



Citation: Laura Leonardi, Melissa Sessa (2023). World Complexity and Global System: An intriguing debate. *Società Mutamento Politica* 14(28): 5-10. doi: 10.36253/smp-15007

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Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

World Complexity and Global System: An intriguing debate

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This special issue hosts some of the papers given at the tenth conference of the World Complexity Science Academy (WCSA) held in Lisbon from 20 to 22 April 2022, on the subject «SEXY TRENDS for an Emerging Global Governance System». As the organizers made very clear: «WCSA is a think-and-do-tank, which believes that a complexity and educational-based approach to global governance enables the observation and modelling of emergent anomalies and oddities, translating them into potentially sexy trends».

The first part of this special issue includes contributions addressing the topics of legislative expansion, citizenship and sustainable development from different perspectives.

The opening article of this section, whose authors are Emilia Ferone and Andrea Pitasi, provides the scientific framework for today's debate on complexity in the global context. The authors take a research-based and policy-oriented perspective to provide an epistemological framework in which to analyse the evolution of complex systems and global governance. Starting from the crucial analytical distinction between complex and complicated, easy and simple, they effectively illustrate the systemic logics that allow complex systems and global governance to evolve through a self-reproduction that also entails an expansion of horizon. They illustrate the distinction between a complex-and-easy (ECS) as opposed to complicated-and-simple (CSS) conception of the social system, through the device of drawing two alternative scenarios. After clarifying this distinction, the authors explore the issue of sustainability in the light of the relationship between evolution, knowledge and the legislative function based on the Legislation-Development-Demography-Technology (LEDDDET) cycle. Through a wide-reaching discussion of a broad range of literature on the development and dynamics of complex systems, with a particular focus on Kuznets and Deaton, they propose a seven-point theorem that serves as a guide to understand the global evolution of the expansion of legal systems. Their reflection is based on a general theory of knowledge as a complex evolutionary system, addressing epistemological challenges within the framework of systemic constructivism, with particular reference to Piaget. The extensive argumentation clarifies which conditions allow legislative expansion to emerge and which deny it: in practice, systemic implosion and fragmentation. The authors go so far as

to formalize the procedural framework that can enable legislative expansion to function as a driver of LEDDET. In their conclusions, the authors place their theoretical proposal within the framework of sociological enlightenment, as defined in Niklas Luhmann's general theory of complex systems.

The second article in the first part, written by Piero Dominici, focuses on democracy as complexity, and highlights the dynamics of interconnection and interdependence between subunits that cannot be separated from one another. At the heart of the analysis, therefore, are the processes of change that arise 'from below', driven by the smallest subunits with effects on units at higher levels and, ultimately, on the system as a whole. These processes of social transformation in complex systems are unpredictable and uncontrollable. Small-scale changes can have a butterfly effect not only on the entire system but also on the relationship between the system and the environment. The author emphasizes the importance of the emergence of phenomena of self-organization that do not require external regulation. The starting point of the analysis is therefore the hypercomplexity of social systems, and the processes of intense differentiation that prevent a full understanding of their characteristics and constituent parts. These considerations are the premise for the subsequent analysis of the complexity of democracy, which the author summarizes in the statement: «democracy is complexity». For this reason, he argues that the central question is how to 'inhabit' rather than 'manage' complexity, and hence democracy. To this end, emphasis is placed on the relevance of educational processes in order to reconstruct citizenship on the basis of responsibility and transparency. Indeed, it is argued that there is a strong correlation between education and citizenship as active participation.

After putting together, a pointed critique of the abstract and top-down models that tend to simplify complexity, particularly those of economic origin such as the triple helix, Dominici considers the model of the quadruple helix between legislation, demography, technology and development – already dealt with by Ferone and Pitasi in the previous article – in order to analyse its 'missing dimensions'. In relation to the first dimension, legislation, the author highlights the many asymmetries of power in complex societies and the decoupling between the formal framework of rights and the people. Digital communication takes on central importance, leaving little room for the reflective activity required for active and conscious participation, while creating the illusion of increasing it. The analysis continues underlying the dichotomy between technology and culture. On the contrary, a productive way to consider technology is

to recognize that it is not mere technical knowledge and know-how, but an instrument of connection and creative thinking and therefore of cultural production. Development is the third dimension considered. The author highlights that this issue is often given an inadequate definition, because it is still tied to a linear conception of growth that knows no inversions or downturns. Instead, the complexity of development can be grasped by adopting a conception that incorporates the cycle of alternating phases of 'waxing' and 'waning'. The fourth dimension is demography, which is dominated by thinking based on calculation and measurement, instead of life experiences as it should be.

