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Towards the use of technology in an open, complex and popular democracy

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Summary. The essay delves into the transformative impact of rapid technological and economic changes, wealth concentration, climate emergency, and the escalating complexity of global issues on contemporary societies. Specifically, it explores the sway of technocracy and neoliberalism on public administration, honing in on the New Public Management paradigm prevalent in the final quarter of the 20th century. The consequence has been a diminishing governmental capacity and an inadequacy in addressing societal challenges, notably the issue of inequality. The narrative reflects on the intricacies and constraints of representative democracy, advocating for an interdisciplinary and technological approach to confront public problems effectively. Furthermore, the essay underscores the potential conviviality of technology as a pivotal means of addressing these challenges and emphasizes its role in fostering democratic participation, especially at the local government level. Illustrative examples, such as the Decidim system in Barcelona and other international cases, serve to highlight the positive impact of incorporating technology. In essence, the essay puts forth an argument for the imperative of inclusive, open, and popular governance models that leverage technology for the collective good and the enhancement of societal realities.

Keywords. Popular participation, technology, democracy, complexity, local governments.

Resumen. El ensayo aborda el impacto transformador de los rápidos cambios tecnológicos y económicos, la concentración de riqueza, la emergencia climática y la creciente complejidad de los problemas globales en las sociedades contemporáneas. Específicamente, explora la influencia de la tecnocracia y el neoliberalismo en la administración pública, centrándose en el paradigma de la Nueva Gestión Pública predominante en el último cuarto del siglo XX. La consecuencia ha sido una disminución de la capacidad gubernamental y una incapacidad para abordar desafíos sociales, especialmente la desigualdad. La narrativa reflexiona sobre las complejidades y limitaciones de la democracia representativa, abogando por un enfoque interdisciplinario y tecnológico para enfrentar eficazmente los problemas públicos. Además, el ensayo destaca el potencial de convivencia de la tecnología como un medio fundamental para abordar estos desafíos y enfatiza su papel en fomentar la participación democrática, especialmente a nivel gubernamental local. Ejemplos ilustrativos, como el sistema Decidim en Barcelona y otros casos internacionales, sirven para resaltar el impacto positivo de incorporar la tecnología. En esencia, el ensayo presenta un argumento sobre la necesidad de modelos de gobierno inclusivos, abiertos y populares que aprovechen la tecnología en beneficio colectivo y para mejorar las realidades sociales.

Palabras clave. Participación popular, tecnología, democracia, complejidad, gobiernos locales.

1. Introduction

"The technique at the service of a better homeland" Jesús Robles

A reality as changing as it is complex requires rethinking our democracies to solve the diverse crisis we live in. Within a process of increasing technification, incorporating digital tools present an alternative which makes possible a better resolution of social issues. Nevertheless, the hegemonic paradigms in public administration and the concepts mostly used in the public opinion seems not to adequately incorporate these tools for the generation of welfare and popular empowerment. The suggested alternative is reducing the cost of participation in the institutional political system through means which simplifies, traduce and bring the politics closer to every person, contributing to distinct spheres for the understanding of complexity, making possible the solution of social conflicts.

Adapting to the reality of Jalisco, Mexico, according to data from the ENDUTIH, in 2020 there were 5 '820,823 internet users, who represented 75.6% of the state's population aged over 6 years old, of which 9 out 10 utilize it everyday. In turn, the population who uses the internet the most, with 19.5% of the users, was between 25 and 34 years old. This data serves as a foundation for advocating the use of technology in the creation of political pedagogy tools. There exists a propitious ground for the use of technologies as infrastructures that complements the popular participation, given that the technological gap isn't wide, just as its use is a fertile sector for the creation of tools of political pedagogy. Not forgetting that these tools do not replace territorial work, mainly for the participation of sectors with no or limited access to these technologies, as well as the dynamics of face-to-face activities to approach the understanding of complexity and facilitating the resolution of social conflicts.

Along this essay there's a reflexion over complexity and the boundaries of representative democracies on the contemporary societies, in the frame of climate emergency, the hyperconcentration of wealth and the interrelation of diverse global issues, emphasized by the neoliberalism and the New Public Management over the last decades. The argument goes for the necessity of an interdisciplinary and technological approach on the solving of social problems through mechanisms of participatory and popular democracy within local governments. In essence, this holistic perspective seeks to align democratic principles with the fluid and multifaceted nature of our present reality.

