years, neoliberal ideology has circulated a self-serving notion that is even harder to believe: that human beings are intelligent as consumers and stupid as voters. This thinking rests on Schumpeter's observation that the individual will is on firmer footing in the case of an individual's consumer decisions (given that the individual has direct experience of his choices), while the experience and will of the electorate are imprecise

(Schumpeter 1942, 256). Neoliberal economists have applied this principle of the wisdom of crowds to the marketplace, but the principle of the madness of the mob to politics (Surowiecki 2004). The conclusion that follows is disturbing: "If people are rational as consumers and irrational as voters, it is a good idea to rely more on markets and less on politics (Caplan 2007, 114).

Although the idea of perfect information in the markets has long been disproved, some persist in the belief – which now takes on the character of an outright superstition – that an actor in the market possesses perfect information. By contrast, they claim that the voter lacks the necessary information and therefore political decisions must be reduced to a minimum and transferred to the marketplace. This contrast between the supposed knowledge of the consumer and ignorance of the voter lacks any empirical evidence. How can people have fewer erroneous beliefs when they pursue individual ends than when they work toward collective ends? After a careful examination of both assumptions, it is clear that neither is true: there is structural ignorance both in the marketplace and in politics and this ignorance must be borne in mind and compensated for with frameworks of governance that prevent incorrigible mistakes or enhance our collective ability to exercise foresight, take balanced decisions, work out corrective procedures, and so forth. In politics there is representation and participation, and in the markets there are prices and rules. This is precisely to avoid or correct some of the mistakes that tend to arise from the adoption of a unilateral viewpoint, such as acting without

heed to the long term, putting too much reliance on immediate decisions or eliminating checks and balances.

Not only is democracy the least bad of all systems as Churchill put it, it is also the least stupid. The traditional rationales for democracy have stressed arguments of values, making appeals to equality, justice or freedom. They have not resorted to instrumental arguments. While all of this is true, however, a defence of democracy can also draw on instrumental criteria, that is, that democracy is epistemically superior to other systems and makes for better decisions (Coleman 1989; Elster/Landemore 2010, 9ss). As Josiah Ober maintains, the primacy of Athens over its rivals lies in the character of its institutions, particularly the deliberative body of the council of 500 (Ober 2009). This superiority is specifically due to the council's harnessing of the collective intelligence.

Our democracies need leadership and our complex societies require governance that must be able to articulate these various levels of government, with their social subsystems and differing forms of logic, all in the midst of vigorous civil societies with dispersed knowledge, if we are to have the best possible combination emerge. To illustrate the interrelationship of these elements, consider the metaphor proposed by the anthropologist Edwin Hutchins (1995): the calculation involved in steering a naval vessel is not carried out in the head of any one person but in the coordination of many different people with navigational instruments, charts, communications networks and organisational

functions. Not even in this area, where giving orders carries greater weight than giving reasons, is the exercise of authoritarian leadership enough. There is more power in shared power, and also more intelligence of the sort needed for the self-organisation of democratic societies.

“Democratic reason” is the epistemic superiority of the rule of the many over the rule of the few. The reasons against aristocracy, oligarchy or a regime of experts are also cognitive in nature. Even if it were possible to identify the most intelligent people and guarantee their

virtue, many individuals with average intelligence and varied ways of thinking have greater epistemic competence than a few individuals, however great their intelligence may be.

This is not to say that the many are infallible. The social production of knowledge also has its dark side and there is no shortage of examples of collective stupidity. Indeed, we should not overvalue the possibilities of aggregation. There are subjects about which the average citizen is not only ignorant, but also makes systematic mistakes. Often, however, this also applies to the experts whose judgment nevertheless does need to be included in decision-making processes, but balanced against other democratic criteria. The “intelligence of democracy” can be seen precisely in rightly articulating knowledge, decision-making and legitimacy.