In conclusion, the analysis of the missing parts of the four dimensions shows a tendency ill-suited to the development of a democracy truly adapted to its complexity, in which the simulation of citizen participation takes precedence over their real inclusion in participatory processes.

The third contribution in the first part of this issue addresses a crucial problem concerning the question of democracy that was developed in the previous article. Author Laura Leonardi sets out to analyse the chances of citizenship expansion driven by new forms of social conflict in the context of societal and systemic complexity. The analysis starts from the assumption, widespread in the sociological literature, that social conflicts have historically contributed to the expansion of citizenship. The main question is whether social conflicts are capable of fulfilling this function today in the face of the normative challenges posed by ubiquitous societal complexity. The contribution aims to reflect on the conceptual tools needed to analyse social conflict and its transformation. It introduces the concepts of moralization, *ius nexi* (Sachard 2009), scale and lateral oscillation in order to analyse changes in the structure of social conflicts and the potential for creating new social ties and social alliances. What emerges is a framework that is open to change and gives impetus to claim entitlements to expand citizenship on a new basis. Lateral oscillations take shape from particular conflicts of scale: they are popular, transnational civil society movements, which take in both individuals and collectivities and are linked to specific interests, with a variety of different scopes of action. They empirically show the web of relations of human interaction which construct citizenship in social practices. Horizontal scales help grasp the glocal creation of a web in which promoting the public good predominates over merely satisfying individual preferences and consolidates existing power relations. In this web, a new legal form of citizenship based on *ius nexi* may allow citizenship to expand beyond borders and

territorial barriers. Citizenship based on this principle tends to be cosmopolitan, because individuals can hold it wherever they live and relate to others. Finally, the author raises an open question: which legislative bodies can achieve the goal of establishing a right to citizenship based on *ius nexi* on a global scale: the international courts of justice and human rights? the constitutional courts¹ associated on a horizontal scale and combining different legal traditions?

This open question is dealt with extensively in the following article, by Enrico Damiani di Vergada Franzetti, who analyses the processes of change that have affected the state, law and judicial systems. The article focuses on the reasons for the diffusion and progressive multiplication of alternative dispute resolution methods, such as fundamental or human rights in more recent times, in the light of the phenomenon of legal pluralism. The author's starting question is: why has there been a diffusion, multiplication and diversification of both alternative methods of dispute resolution and fundamental and human rights in favour of silent majorities or even small minorities (communities, groups and individuals) at a time when the constitutional-institutional political systems continue to be designed to satisfy the demands of the ruling bourgeois elites?

The author's thesis is that there is a kind of blindness in the dominant vision of the legal order, anchored in a kind of methodological nationalism based on a linear and monistic vision linked to the monopoly of the state: a single law that applies to a single legal system even if there is a need for integration at supranational or transnational level. He sheds light on the twentieth-century shift from a monistic view of the legal system to a view of legal pluralism, according to which several, sometimes even antagonistic legal systems and dispute resolution systems can coexist in the same community and territory. It is a point of view developed within today's sociology of law that has led to a legal theory based on «normative polysystems». The different legal systems, dispute resolution mechanisms and fundamental subjective and human rights are linked to social conflict (see Leonardi's article on this issue) and to the asymmetries of power from which it arises. After analysing the transformations of social conflict and the forms of negotiation and mediation for dispute resolution in the transition from industrial to post-industrial societies, the author focuses on the differentiation of fundamental rights and human rights that took place during the nineteenth and twentieth centuries, and on

