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Participation as an adaptive social system for circular spatial agency: A critical review towards a multi-aspect ontology

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Abstract: This study presents an Adaptive Social System for participation in Circular Spatial Agency. Adaptive Social Systems consist of dynamic networks of relationships where both individual and collective behaviour may shift in a resilient manner. Circular Spatial Agency understands Architecture Design and the built environment within a multidisciplinary approach in the creation of buildings and spaces as social, dynamic, and political products whilst reaffirming circularity in all its dimensions (social, economic, environmental). Proposing an Adaptive Social System for participation may set the foundations for addressing the issues concerning the socio-economic dimension of the Circular Economy (CE) agenda, in general, and its application in the Architecture practice, in specific settings. That said, this paper has two main objectives: a) To present the first out of four levels of an in-progress conceptual framework that proposes to establish Participation in Circular Spatial Agency across 4 different levels - 1. Systems level; 2. Socio-political level; 3. Built environment level; 4. Information and Communication Technology (ICT) level; b) To launch the foundations of a multi-scale ontology to interrelate and organize the fragmented knowledge around Participatory Design (PD), Circular Economy and Architecture, creating a shared vocabulary for interdisciplinary collaboration. Through a systems-based approach, the study uses a critical literature review method to interweave the complex theoretical background. The expectation is that the framework may guide collectives, NGOs, and companies on developing future applied research and projects looking for alternative circularity standards based on participation in Architectural Design.

Keywords: Circular economy; systems thinking; participation; architecture.

1. Introduction

1.1. Systems Thinking, Circular Economy/Design and the Built Environment;

Systems can be defined as "*emergent or designed networks of interconnected functions that achieve an intended outcome*" (Jones, 2014, p. 94). Usually seen as an overarching science, Systems Thinking has found terrain across several disciplines, as it offers capabilities for dealing with the complexity of today's societal global issues. As suggested by Jones (2014), today's issues emerge from multiple root causes, implying their interconnectedness at any given time – as well as their "wicked" character, a concept often brought to surface by design thinkers (Buchanan, 1992; Rittel & Webber, 1973) to describe complex, *irresolvable* problems in society. Such perspective towards complexity usually implies multidisciplinary action across industries and fields, sharing a common ground with both the Circular Economy (CE) agenda and Design Thinking, particularly when applied to the Built Environment.

The CE – an "umbrella" concept that embraces several sustainability-related concepts and concerns (Lazarevic & Brandão, 2020) - started to gain attention since the end of the 60s, primarily within systems' theorists that were concerned about human impact over the environment and vice-versa. Publications of the

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time, particularly the Club of Rome's "The Limits to Growth" in 1972, have stressed the importance of acting upon our way of living, calling for an urgent change in our predatory – or linear - means of production and consumption (Meadows et al., 1972). More recently, the CE concept has been increasingly solidified in academy and in practice, assuming a systems rhetoric defined as "*an economic system that uses a systemic approach to maintain a circular flow of resources, by recovering, retaining or adding to their value, while contributing to sustainable development"* (ISO, 2024).

Today, systems theory finds all sorts of applications in implementing Circular Economy across different sectors. In the Spatial Design practices, they vary from the creation and application of approaches and frameworks (Broman & Robèrt, 2017; Chon, 2020; Iacovidou et al., 2021), to assessment methods and tools and overarching theoretical foundations applying systems to the CE (Korhonen, 2020). In more concrete settings, the application of systems may involve Circular Design (CD) strategies (Blomsma & Brennan, 2018), selecting overall resource loop principles (by referring to the *Narrowing*, *Closing* or *Slowing* loops (Konietzko et al., 2020), or the *R-Ladder* (Reike et al., 2018)) and by analysing their impact in terms of sustainability and circularity, including life cycle assessment (LCA) and life cycle costing (LCC), material flow analysis and system dynamics assessment (Malmqvist et al., 2020) as well as social life cycle assessments (SLCA) (Barbero et al., 2024; UNEP, 2020).