Collective wisdom is not produced automatically, as though it was a guaranteed outcome whenever a

number of individuals come together to take decisions. There is a need for the framework of rules and procedures that we designate loosely as democratic governance. It is also fundamental to fulfil what we may call “the condition of diversity”. If we can be more intelligent collectively than each of us on our own account or than the select few, it is because we can, in our immense diversity, bring to bear a wide range of viewpoints, interpretations, predictive models, social media, professions, ideologies, interests and life experiences.

The theorem of Scott Page (2006) on the primacy of diversity over expertise says the following: a cognitively diverse group of people is more valuable than a group of highly intelligent people who think alike. Cognitive diversity (the ability to see reality from different points of view) is fundamental for the emergence of collective intelligence. As with any emergent phenomenon, nothing wholly ensures that diversity translates into intelligence, but we can be certain that environments with little diversity (whether as a result of explicit exclusion or sectarianism or because of a shortfall in representation or participation) do not give rise to the collective intelligence that lies at the heart of the best public decisions.

A “moral” approach to human relationships typically emphasises intimacy and trust, as though social capital involved a store of emotion. This over-emphasis tends to make us lose sight of the epistemic advantages of distance and diversity, which have their own logic. In social systems, weak bonds are more effective for cognitive purposes

than strong bonds. The more intimate a relationship is, the less information it provides. Friendship is a strong bond, but generally our acquaintances give us more information than our friends do. The reason for this is easy to grasp: people with whom I have weak bonds move in circles to which I have no access. Conversely, intimacy provides a maximum of emotion, but a minimum of information.

This potentiality of pluralism offers a stark contrast to the fanaticism and blindness of overly homogeneous groups. Rational thought requires cognitive dissonance at the personal level and for societies as a whole. When we look for reality to prove us right, when we seek out somebody too much like ourselves to confirm that we are correct (an almost unconscious mechanism that is quite common among human beings), then we sharply narrow our epistemic field, which is usually the prelude to poor decision-making. For collective reason to work, therefore, we need conditions in the political culture that we could call "liberal" in a broad sense, that is, the free circulation of ideas, respect and open confrontation, and a willingness to engage in argument. In short, the need is for a culture that safeguards cognitive differences and does not see them as a drawback or a mere stepping stone on a path toward unanimity.

## **THE SOCIAL CONSTRUCTION OF INEPTITUDE**

We cannot account for the nature of the knowledge society without also coming to grips with why it can produce enormous collective failures that may

outstrip even the failures committed by societies where knowledge has not held such a central place. A number of explanations for this singular paradox have been proposed (Tuchman 1984; Tainter 1988; Garzón Valdés 2004; Diamond 2006) in the context of questions such as: Why do societies collapse? What reasons can explain how, given that a society may be more intelligent than its members, we may also be more inept, more incompetent, than we are when considered individually?

To account for our peculiar vulnerability to collective errors and poor decisions, the explanation lies not in any lack of adequate tools, but rather in how misled we can become by the sophistication of our capabilities. Let us take, for instance, economic swings between euphoria and disappointment. These swings would not have reached the critical dimensions of today, if it were not for the financial power of our economic systems; the spread of rumours increases with the density of our communications and gives rise to phenomena on the internet like "trolling" and "flaming". What has been called "the tragedy of the commons" (Hardin 1968) astutely encapsulates this fatal mix of interdependence, contagion and organisational inability that can lead to an aggregation of decisions with catastrophic effects.

One explanation for "wiki errors" is the fact that we are handling second-hand information and must put our reliance in others. This is true of any society, but even more so of a complex society. Our world itself is second-hand, mediated, and it could not be otherwise: we would know very little if our

knowledge consisted solely of what we personally know. We make use of a great deal of epistemological prostheses. We enhance our brainpower on the basis of trust and delegation. Second-hand experiences affect human life with at least as much force, if not more, than first-hand experiences. Nearly everything we know of the world we know by means of specific mediations. We have no choice but to rely on others and the information they give us. Some who consider themselves well informed actually have first-hand experience of very few things. This state of affairs has resulted in the greatest triumphs of humanity, but has also produced our gravest mistakes (Sunstein 2006). Too much or too little trust can be shown, rumours can spread wildly without sources of objectivity to halt them, panic can become even more contagious in a world based on assessments that hard to refute.