2. The arrival of technocracy and neoliberalization

The world isn't what once's was: the societies grow faster, the consumption of products and commodities are limitless, the desires and interests of the persons have been multiplying, the hyperconcentration of wealth has been increasing, some multinational corporations own more power than many of the government of the G20, a climate emergency just around the corner, the financialization of housing, the growing influence of high tech and big data and the complexity of cross-borders problems that difficult the multilateral cooperation. Facing a volatile and vertiginous world, democracies seem lethargic regarding the necessities of contemporary societies.

Aguilar Villanueva (2010) identifies the origin of the present paradigm of government management at the edge of the Welfare State model and the appearance of multiple social actors who demand an expansion of participation on public decisions, just as the corporate sector, during a process of expanding global innovation, privatization and transnacionalitation, the so called process of neoliberalization and the arrival of the New Public Management at the principles of many of the governments around the world. In this global period many opaque and inefficient public programs were canceled, there were a large number of privatizations, models of design and evaluation cost-efficiency were introduced in the public policy methods and many autonomous public organizations were found. In the Western societies it seemed there were no alternatives after the fall of the Berlin wall. In Mexico, following the Miguel de la Madrid government, sectors ideologically related took control of the Partido Revolucionario Institucional (PRI), therefore, the government and model of the country: it was a moment of management and growth on purpose of placing the Republic as an emerging, modern and global power.

However, this process, such as in Mexico as the rest of the communities it was implemented, turned into the loss of the government's directive capacity due to the decrease on their faculties and finance, letting them as complemental actors faced with the internations firms, becoming on the public impossibility of solving social problems just as inequality, social rights, medicare, education, mobility and infrastructure.

Despite the overall weakening of the government capabilities, efforts have been made to strengthen the organizations and methods related to the electoral sphere of democracy. Despite several advancements, these measures have not entirely resolved the technical issues surrounding elections. Furthermore, the presidential elections in Mexico in both 1988 and 2006 were overshadowed by methodological issues that cast doubt on the transparency and legitimacy of the processes. In 1988, the contest between Carlos Salinas de Gortari and Cuauhtémoc Cárdenas was affected by questioning of the vote count, sparking controversies and raising doubts about the authenticity of the results with the "caída del sistema" (system crash). The lack of clarity in the process underscored the need for improvements in electoral supervision. In 2006, the competition between Felipe Calderón and Andrés Manuel López Obrador faced methodological challenges, ranging from establishing equitable conditions to monitoring irregularities. Lack of fairness and a perception of opacity led to tensions on the validity of the results. These issues emphasized the urgency of addressing deficiencies in the design and execution of technologies to strengthen public trust and preserve the integrity of the democratic system.

Years later, crisis like the one on 2008, added to multitudinous protests unleashed around the world, just as Occupy Wall Street in the United States or los Indignados in Spain and particularly in Mexico with the #YoSoy132 movement, predicted the necessity of more open models of democracy, not only focused on technologies within the electoral process, but also adding to all spheres of public decision, incorporating the dessiers of the few but guaranteeing them not overcome the complex will of the many. Those movements seeked to democracies where the responses to the complexity don't result in technocracies which make legislation and policies away from the peoples problems, where the institutions don't mean distance and opacity.

3. A complex reality: the boundaries of representatives democracies

Contemporary societies with a vast diversity of ideas and interest require thinking about an approach which permits facing a diversified and fluctuating reality with the implementation of participation models for expression, deliberation and decision making about that host of ideas and intereses, models which propose different forms of construction of individual and collective knowledge.



At the first conference of his course "The truth and the judicial forms" (1984) Michel Foucault presented his theory of knowledge, which defines from the "domains of knowledge". He postulates that the subject is constructed based on knowledge, just as on control and surveillance. Hence, for him, knowledge isn't only imposed, it is created. As being generated, the subject of knowledge emerged from the emergency of subjectivity, meaning it came out "of games of action and reaction, of question and answer, of domination and also of struggle" that respond to a specific historical context (Foucault, 1984). In this way, there are distinct subjects who grasp in different ways, not a subject predetermined by immobile superstructures. Foucault argues that to understand the knowledge of the subjects is fundamental studying the history of its creation with a political approach in the search of deciphering power relations between persons and groups of a determined community.