Since today's societal problems are complex, variegated - hence "wicked" - issues, there has been a recent, yet incipient, claim to deal with them differently, not only delegating the solutions to technical experts, but trying to involve various stakeholders, even laypeople, in a co-creation pursuit (e.g.: (Chon, 2020)) for better attending this and future generations' needs. In fact, the importance of the role of local communities in participating in the transition to the CE is well recognized across several Sustainable Development Goals (SDGs) (Frediani et al., 2019), a framework that is utterly diffused among CE initiatives in the Built Environment. Numerous targets presented in the document (UN, 2015) mention either "inclusion", "empowerment" and "participation" of multiple stakeholders in and outside of industries' supply-chains. However, much is yet to be uncovered in terms of their applicability into the Built Environment, or to the Spatial Design practices.

1.2. Main gaps addressed and Research Question.

Notwithstanding the deep connection between **Circular Economy** and **Systems**, especially in a first phase of the CE agenda (Reike et al., 2018), and the extensive literature surrounding those subjects (Charter, 2018; Kirchherr et al., 2023; Korhonen et al., 2018), today, the mainstream approach to CE initiatives seems to abandon the complexity of all three dimensions of sustainability issues (social, economic, environmental) (Korhonen et al., 2018), especially when touching upon **Spatial Design** matters. Despite the increasing recent trend to cover some aspects of social sustainability (Kirchherr et al., 2023), CE-related literature has been largely addressing technical and ecological affairs related to the sustainable loops of resources (Calisto Friant et al., 2020; Malmqvist et al., 2020), whilst failing to provide more holistic and systemic approaches addressing socio-economic aspects of circularity (Calisto Friant et al., 2020; Reike et al., 2018).

The lack of attention towards more holistic CE visions, reveals a clear avoidance in the literature towards very important aspects related to Social Systems inside the CE, a connection that should not be overlooked since every system today (even natural or the ecological) is considered a socially implicated system (Jones, 2014, p. 94). Social Systems are ultimately defined by their stakeholders, the methods and strategies they adopt and ultimately fathom (Jones, 2014). However, the extension to which end-users and the local communities are considered as part of these social systems is not totally undisclosed. Particularly, there is no clear agenda for how wealth, knowledge, technology and power is being redistributed throughout society when following a Circular Economy model. Moreover, there is an overall lack of attention towards: Systemic thinking on growth, capitalism and decoupling; remaining issues regarding governance, social justice and cultural change; as well as alternative visions of circularity (Calisto Friant et al., 2020).

Furthermore, there is no clear vision on how the design and construction of our spaces should be carried out under a holistic perspective of CE, one that considers the complex social systems we live in today, including new social network paradigms and platforms of exchange among really diverse people – even the ones outside of the direct supply chain, i.e.: laypeople represented by local communities and end-users. To our knowledge, there is no unified definition of what circularity in buildings should mean in terms of the social dimension (Mies & Gold, 2021). When addressed in the construction sector, the social dimension of sustainability usually limits itself to worker's rights issues or comfort and health inside the building (e.g.: child employment, safety at the construction site, accessibility, ventilation, temperature and natural lighting, etc.). Actual strategies for involving

people in the decision-making, on a way to address the socio-economic aspects of circularity mentioned above, are not yet successfully implemented to achieve true behavioural and societal change for the transition towards a Circular Economy. Ultimately, despite the UN efforts put through in the last decade in disseminating the SDG's framework to achieve such transition, the goals still present limited results worldwide (UN, 2024) as they do not necessarily offer law-abiding regulations or specific platforms to apply the 200+ indicators and strategies to achieve that ultimate goal. Therefore, the main research question this study addresses is: *How can adaptive social systems help rethinking architectural design as a socially engaged, participatory practice inside the CE agenda?*

1.3. General context and objectives of the study

1.3.1. General Context: The Conceptual Framework for Circular Spatial Agency

This study follows the general hypothesis that a 4-level approach needs to be undertaken to address the fundamental gaps related to the Circular Economy and to better respond to people's needs in terms of Sustainable Development in the built environment. This 4-level approach – derived, among others, from the works of Jones (2014) and Iacovidou et al. (2021) – consists of an in-progress Conceptual Framework to introduce participation in *Circular Spatial Agency*. Circular Spatial Agency is defined under a specific lens of Spatial Practices. It understands Architecture Design within a multidisciplinary approach in the creation of buildings and spaces as social, dynamic, and political products (Lefebvre, 1974/1991) whilst reaffirming circularity in all its dimensions (social, economic, environmental). The framework, thus, proposes to achieve people's sustainability needs through participatory methods and overarching goals, exploring the concept in 4 different levels: 1. Systems level; 2. Socio-political level; 3. Built Environment level; and 4. Information and Communication Technology (ICT) level (Figure 1).