the crisis of legal institutions in the 1980s and 1990s in the face of this differentiation and the complexity of the social system. A challenge to the egal and regulatory systems arose during the nineteenth and twentieth centuries, in a collage with the crisis of the state, both as a welfare state and in relation to its lack of regulatory capacity and solutions for emerging problems. The main consequences of the reaction to this challenge have been processes of national, supranational and transnational hyperlegification. The analysis goes on to illuminate some fundamental steps that at the beginning of the twenty-first century pushed towards the further affirmation and diversification of cultural and identity rights, in an expression of social multiplicity and differentiation which demanded differentiated as well as egalitarian treatment. This period witnessed the production of charters of rights that fed into positive law at the international, transnational and supranational level. However, the need to translate these norms into practice was not met by the construction of jurisdictional institutions that could carry this out. This led to an oscillation between local and global legal perspectives, and between localist solutions to disputes and tendencies towards pluralist deconstruction at a global level. In his conclusions, the author formulates two opposite hypotheses. The first hypothesis is that the affirmation of 'special fundamental rights' moves away from unification: the recognition and dissemination of legal pluralism in the form of alternative rights to fundamental rights can exist alongside a centralized transnational policy geared towards the preservation of power among the elites who hold global financial power. The second hypothesis is that in the area of goods, commodities and services, it can be assumed that the affirmation of fundamental rights and the use of dispute resolution methods, with the recognition of globalist forms of law or 'general fundamental rights', may follow a unifying rather than differential pattern. This would lead to a unified justice entrusted to facilitative methods of dispute resolution favouring members of the world power elite, in a renewed monistic view of law.

Sara Petroccia's contribution develops a crucial aspect for the evolution of democracy and the expansion of citizenship, by addressing the issue of social transformations driven by innovations in the field of communication, particularly the digitalization of information. She raises the question of the importance of the relationship between digital tools and citizenship, offering an analysis that also goes to answer the questions posed by the authors of the previous articles in this first section.

The author traces the theoretical evolution that has accompanied the development of the information soci-

¹ See, for example, the Association of Asian Constitutional Courts and Equivalent Institutions (AACC) and the Conference of European Constitutional Courts.

ety. Starting from the mathematical theory of communication, up to the current theorization of the information society, with its flows and networks, she effectively explains the social impact of the convergence of information and communication technologies. She highlights how the society of networks and communication flows has been reorganized thanks to technologies and digitalization, while pointing to the new forms of domination and power asymmetries linked to the new social morphology. In an analysis of the implications of the relationship between algorithms and social relations/interactions in the production of data, she emphasizes the effects on social organization at an ontological level. She too, like Pietro Dominici, emphasizes the importance of education: in this case educating citizens in the use of the media and the ability to access, interpret, use and produce information so that there can be a real possibility of democratization and social emancipation. However, democratization processes are not facilitated by the emergence of an economy of attention, the presence of a few monopolies in a hegemonic position of management and governance, and the concentration of digital power in a few hands, leaving room for new forms of control and surveillance, filtering and selection of information.

A serious obstacle to democratization via digital forms of communication is the presence of digital inequality between people located in the same territorial contexts, due to gender, age, work activity, etc., and, on a global scale, between continents where individual cultural incapacities to access and use digital communication are exacerbated by a lack of infrastructure. According to Sara Petrocchia, it is precisely the danger of the formation of a digital underclass that makes it urgent to intervene through education and support policies to address the structural aspects of inequality that hinder the inclusion of citizens in the information society.

The second section of this special issue aims to investigate the performative and transformative potential of all these dimensions within society, analyzing the type of society that the “smart” paradigm intends to develop through the various potential forms of smartness.

One of the adjectives increasingly used to describe contemporary society is the term “smart”. We live in the era of smart cities, smart economies, smart homes, smart people, smart communities, and smart work. Globally, smartness is emerging as the new horizon of contemporary society to which “meanings and practices” must be adapted. The development potential of new smart technologies, artificial intelligence, and the use of big data are part of this framework. Given this premise,

can smartness really represent a promising “paradigm”? And, promising with respect to what?

Delving into the individual contributions, Susca first reconstructs the history of smartness, primarily as a more “practical than theoretical” concept. Precisely because of this practicality, smartness, and especially the concept of the smart city, is invigorated by the logic of efficiency and economics, which will be the common thread of all the contributions. Susca reasonably notes that there are clear differences and much broader criticalities in the competitive processes associated with smartness.