Furthermore, for the french sociologist, politics and economics are not an obstacle for knowledge rather are "through which the subjects of knowledge are formed and consequently, the relations of truth" (Foucault, 1984).For his part, Antonio Gramsci express that determine forms of knowledge come through power to possess the "hegemony" of the "common sense" (Errejón, 2011) for sustaining a project of society, a "historic bloc" (Gramsci, 2009). For these authors, also on science and technology are truth models, "paradigms" in Thomas Kuhn terminology, product as at the same time constituents of political structures. Therefore, knowledge, on a complex reality, is constructed and disputed.

Then, it seems that the understanding of public problems gets more complicated for their resolution. Nevertheless, if we follow the definition suggested by the philosopher and sociologist Edgar Morin (1990) the adjective "complex" doesn't mean "complicated", rather means an interdependent system in which distinct logics subsist and connect (Barberousse, 2008). In this sense he postulates that "simplified" thought, in which a single discipline or a specific way of approaching the reality owns an absolute priority over the others, is what truly makes world analysis more difficult, because of its insufficiency for approaching all the interconnections behind the problems. For example, the neoliberal assumption of the supremacy of the market and the overutilization of economical variables on policy making and evaluation. Thus, it's necessary to act on the basis that knowledge is open, unfinished and in continued reconstruction, which leads to the conclusion that the decision making, product of that complex knowledge, also has to be interconnected, open and in perpetual reconstruction, a process in which technology and science play a central role. Complexity paradigm establishes real interrelations and intercommunications among disciplines, specialists, methodologies, realities and specific languages.

The austrian physicist and philosopher, Paul Feyerabend (2004), expressed "a free society is a society in which all traditions have equal rights and equal access to the centers of power [...] is not only fair, but the most convenient". In consequence, comprehending reality as a complex system, implicates the necessity of multidisciplinarity and interdisciplinarity for the acquisition of knowledge, therefore its relevance for the decision making process, being a central value on societies democratization. The dispute and the construction of the public need to be released on articulated spaces, that permits their complementation and management of their dissents.

4. On the use of technology in an open, popular and participatory democracy

A technology is a tool, a dispositive designed to achieve a purpose, a means to fulfill a goal. Anthropologist Roger Bartra (2014) postulates that the human being is a "social-technified" being, that is a species, on the basis of social contract, capable of creating technology and recreating itself with the use of that technology. The use of tools for the solution of our necessities is something natural: from instruments for fire generation, the register and articulation of a specific language, to the creation of the wheel, the banking models, the pencil, the hydroelectric plants and the quantum computers. All designed for solving specific problems and in which process of implementation have changed the way people relate to each other and to the environment. In this sense, thinking about technology beyond its contemporary reality, focused on its digital possibilities, allows us to understand it critically, as well as to understand it as a substantial factor of the social being of our communities.

The austrian theologist, biologist and philosopher Ivan Illich pointed out that there is a process that represents a danger in the utilization of tools, that of "counterproductivity", "the fact that a tool, when it exceeds a certain intensity, inevitably leads more people away from the purpose for which it was created than allows them to take advantage of its benefits" (Beck, 2016), that is, it goes from being a means to becoming the goal of the activity. As a case in point of everyday life is the use of video games, which supposedly are used for entertaining and enjoyment of leisure time, to share quality time with loved ones or even professionally as a way of working to obtain the economic resources that allow a better life. The process of counterproductivity occurs, for example, when the use of video games interpose with the time of fundamental activities, also when video games disconnect relationships and, in the labour case, when it produces an overexploitation of working days.

Comprehending technology as a substantial part of human beings and their societies allow us to realize the repercussions of counterproductivity on major scales. The neoliberalization process impulsed the counterproductivity phenomena on technology, where the idea of community and the importance of it in the evolution of societies got debilitated, passing to a paradigm, a common sense, a subjectivity where technologies are product of exceptional minds in moments of brilliance to satisfied individual demands from whom can afford that specific product in a free market economy. If

technologies have a role in government during neoliberalism, it's under the parameters of market models: cost-efficiency decisions negotiations between technocracies and economic structures.