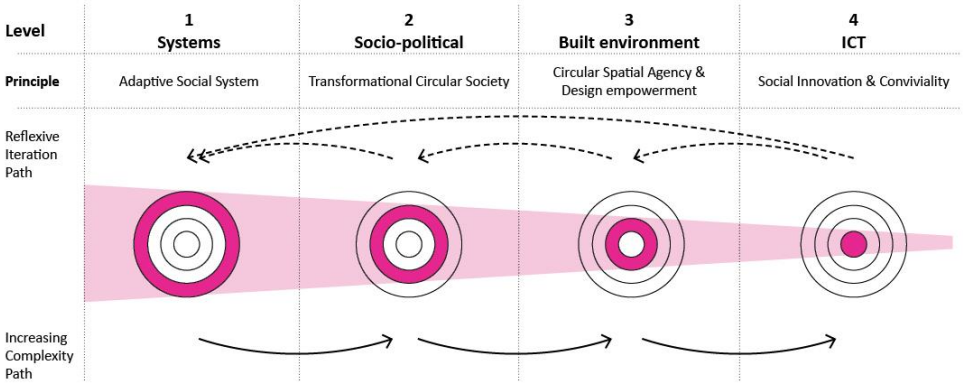


Figure 1: Levels of Conceptual Framework for Circular Spatial Agency

Each level corresponds to a complexity scale of action with interrelated and iterative principles. The framework explores the concept of participation going from a broad social dimension perspective as approached by Freire (1970/2012) and Max-Neef et al. (1991) and further investigate it in terms of human development (Schröder et al., 2020), capabilities (Sen, 2005), and the built environment (Birgisdóttir, 2023; Blundell Jones et al., 2013; Miessen, 2016).

Level 1: The System level, sets the foundation for an Adaptive Social System for participation, defining its essential elements, overarching goal, participants, and people's needs/wellbeing and capabilities (section 3.1).

Level 2 corresponds to the **Socio-Political level**, having the framing of the Adaptive Social System towards a Transformational Circular Society (Calisto Friant et al., 2020) as a guiding principle. This level takes into account several concepts related to a "paradigmatic shift" vision of the Circular Economy, including the Commons (Ostrom, 2015), Degrowth (Schröder et al., 2019) following an ecological ceiling and social foundation (Birgisdóttir, 2023), with the main goal to select and define participatory indicators across 5 different sustainability dimensions (social, political, cultural, economic, environmental).

Level 3 further uncovers how those indicators impact people's involvement at the **Built Environment level**, supporting Circular Spatial Design concept. It makes use of Participatory Design (PD) methods to include non-

experts in the architectural design process or design product (Pak & Verbeke, 2014) ultimately aiming at Design empowerment (Kesdi et al., 2024; Pak & Verbeke, 2014; Senbel & Church, 2011) and futuring (Fry, 2009).

Level 4 consists of the **Information and Communication Technology (ICT) level**. Acknowledging the importance of considering technological advancements in today's social systems, this level has as main guiding principle the creation of platforms for social innovation (Manzini, 2015; Moulaert et al., 2013) and change (Smith & Iversen, 2018) through the concept of conviviality (Illich, 1973; Vetter, 2018).

1.3.2. Objectives of the study

This paper focus on the first level of the framework: Systems level. Its overarching goal is to design an Adaptive Social System as a tool to initiate participatory action in Circular Architecture, claiming for a *Circular Spatial Agency* starting from a systems level. That said, the main objectives of this study are twofold: a) To unravel the first level (Systems) of a conceptual framework that aims at including participation across different levels of action in the CE; and b) to present the foundations of a multi-scale ontology based on a systems approach, with the intention to interrelate and organize the fragmented knowledge around Participatory Design (PD) and Circular Economy (CE), creating a shared vocabulary for interdisciplinary collaboration inside the Architecture field.