There are sound reasons to think in many cases that, when an opinion is widely shared, we should probably take it as true. However, the opposite experience is also fascinating: from the most harmless types of commonplaces to the infamy of lynch law, our collective mistakes can reverberate. Many live in information bubbles, which have dynamics that can sometimes lead to echoes that spread, link into a chain reaction and grow even stronger, resulting in enormous collective failures. And let us not think that such a spread of errors is limited only to those who know least about the matter in question. There are also errors typical of the aggregation of experts' knowledge and decisions, the failings of specialists, which are

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usually even more maddening insofar as we feel entitled to expect these individuals to have special foresight.

## **THE DRAWBACKS OF “BEING TOO RIGHT”**

A root cause of many collective errors is something that we could call the drawback of “being too right”. This refers to the fact that some errors stem from the fragmentation that prevents us from stepping outside the circle of people who think like us. In this way, we lose the advantages of heterogeneity. The possibilities afforded by the information explosion are one example of this paradoxical state of affairs.

Some have welcomed the potential of “Daily Me”, a personally customised information product (Negroponte 1995, 153). The “customisation” of information highlights how informational options and the ability to make personal choices increase with advances in technology. However, customisation can also lead to impoverishment because it reinforces individuals’ prejudices and deprives them of exposure to opposing viewpoints and undetected problems. In this way, new communication technologies can also lead to misunderstandings and rifts when citizens join groups in which members think alike and jealously guard against cognitive dissonance. Sunstein studied this phenomenon and found that the members of a deliberative group frequently gravitate toward extreme positions (2002). It is not uncommon for one cause of fanaticism and radicalism to be found in ideologically closed groups linked by technology. When people who think alike

exchange information and opinions and are not exposed to differing viewpoints, it is easy for them to become radicalised. The internet has encouraged the gathering of like-minded individuals, the formation of stovepipes, including sectarian ones, and the creation of spaces where monolithic views prevail. If the new technologies can broaden the horizon of information, they can also enable us not to see what we do not wish to see, allowing us to build an echo chamber that prevents us from examining our own biases.

Recently, commentators on the role of the internet in politics have coined the terms “cocoon” and “echo chambers” to denote people’s propensity to form networks of the like-minded (Huckfeldt/Sprague 1995; Rogers/Kincaid 1981). This propensity increases in networks in which the defining rationale is “like”: you “click” on the people that you “like”, i.e. the people who are like you. Differences are filtered out. The same logic appears even in commercial contexts: if I buy a book from Amazon, I receive a message saying, “If you bought book X, you may also like book Z”. Indeed, democracy would be better served if (as Benjamin Barber recently observed) we were instead told, “If you liked book X, you should get to know the alternative viewpoints found in book Z”.

The world of the internet can have the effect of reducing our cognitive dissonance. Customisation of internet search engines has transformed our experience of the world to the point that we are thrown back into a Ptolemaic universe in which the sun and everything else revolves around us. Such

customisation hails the end not only of serendipity – the kind of search that blends method and chance and can bring us to unexpected discoveries – but also of bridging capital. As Eli Pariser puts it, “In the early days of the World Wide Web, the online terrain felt like an unmapped continent, and its users considered themselves discoverers and explorers” (Pariser 2011, 1415-20), while “Google is great at helping us find what we know we want, but not at finding what we don’t know we want” (1226-32).

## **THE INVISIBILITY OF THE COMMONS**

Another source of collective ineptitude lies in what we could call “the invisibility of the commons”. For interactions to result in virtuous circles, it should be possible for actors to receive some return on the impact of their personal action on the group. Making visible any membership in a group aimed in the same direction increases the utility of decisions taken by the group’s representatives and improves implementation by the group’s members. However, this mutual sense of belonging is barely noticed when individual actions are uncoupled from the context and the group. Many collective mistakes stem from an initial difficulty in taking a comprehensive view of the consequences of an action.