Additionally, in the face of this scenario, documentaries like "The Great Hack" (2019), produced and directed by Jehane Noujaim and Karim Amer, depict the case of Cambridge Analytica as an other facet of the use of technology in the political-electoral process in modern societies. This company, a provider of data-driven political communication strategies, played a crucial role in Donald Trump's presidential campaign and the Leave. EU campaign during the Brexit referendum. These examples show the practice of data exploitation of unauthorized collection of vast amounts of personal data from Facebook and other social media users. Cambridge Analytica exploited this data to create detailed voter profiles, enabling them to craft highly targeted and personalized political messages via microtargeting and psychological manipulation; exhibiting the importance of Technology Giants Corporations role in the data ecosystem, shaping public opinion, and influencing political landscapes. These are presented as paradigmatic examples of the discretionary use of Big Data and the role of technological transnational corporations in shaping public opinion as a product and not using it to empower popular participation to solve public problems.

To get out of the crisis of counterproductivity, Illich proposed another concept related to the use of technologies: the "conviviality" making the tool being at the service of the community, coming back as means. In civilizations like ours it's necessary a new goal: that the means to return to being just that, a means. High technological progress, contemporary crises and the complexity of society demand it or we will continue to be surpassed.

Humberto Beck (2020), raised the question: "could the Marx of the future be, perhaps, a programmer?". Beyond the disputes around the figure of the prussian philosopher, the important question is to ask ourselves if the next great criticisms and mobilizations against the status quo will be carried out by people who handle Big Data, Artificial Intelligence and the programming languages. The Marx of the future needs to know programming or to have the facility to relate with programming communities, but also, the future dictator could be a programmer. Technology, it's only a tool in front of a reality as complex as technified. The importance of the implementation of these technologies is urgent, just as is the politicization and democratization of high-qualified persons and processes for their contribution to the common good.

Starting from educational institutions: let's imagine that in engineering they also give courses on critical coding and datafication, digital mobilization, algorithms and gender; or that those who study social sciences have courses where the Internet as a political space, programming as a fundamental tools in the public policies cycles or digital rights as human rights are addressed. Let's imagine, even better, that we can strengthen this knowledge with those who do not have the option of studying in a formal institution, creating community Internet networks, generating communal workshops on taking care of our information on social networks or public programming courses. Pluralize knowledge and politicize tools for the improvement of daily life, as well as the deepening of our democracies.

Moreover, we must establish democratic institutions and organizations with control mechanisms to manage the vast volumes of data and the technological progress surrounding this phenomenon. Digital training for individuals in public office and the inclusion of technical experts in the field should be a necessary action to accompany this process. The significance of datafication and digitization should be cut across all levels of government. Noteworthy initiatives, such as the Digital Agency of Mexico City, could serve as models for creating similar bodies nationwide, along with open data portals that are gaining traction, particularly due to the COVID-19 pandemic. Furthermore, providing economic, human, and technical resources to electoral institutions is essential for expanding digital monitoring, moving beyond mere discussion to identifying bots, trolling, fake news, astroturfing, and enhancing scrutiny systems, as well as electoral counting.

Efforts should aim to extend these legislations and organizations globally, given that major technology corporations transcend national borders. Consequently, resolving this issue entails a paradigm shift in human rights and cooperation. Promoting educational and civic processes beyond governmental institutions is crucial to fostering a societal culture where the importance of the individual's relationship with society, technology and information is understood.

5. Mechanism for popular participation, a brief route from local realities

The predilect space to prone innovation and experimentation of tools for the resolution of social problems are the municipalities. The local government is the structure of public power more accessible to the people, because it's related to their immediate reality and facilitates the process of popular participation. In a democracy located in a complex reality, participatory mechanisms allow the different knowledge and interests to be shared, also they allow conflict management and the appropriation of solutions exercised, in part, by governments. This does not imply that the simple use of any participation mechanism generates a public benefit.