2. Methodology

This paper delves into a theoretically grounded alternative route for creating the conditions to allow Participatory processes in a system-level of Spatial Design. It does so by binding multiple theoretical streams of knowledge. The focus of the study, thus, is on finding evidence of connecting concepts to interweave the complex theoretical background around Participatory Design (PD), Circular Economy and Architecture. For this reason, the realization of a concise critical literature review seemed more coherent. A critical literature review is especially useful for uncovering conceptual gaps and for developing new theoretical insights by drawing on a wide array of fields and viewpoints (Grant & Booth, 2009).

Literature was identified through a theory-led sampling approach, selected based on its conceptual relevance to the research themes and the analytical lens adopted (e.g., socio-spatial agency, circular economy, systems and design thinking). This involved tracing key authors, conceptual lineages, and paradigmatic debates through reflexive iteration and snowballing. The selection focused on seminal books as well as relevant journal papers in a multidisciplinary field sample. The organization of the theory followed two threads:

- Systems -> Sustainable Systems -> Social Systems -> Adaptive Social Systems.
- Participation -> Social Sustainability -> Wellbeing -> Empowerment -> Circular Economy.

The critical review process helped suggesting the initial foundation for a multi-scale ontology, evidencing the network of concepts, categories, properties and relationships between them. The concepts explored in these two threads were later translated into a model for an Adaptive Social System for participation in Circular Spatial Agency. The model presents two axes: Human Development and Enabler Capabilities (these two axes will be further explored in future research as continuums to assess Circular Spatial Agency).

3. Results

3.1. The Systems Level:

3.1.1. Introduction

The idea behind designing an Adaptive Social System for participation in Circular Spatial Design stems from two basic principles: 1. The need to structure and systemize the underlying mechanisms and elements of participatory processes present in the specialized literature; 2. The need to foresee participation as an end, and not only as a means.

Participation in Spatial Design has been discussed in many ways in literature. Several authors have explored ways to assess participatory processes using scales from less to more involvement of non-experts (Arnstein, 1969/2019; Fung, 2006). Others have delved into a critical analysis of its multifaceted occurrences (Cooke & Kothari, 2007; Miessen, 2016), understanding the concept's limitations and possibilities for spatial design practices (Awan et al., 2011; Blundell Jones et al., 2013). Practitioners have experimented with participatory methods and tools in design and planning (Sanders et al., 2010; Sanoff, 2022), and several architects have

acquired and discussed an alternative role within their own practices directly or indirectly motivated by Lefebvrian ideals (Lefebvre, 1996). To name a few classical examples: John Habraken (2000), Lucien Kroll (Pak & Verbeke, 2014), Walter Segal (Hilmer, 2020).

Be as it may, even if participatory methods in spatial practices follow a systemic approach, to our knowledge, there is no publication that describes a functioning adaptive system for participation. In addition, as stated by Pak & Verbeke (2014) participation in architecture occurs as a means (through the design process) or as a consequence (through the design product). But there is no work analysing the repercussions of participation as an end, not even in the context of Circular Spatial Design.

3.1.2. Theoretical background

The development of the Adaptive Social System for participation as an end followed two parallel theory threads:

A) Systems thread - Sustainable and (Adaptive) Social Systems:

First, the process of designing an adaptive social system required a systems approach, defining what are the participation system's components. The extensive work of Meadows (2009) assisted in the visualization of a simplified model for such a system, containing its basic elements – i.e. the system's boundaries, input, output, function, sub-elements, relationships and feedback loops (See section 3.1.3.).

Second, a participation system is first and foremost a social system. As such, it should be seen as a living, dynamic whole, instead of the mere collective properties of its elements (Metcalf, 2014). Several aspects need to be taken into consideration when understanding social systems. Building upon the work of several seminal system scientists and theorists (e.g. Russell Ackoff, Bela H. Banathy, Aleco Christakis, John Warfield, Andras Angyal, John Bowlby), Metcalf (2014) critically delves into social systems' principles, discussing how their elements may interact as a result of autonomous human action, both implying internal (homonomous) and external (heteronomous) interactions to the system's governing principles. For this reason, it is also important to understand people's roles "*when it comes to the design of social and societal systems of all kinds, [as] it is the users, the people in the system, who are the experts"* (Banathy, 1996 as cited in Metcalf, 2014a p. 10).