In the pursuit of smartness, a process is established that sees administrators and politicians acting in the name of smartness and “modifying” cities to make them more competitive internationally, that is, more valuable for investment. Certainly, as the author carefully points out, one cannot a priori exclude that a smart society is more prosperous and therefore more attractive. In this case, Susca states that “it is more important than ever not to confuse cause with effect, as the essential point is not, or should not be, to beat more or less real or imaginary competitors but to seek new balances and solutions that become possible and necessary today”.

Therefore, it is noted how Susca considers the friction with the economic factor crucial in understanding smartness. This is important in the direction of the so-called corporate storytelling of smartness, that is, the narrative that describes the pursuit of smartness only as the pursuit of an economic purpose. Sessa, as will be seen later, also attributes clear importance to the economic factor as constitutive of the definition of the concept of smartness. However, in this direction, Susca is reasonably critical, stating that “thinking seriously about a smart society means taking on a great responsibility in a world where there is much inequality between rich and poor countries”. She then questions whether it really makes sense to pursue smartness when a dignified existence is not allowed or even denied to others. The smartness and the smart society, therefore, far from being a neutral alternative, are instead an evident power device that puts democracy to the test.

In addition to the general part that highlights how smartness is now an integral part of complex systems, within this special issue are specific focuses that underline how, when talking about smartness, reference is made not only to the phenomenon in the abstract but also to its real repercussions on society. Iannuzzi’s contribution highlights a critique of the current process of gamification that pervades cities, especially smart cities, and is called the Playful Paradigm. Vanolo (2019) describes it as an innovative concept that promotes

social inclusion, healthy lifestyles and energy awareness, intergenerational and cultural mediation, and economic prosperity. Moreover, the strength of this paradigm lies in how the idea of play can offer new strategies to engage city stakeholders in urban development. What is the connection between games and smart cities? Iannuzzi uses some examples, such as the city of Udine or Cork, to highlight the innovative paradigm of gamification. These examples demonstrate how the term gamification extends to cities and urban development. The social gamification we are witnessing does not seem to be just a passing trend but rather a process that has emerged from the economic and efficiency-driven logic that is pervasive in contemporary society and does not seem to have anything “playful” about it in the sense that the term suggests. As forms of socialization, the expressions of gamification activate a series of elements and dynamics that are the hallmark of game operation, specifically, logics of points, levels, rewards, badges, classifications, challenges, and missions. These terms have a lot to do with the idea of the smart city, as Susca’s critique exemplifies.

The underlying logic of the article is that the economy drives the world, even through play. The so-called “urban game”, which is prevalent in smart contexts, tends to transform the city into a brand, what Russo calls “ambient advertising” (Russo 2014: 20). Iannuzzi provides some examples that illustrate this point. The first is the case of Bologna with “Vodafone loves Bologna,” and the second is the Red Bull empire, with the “Red Bull Stash” campaign in 2012-2013, a 2.0 treasure hunt with the aim of finding a pack of Redbull cans and its code, with the help of clues left throughout the country (Russo 2014). In this sense, Iannuzzi believes that these processes, alongside others, need to be analyzed. She asks what the real smart transformation is within contemporary society. The author emphasizes how smartness is considered within these processes of gamification of society. If smartness is attributed to the idea of a paradigm that is attentive to inclusion processes, then contemporary processes can be defined as smart. If, on the other hand, individual and collective interests are subjected to an economic and efficiency-driven logic, then a critical rethinking is needed regarding both smartness and gamification processes.

Ruzzeddu presents a careful analysis of how the constraints due to COVID-19 have directed society towards actions involving ICT and the job sector. Both private and public sectors were forced to reorganize in the name of smartness during the emergency period. In this regard, Ruzzeddu asks what the social implications of what is defined as smart working are, and he does so

by trying to answer two research questions: first, how widespread is the phenomenon of smart work across Europe, and secondly, whether this diffusion is due to the pandemic, that is, the physical constraint in places that has obliged the use of technological solutions and alternatives to in-person work, or whether it depends on a propensity for innovation. Ruzzeddu states in the conclusion that “the COVID pandemic has certainly contributed a lot to the spread of RW throughout the European Union, enabling several economic sectors to avoid interrupting their operations due to social distancing. However, the use of this labor practice is highly unequal throughout the EU Member States. This inequality, as revealed by the comparative data, is significantly dependent on the propensity to innovate”.