It is necessary to think about its specific purposes, its temporalities, its relations with the different stages of the processes of public policy and legislation cycles, carrying out a pedagogy about its importance and its use, encouraging broad and binding participatory budgets or advisory bodies. There is no democracy without constant deliberation, limiting



participation to one vote in a referendum or a recall is the same as limiting democracy to the election of popular representatives. In this sense, technology has an opportunity to facilitate all of these processes beyond the increase in voting mechanisms -such as electronic ballot boxes or e-voting- in a greater range of government decisions.

There are some cases that allow people to imagine new horizons, either for their successes or for their failures, around the world. Barcelona en Comú, the ruling political party in the Catalan capital from 2015 to 2023, made its Municipal Action Plan, the strategic document that set the guidelines for local government, collaborative. This participatory process "has lasted more than two months, has combined almost 400 face-to-face debates held in different parts of the city with online participation through the Decidim.barcelona website, where residents have contributed their ideas" (Llort, 2016). With the implementation of Decidim within the management ecosystem of the Barcelona City Council, a vision of the use of technology in participation mechanisms has been introduced, not as a substitute for territorial activities and work groups, but as facilitators and complements, since it has inputs for collaborative mapping, preparation of work groups, discussion forums, collaborative writing, voting mechanisms, activity registration and delivery of educational materials. Functions that require accompaniment, instruction and learning process, without replacing the dynamics of participation in the communities.

Decidim defines itself as "a public, free and open digital infrastructure for participatory democracy" (Decidim, s.f.). The term "digital infrastructure" refers to a set of tools, data sets, documents, codes and interfaces accessible by digital means (Decidim, s.f.). Decidim is a medium that enables participatory democracy, it does not replace it, nor does it make it better, much less solve the public problems of its community, but it provides a multipurpose, adaptable, transparent and accessible tool to empower people. There is a commitment to conviviality, not to the romanticization or alienation of the tool from its social context. After its success, cities such as Rosario, Helsinki, Zurich, New York, Milan, Kakogawa and Mexico City have joined the use of this digital infrastructure.

There are some other examples of local government initiatives. The Open University of Recoleta (OUR) (Universidad Abierta de Recoleta, UAR) which focuses on giving knowledge a practical use in everyday life to the inhabitants of the communities. The institution does not give formal grades, nonetheless it offers free courses, workshops and seminars in charge of academics of the best universities in Chile and social leaderships specialized in technical areas, proning the possibility of democratizing knowledge in diverse areas from quantum physics, passing through philosophy and economy, to practical local gastronomy (Ramírez, 2018). The OUR gives courses at municipal educational centers in vespertine and matutine hours all days of the week, also in a modality at a digital platform. After their year it had more than 11 thousand students all over the country.

La Comunificadora is a public bidding and procurement system of Barcelona's Ajuntament that prioritizes cooperatives and social economy companies, reprioritizing contractual relationships of the government, moving from relationships with Microsoft and Cisco to software and open source companies (Arboleda, 2021). An additional case is Gewobag, the public real estate company of Berlin State, remunicipalized six thousand houses and invested 920 millions euros to establish caps on rental prices based on public referendums and collaborative spaces to fight housing speculation. Furthermore, Gewobag generates more than 10,000 megawatt-hours of solar energy and passes the savings on to its tenants, linking social justice with climate justice (Arboleda, 2021).

Other paradigmatic cases, although with less success, are those implemented in the last decade in some political parties around the world. The best known is the case of the 5 Star Movement, an Italian political party, which, beyond being able to agree or not with its ideology, has incorporated an innovative online tool within its party: "Rousseau". The platform carried out continuous consultations and discussion forums for more than 115,000 members until 2021, although approximately half did so actively, about the decisions of their political organization (Bertacche & Follain, 2019). Parties that followed the path of including consultation and decision tools are also the Partido de la Red in Argentina and the Piratpartiet (Swedish Pirate Party) who have formed international cooperation networks, which although they have not been the most successful in the electoral contest, are parties that have managed to position issues related to digital rights, participatory budgets, e-government, open data and direct democracy.

Social movements such as the Digital 3D Replication Movement led by Adrian Bowyer emerged with the purpose of designing low price 3D printers for communal design and the replication of tools, furniture and daily life components. Precedents such as Bioleft, Farm Hack y Sloow Tools, produce agricultural supplies and spare tractor parts showing the potentialities in rural areas of open code and digitalization, finding common ground areas between engineers, designers, architects, farmers and programmers based on the paradigm that agricultural interest are a collective effort (Arboleda, 2021).