Another important factor to take into consideration is to provide a platform for the social system's sustainability. When addressing Sustainable Systems, there is often mention to the Sustainable Development definition provided by the Brundtland report (1987): "*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs*". When considering social systems, Broman & Robèrt (2017) have developed the Framework for Strategic Sustainable Development (FSSD), a framework that provides a structured approach for planning, decision-making, and collaborative action across different disciplines and sectors from both an ecological and social systems standpoint. The authors have comprehensively addressed the gap in literature towards the definition of specific conditions that cannot be hindered concerning the social dimension of sustainability, namely: *Health, Influence*, *Competence, Impartiality,* and *Meaning-making.*

Building on this idea, Missimer et al. (2017) emphasized that social systems must be adaptable and flexible to remain sustainable—a trait dependent on social resilience, or a community's ability to withstand social, political, or environmental disturbances (Adger, 2000). This adaptive capacity relies on five key aspects: *Trust* (among individuals and societal institutions), *diversity* (in traits like age, gender, and skills), *common meaning, capacity for learning*, and *capacity for self-organization* (Broman & Robèrt, 2017; Missimer et al., 2017).

B) Participation thread – Social Sustainability, Wellbeing, Empowerment and Circular Economy:

Participation is essential to the social sustainability of communities and places, as it enables residents to voice their needs and aspirations, ultimately influencing policy-making processes (Sanoff, 2022). Participatory processes serve as to improve people's general wellbeing in terms of income, personal growth, self-reliance or other values they cherish (Sheng, 1990).

The concept of wellbeing, or quality of life is, thus, central to participatory action. The concept is born in literature around Human Development (HD) (Alkire, 2002): On the one hand, quality of life depends on the capacity people have to fulfil their fundamental human needs (Max-Neef et al., 1991), and on the other, human needs are seen as preconditions to wellbeing (Alkire, 2002). The HD wave surfaced amidst the work of Amartya Sen's *capability approach* (Sen, 2005), a concept that has two basic principles: 1. That people are free to exercise or pursue their values and 2; that people should have the capacities or the means needed to exercise their own freedom. Therefore, freedom is defined as the choice, ability and opportunity people have to pursue their aspirations and at its core "*is the notion of agency comprising the individual's and collectives' ability to act upon what is valued*" (Frediani et al., 2019, p. 5).

Participation is thus intrinsic to human development, as people are not only the recipients of its benefits but also the drivers of the progress and change that make it possible (Frediani et al., 2019). Participation is also considered a fundamental human need in itself (Max-Neef et al., 1991).

Such conceptualizations of participation are in line with the Freirian ideals of participation, that sees it as an end in itself as it focus on how people – any people, but especially the *oppressed* – may acquire and share knowledge and abilities to alter unjust conditions and power structures (Freire, 1970/2012).

It is clear then, that when people participate, having participation as an end, they not only pursue the improvement in their general wellbeing/quality of life, but they also invariably should be empowered in the process. The concept of empowerment has long been argued in many contrasting ways along history, at times pessimistically, at other optimistically and, as it happens in many other concepts, as a result of co-optation (Unterhalter, 2019). For the purposes of this research, the notion of empowerment here stated derives from the seminal works of Foucault (1977/1995) and Bourdieu (1999), feeding the idea that people – especially the *oppressed* and/or *deprived* (Marcuse, 2009), from a perspective of justice (Rawls, 1971/2005) - may be empowered individually (in the process of acquiring social capital, by learning and reaching individual's human needs, thus improving their quality of life) and collectively (stressing the importance of human agency promoting fairness, solidarity and diversity) in articulating their capabilities (Unterhalter, 2019) and taking decisions together.

Furthermore, it is important to acknowledge the intrinsic connection between people's empowerment through participation and their roles in the transition towards a Human Development-focused Circular Economy (Schröder et al., 2020). Schröder et al. (2020) have developed a framework introducing a 'human sphere' – in addition to the technical and biospheres – to enable agency to end-users and local communities in the transition towards a circular society. The authors identify 4 loops and cascades of strengthened human capabilities and choices both in a top-down and bottom-up fashion, acting upon: individual wellbeing enabled by sustainable lifestyles and livelihoods; community resilience and belonging, fostered by CE community initiatives; value creation for people and planet, through the creation of inclusive CE business models; and equal access to common pool resources, established by macro-economic policy frameworks for sustainable use of resources.