How can this relationship be made visible? Let us look at an example in the area of taxes. A study in Minnesota, in the United States, examined four possibilities for combating false tax returns. One group of taxpayers received a letter explaining how the money raised would be used. A second group

was reminded of the punishment for anyone filing a false return. A third group received a document with information on how to get help to fill in their tax forms. And a fourth group was informed that 90% of taxpayers fulfilled their filing obligations. The campaign showed that only the fourth option was effective at reducing fraud. Looking at personal action from a collective perspective had the effect of making the action of fraud socially illicit; it marginalised fraud (Thaler/ Sunstein 2008). In a city in California, the electricity bills for a group of neighbours were appended together so that each neighbour could place himself in relation to the group. Those whose consumption was greater than the average sharply reduced their consumption. The first step to restraining individual behaviours that have a negative impact on the commons is to show this impact. Making the connection visible may not be a guarantee of responsible behaviour, but its invisibility is definitely a source of irresponsibility.

There are many proposals to reverse the current invisibility of personal taxes and bring them more in line with the logic of the gift, whose operation was studied in primitive tribes by Marcel Mauss. The increase in the computer processing of taxes and financial flows permits a level of traceability that was unthinkable in the past. If we customise the solidarity represented by taxation and indicate as precisely as possible what percentage of our tax bill goes to which public buildings or to which social actions, it may serve to increase the personal utility of this collective action. The ability to see the impact of solidarity with as much detail as possible

encourages its acceptance and fosters responsibility for public actions and infrastructure. Other measures such as leaving a margin for personal action could increase the personal meaning of taxes, raising everyone's responsibility and individual satisfaction. Success would lie in making others less unknown to us and in ensuring that the flows of collective life are not wholly mediated by a cold black collection box set up by the state.

## **THE FAILURES OF AGGREGATION**

Many poor decisions at the root of collective failures can be attributed to a poor aggregation of decisions, which were simply the addition of individual preferences in the short term. Let us consider, for instance, the self-destructive character of the impulse for protectionism (which was the actual cause of the economic crash of 1929) or the problem of financial bubbles in 2008 (the difficulty of halting a process in which everyone is better off right now and the disaster lies in the long run). Markets, for example, are systems to aggregate knowledge and preferences and everyone knows at this stage how beneficial this procedure usually is for the coordination of our actions. However, we are also aware of its limitations, its catastrophic ramifications and now, above all, the fiasco that usually results from thinking that we are so intelligent that any regulatory intervention is superfluous. When financial euphoria predominates, any hypothetical crisis seems far off and therefore fails to trigger reactions that prudence would otherwise counsel.

Thinking and acting in real time hampers our ability to take coherent decisions. When the time horizon is narrow, we run the risk of yielding to the “tyranny of small decisions” (Kahn). By simply going from decision to decision, we can eventually arrive at a situation that we did not want at the outset.

Anybody who has ever examined how a traffic jam develops, for example, will recognise the problem. Each consumer, through private consumption, can contribute to destroying the environment, while each voter can contribute to destroying the public space – a result that voters do not want and that can, in addition, make it impossible for them to satisfy their needs. If they could have anticipated the outcome and reversed or at least moderated their immediate private interest, they would have acted differently.

There is no collective intelligence if societies fail to govern their future rationally. The future is constructed and its construction requires forward thinking and a certain degree of coherence. When decisions are taken with a short-term view, without taking negative externalities and long-term implications into account, when decision-making cycles are too short, the rationality of agents must necessarily be short-sighted. When the time horizon is narrow and only the most immediate interest is borne in mind, it is very hard to prevent matters from taking a catastrophic turn.

Today, society has many sources of inertia that not only work against the maximisation of the common good in the long run, but also work systematically to

divert us from this objective. Overhauling the concept of responsibility could contribute to removing fatalism from the process of modernisation, so that it is perceived not as a realm of uncontrollable powers, but as a civilising process undertaken by human beings, in which we are confronted by processes that lie beyond our control but that can be partly regulated. In an era of second-hand consequences, we are not condemned merely to choose between total responsibility and total irresponsibility. Rather, the task before us is to determine for ourselves, drawing on procedures of democratic legitimacy, how we wish politically to construct our responsibility.

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