Urban gardens, community skate parks, self-managed Wi-Fi networks and alternative energy microstations demonstrate the new sociotechnical relationships that are imprinted on the territory throughout the world, facilitated by municipalist movements, generating new concepts to define itself as platform municipalism (Arboleda, 2021). The Fearless Cities network has sought to articulate this movement as an alternative to the various international crises we are experiencing. Faced with distant multinational organizations with little capacity for impact, flexible and fast networks of cities, although limited, have a transformative will.

This experience served to transfer, as well as learn, knowledge from Barcelona and Berlin to the Kurdish communities in the Middle East, with ecological and community experiments in France and Italy, with autonomous movements in Hong Kong, and with labor struggles in New York. Across the planet, the municipalist movement has progressed. In Latin America, cases like Recoleta have shared knowledge with Belo Horizonte, Valparaíso, Santiago, and Rosario in Argentina. Seeking to ensure that regional knowledge and particularities do not hinder the democratizing potential of technology use with popular participation, Fearless Cities has seen the design of its local initiatives under the paradigm of scaling devices aiming for replicability and adaptation accompanied by the groups that are part of the organization.

These examples show the global need for close and innovative governments, as well as political forces and public institutions with the capacity to adjust to the information obtained, as well as to changing circumstances, with the capacity to generate consensus and strategic projects among various actors to generate welfare and public goods. In the words of the economist Mariana Mazzucato (2021), professor at University College London, Entrepreneurial States are required, that is, guiding agents who articulate and direct an environment of social and economic innovation to produce social and environmental well-being. In hers book, The Entrepreneurial State (2021) she takes up cases such as the role of the State in the research and development processes of the iPhone, NASA, clean energy and the internet, seeking with her text to encourage the government role in the economy and the possibility of promoting the innovations of society in the process. In other words, the State generates the ecosystem of creation and redistribution for tools which produce public-social innovation and common benefit of the society.

In a context like that of Jalisco, Mexico and the Latin American region is important to acknowledge the digital gap, which despite having been reducing, still has been an important factor in the process of digitalization and the use of technology in political activities, not only focusing on the access to infrastructure, but also, even more important, the appropriation of tools and competences by the people, as well as the adaptation to local necessities of the communities in which they are implemented. Lay Arellano (2023) argues that even the measures implemented by federal and state governments in Mexico to expand the coverage and quality of infrastructure, there are still important deficiencies in the continuity of its quality monitoring, not permitting the correct appropriation and use of communities.

Broad, open and popular governments that take advantage of technology for the sake of collective dignity require, as the first steps, basic technology, the critical mass of communication networks, open data portals and transparent vinculation with technology already present in the life of the person. Then applications are needed, where the information is transferred to concrete actions for common use and decision making. The latest is the public use of such applications as complementary tools for the improvement, design and implementation of social projects (McKinsey Global Institute, 2018).

It is necessary to open dialogue and spaces, so that public policies and social projects have a more complete vision, that goes beyond "technical" or consultative and restrictive tools for popular participation, but rather takes into account other branches of knowledge, differentiated realities and trust in people's capacity to understand, as well as to solve their common problems. Technology requires to be democratized and democracy needs to be technified under its own logic: the plural dialogue between praxis and reason for the various ways of living. This is a broad, deep, innovative and dignified democracy.

6. Conclusions

Through this essay it has been argued that representative democracies have multiple limitations to favor the resolution of the various contemporary crises and their complexity, especially after the neoliberalization process in Western societies, as well by the paradigm of the New Public Management in governments. The need for an interdisciplinary, participatory, and technological approach in solving public problems has been argued, primarily in local governments due to its accessibility and potential for the implementation of such tools, closeness to people, and relevance in the global problem-solving chain.

Technology as a means capable of channeling and potentiating the ideas, feelings and actions of a community as a whole, accompanied by technological processes and territorial participation mechanisms, open up new horizons of possibility in the governmental and collective imagination. Reclaiming the means, through conviviality, a revolution is accomplished: the revolution of the common sense.



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