Finally, a last concern should be taken into consideration when understanding the theoretical and practical limitations of the concept of participation. The limitations normally are extended to: The deliberation over who should be entitled to participate in the decision-making process of our society – a debate that extends from classic democratic theory (Pateman, 1970; Sanoff, 2022); the assessment of how qualitative participatory processes can be (Arnstein, 1969/2019; Fung, 2006); what is the purpose behind them; and how they can contribute to Sustainable Development (Frediani et al., 2019). Ostrom (2015) somehow bridges these debates and offer some light over those queries on her seminal work around Common Pool Resources, or the Commons. The Commons stand for groups of people who collectively own and manage a (natural) resource, and it is established by three elements: 1. The commoners – or the community that is entitled to use a certain resource; 2. The resource itself; 3. The rules and protocols created and abided by the community in order to manage the resource. Therefore, it is essential to understanding what the objectives behind a certain participatory process are, who will be entitled to participate and to what degree, how can they foster social inclusion at the same time as guaranteeing a sustainable management of the resource at play.

3.1.3. Towards an Ontology

The theoretical thread presented above suggests intersections and points of attention to organize and interrelate the fragmented knowledge around PD and CE and, to a smaller degree, spatial practices. Particularly, there seems to exist a converging point related to Human Development and Social sustainability where the ontology may develop itself from towards circular spatial agency (Figure 2).

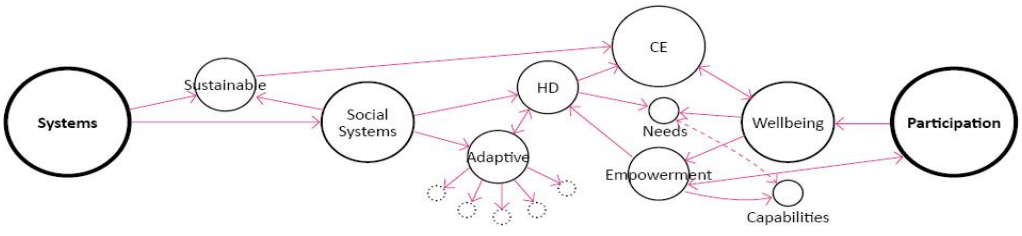


Figure 2: Schematic Ontology

Visualizing and producing a complete multi-scale Ontology in future research should help better understanding the points of intersection between these elements and suggesting new theoretical paradigms for socio-spatial inclusion and innovation.

3.1.4. The Adaptive Social System for participation and its elements

The theoretical threads above helped conveying the elements and the relationships of the adaptive social system for participation. In a systems-based approach, the *boundary* of the system is characterized by its *Input* - the people (A) themselves - and *Output* - meet people's needs (B) - through a specific *function*, the participation process. This simplified, linear perspective of the system needed, however, to be further specified, contested against the system's sub-systems and its feedback loops (Figure 3).