Sessa presents a well-reasoned bibliography on smartness. The essay’s hypothesis is built on the idea that the world of smartness, particularly the “collocation” of smart society, has little to do with society itself. It is a phenomenon that is closely linked to technical aspects that obscure its social background. Moreover, the essay notes that the distinction between hard and soft sciences is particularly visible in the field of smartness, leading to a lack of a holistic definition that can help achieve a common understanding, rather than smoothing out differences. Sessa then wonders what the technicalities and lexical difficulties in smart approaches entail, and consequently, what repercussions the lack of a holistic definition has in the social field. In this regard, and following the direction already taken by Iannuzzi and Susca, the essay notes how the background is strongly economic and replaces the usefulness of society with the usefulness for society, excluding relationships and ties, and missing that connection which defines smartness in all subsystems. The efficiency-driven reasoning underlying smartness makes society less humane, sacrificing the beauty of imperfection in the name of standardization in the use of devices, procedures, relationships, values, and culture. Sessa’s questions, in the broader context of the smart society, can also be observed in the urban context. Along with Sessa, Senator presents an article that aims to analyze critical processes within the smart city, with a particular focus on sustainability. The two authors start from the assumption that two main categories can be associated with smartness: sustainability and technology. However, as the authors note, this dichotomy excludes a range of social processes that belong to the smart city. Therefore, the authors divide the concept of the smart city into two models: the soft model, which is more focused on sustainability, and the hard model, which is more strongly based on technology. Both visions seem to exaggerate

one aspect of a normal city, either the hyper-technological or the hyper-sustainable version. This tendency towards perfect storytelling brings with it the dark side of smartness: a strong impoverishment of the social dimension.

So, what is the “solution”? The two authors seem to converge on the idea that the smart city cannot be ghettoized in either dimension, but instead should be a theoretical and ideal model that encourages the logic of the collective, which plays a proactive role in the search for innovative solutions that facilitate daily routines. Therefore, it is not a matter of shifting one dimension or the other, but of creating an amalgamation through the interconnection of all the dimensions of smartness.

Staying within the context of the smart city, Gurashi wonders about the future that awaits it, given the conflicts and internal contradictions it faces. Apparently, smart cities seem to be the ideal place to live in, as they promote well-being. However, this well-being is derived from the fallacious belief that the greater the technological progress, the higher the quality of life and therefore the well-being. This belief leads to the drift that with the increasing pool of technology within the urban context, social control also increases. It is in this direction that Gurashi questions the space for order and conflict. The latter seems to flatten out into functionality. That is to say, the reduction of conflict also reduces complexity, precisely in the name of the process standardization that Sessa already identified.

What emerges from Gurashi’s analysis is how social control erodes freedom, democratization, participation, and conflict, all of which are necessary for the smart city to survive. In this direction, two factions are created within the smart city: the “good” citizens, of “A class”, i.e., those who respect the rules and, according to this perspective, collaborate in the functioning of the city, and those of “B class”, the deviants, the excluded. This consolidates new forms of exclusion and inequality that contradict the well-being so sought after by smart policies. The city offers a comforting, almost maternal embrace that induces blind faith in technological solutionism and sets aside any reservations and distrust. In short, the engaged citizen gives way to a more disengaged, indolent citizen, and, if we embrace McGuire’s (2018) thesis, even stupid.

The vision of smartness, then, is far from being neutral, as Benini reminds us in his essay analyzing the risks and possibilities of the “smart” vision of the world. Benini emphasizes how the term smart, whether associated with the city, games, or work, should be treated with great caution. He questions whether the pursuit of smartness is synonymous with perfection and whether it

results in acceleration and alienation which would also mean a reduction in the time of life. To this end, Benini provides a sort of theoretical guide on how to be smart, in a paragraph titled “the reconnection between economy and society through culture”. The reconnection process, according to the author, reconnects the value of the link between economy and society that passes through culture. The economy, especially in a smart sense, generates cohesion when it responds and is an expression of a territory, that is, when it puts the social actor at the center. An economy made of values and distinction, which is linked to culture and cannot be moved because it is an expression of a territory, translates its social and cultural values into economic terms.

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