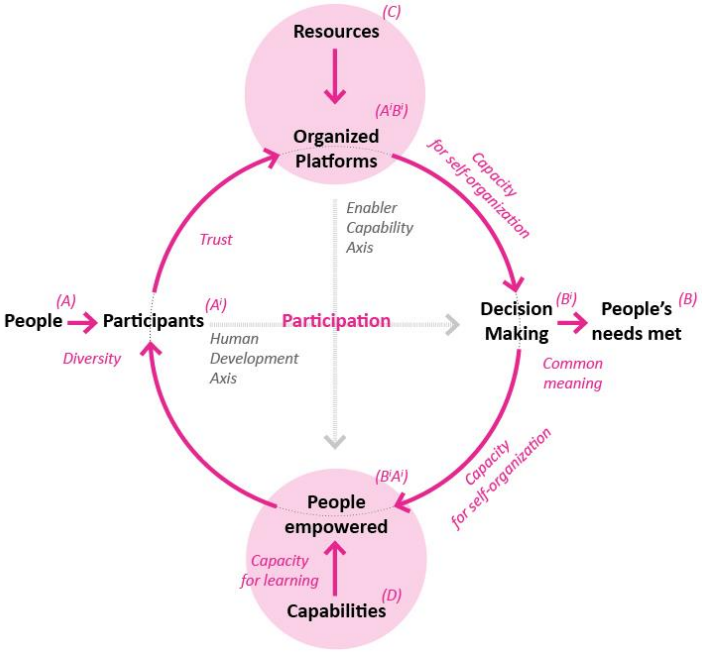


Figure 3: Adaptive Social System for Participation

In a participatory process following a commons perspective, not everyone is entitled or willing to participate in making decisions for collective wellbeing. This means that, for participation to take place as an end, the system needs: Active participants (A^i), even if they have varied degrees of expertise and/or engagement over the participatory process; and their voices being heard through decision-making (B^i). Furthermore, to make decisions collectively, participants need organized platforms (A^iB^i), characterized by physical or virtual environments where exchange may occur (e.g. collectives or institutions, companies or organizations, self-organized activist groups, web-based platforms, etc.). These platforms, in turn, need certain resources (C) to function properly. They can be from various kinds, e.g.: natural (water, land, etc.), economic (i.e. financial funding), physical (spaces, hardware's), human (tutors, facilitators), technological (tools, software's, applications) or even intellectual (methods, literature references, frameworks, etc.). At the same time, through having their needs being met and via decisions being collectively made, people may be empowered (B^iA^i), motivating people to become (new) or continue to be (old) participants.

Meanwhile, for participants to have access to resources and be able to make decisions together within organized platforms, they need specific capabilities (D). These are categorized by the degrees to which they can acquire new abilities or knowledge for general personal development and for achieving a specific goal, defining the extent of empowerment achieved in the process (for instance, when discussing design empowerment, based on Senbel & Church (2011), people can achieve up to 6 levels of empowerment, from least to greatest level: Information, Inspiration, Ideation, Inclusion, Integration, Independence).

Such model (Figure 3) puts in evidence the clear presence of two interconnected subsystems characterized by two fundamental axes for participation as an end: The Human Development axis and the Enabler Capabilities Axis. As a last step, the system needs to account for its adaptability – or resilience against internal and external shock – considering the 5 adaptive capacity elements for social systems presented by Missimer et al. (2017). In

the model designed by us, they serve as to define how the relationships between the system's elements should be carried out.

The first, *diversity*[1], should be present in the relationship among the participants of the system. *Trust*[2] should be envisioned between participants, but also extended towards the organized platforms, as the only way to make decisions together and finding a *common-meaning*[3] to achieve collective needs.

Through the process of making decisions in organized platforms, people should gather the *capacity for self-organization*[4], at the same time that the *capacity for learning*[5] is born from the development of participants' capabilities, both following a feedback loop for empowerment.

4. Conclusion

This study suggests a pathway on how adaptive social systems can fundamentally reshape architectural design as a socially engaged, participatory practice within the Circular Economy agenda. The proposed Adaptive Social System establishes participation as an end, structured around two critical axes: Human Development and Enabler Capabilities. By integrating systems thinking with participatory design principles, the framework addresses the socio-economic dimensions often overlooked in mainstream CE approaches, providing a theoretically-led foundation towards an ontology for inclusive circular spatial agency.

In general, the conceptual framework proposes to guide collectives, NGOs, and companies on developing future applied research and projects looking for alternative circularity standards based on end-user and local communities' participation in Architectural Design. The first level of the framework (Systems) here presented provides the initial step for achieving this objective. It allows Spatial Agency to happen within a socially resilient – adaptive - and well-structured system where participatory processes can take place defining the actors involved in the decision-making process, their fundamental needs, the platforms and resources used as well as the empowerment possibilities. Nonetheless, future research should focus on operationalizing the remaining three levels of the conceptual framework—socio-political, built environment, and ICT levels—while developing concrete metrics for assessing participatory outcomes. Empirical validation through case studies and pilot projects will be essential to test the framework's practical applicability and effectiveness in real-world contexts, considering power dynamics and potential conflicts inherent in participatory processes within existing institutional structures. Further exploration is also necessary to develop a fully operational ontology, exploring more in detail a Spatial Agency thread.

Finally, participation as an end involves dissolving power structures (by empowering and producing social capital) but also by achieving real wellbeing when meeting people's needs. Behind this thought, Circular Spatial Agency should be undertaken to provide the setting for a collectively agreed-upon process where people feel entitled to take their own decisions over the spaces they inhabit, and the society wherein they live.

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