

NAVIGATING POST-GROWTH PLANNING: LEVERAGING COMPLEXITY FOR BEING INTENTIONAL AND UNINTENTIONAL

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Abstract

Spatial planning faces mounting challenges with regard to land use, housing, energy, and infrastructure – fields where traditional solutions, such as expanding land use, are no longer viable or desirable. Planning's fundamental assumptions of temporal certainty, linear control, and clear roles erode and demand fundamental rethinking. This paper connects post-growth planning to complexity theory to navigate this tension by emphasising adaptivity, reflexivity, and normativity. Drawing on Niklas Luhmann's systems theory, the exploration reveals how spatial planning's self-images and roles reproduce growth-dependent actions despite mounting evidence of their unsustainability. It uses insights, especially with regard to land use, as well as podcast interviews with key thinkers to transcend these lock-ins by embracing 'intentional unintentionality'. In so doing it deliberately reshapes one's own roles while acknowledging the non-linear, unpredictable effects on external systems. The transformative potential lies not in top-down control but in planning's capacity to generate alternatives from within; leveraging complexity to align with post-growth priorities.

Keywords:

Complexity, Luhmann, Roles in Planning, Post-Growth Planning, Systems Theory.

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1. Introduction

Uncertainty grows regarding future threats to society and space, while the competition for limited resources intensifies at global, regional, and local scales. Limits to growth have become more tangible in European countries. Besides geopolitical triggers and implications, this has given rise to a key question for spatial planning: How to keep or regain agency in a situation of resource scarcity, and especially with regard to land? This paper draws on post-growth planning and complexity thinking to carve out active roles in the socio-spatial puzzle: we perceive an age of loss, crises, and catastrophes, while Europe is historically and globally seen as rich in resources. After decades of growth, we perceive growing areas of scarcity: not enough resources, not enough energy, not enough land, not enough housing. A desire for more has reached its practical limits, while society, research, and policy increasingly emphasise the dreadful consequences of growth for long-term sustainability, climate change, and even social justice and democratic decision-making itself (Büchs et al., 2024; Dixon-Decleve et al., 2022; European Parliamentary Research Service [EPRS], 2023; Hickel & Hallegatte, 2022).

In spatial planning debates, we have witnessed deficiencies not only in bringing about transformative change on the ground but also with regard to understanding why such future trajectories have failed to convince and materialise. Have we locked ourselves in? This paper contends that an adapted inquiry is necessary. It goes beyond questions of political economy and redistribution and extends beyond widely shared approaches such as communicative planning and the sustainability transitions literature (Avelino et al., 2024; Healey, 2023; Suitner & Levin-Keitel, 2025). The search for conceptualisations of spatial planning beyond growth has become part of critical, future-oriented reflections on systemic change (Durrant et al., 2023; Durrant et al., 2025; Healey, 2024; Kaika et al., 2023; Savini, 2025; Savini et al., 2022; Xue, 2022a).

This paper focuses on a theoretical and conceptual perspective and abstracts from the often localised or case-study-based approaches to make concepts like post-growth tangible, for example, by connecting post-growth planning to goals such as net-zero land consumption or net-zero-emission scenarios (Lamker & Terfrüchte, 2024; Suitner & Levin-Keitel, 2025). Three observations function as anchoring points. First, we lose *time* due to growing crises and contradictions between the present, the past, and long-term societal future. Crises and challenges accelerate, while spatial structures only change slowly. Politics and society call for faster solutions while we worry about long-term societal and environmental futures, which often oppose quick fixes. Planning theory has only now begun to grapple with the reasons and limits of meaningful planning “in a world increasingly out-of-sync” (Jensen et al., 2025, p.197). Second, we lose the *certainty* in the search for seemingly known certainties from the past and today. Yet, it remains illusory to gain linear control over future developments (de Roo, 2018; Gunder & Hillier, 2009). Third, we lose *roles* due to a lack of new practical options for acting and being. Both post-growth planning and complexity theory seek emerging roles (Lamker & Schulze Dieckhoff, 2021; Rauws, 2017).

Since the mid-2000s, the turn towards complexity has enabled versatile insights to be gained into the possibilities and impossibilities of making decisions that have material and long-lasting impact within spatial planning (Chettiparamb, 2025; de Roo, 2018; de Roo & Silva, 2010; Innes & Booher, 2010; Rauws, 2017). Planning scholarship has introduced complex adaptive systems that are characterised by nonlinearity, emergence, and adaptive planning approaches. Complex adaptive systems are continuously evolving “towards an optimal ‘fit’ with their dynamic environment” (Rauws, 2017, p.33). Adaptive planning focuses on emergent qualities instead of linear approaches of control, or more immediately “influencing the possibility spaces for urban transformation” (Rauws, 2017, p.33). With other involved actors, they puzzle through problems “to put pieces together to create a shared picture of the future and a strategy for getting there” (Innes & Booher, 2010, p.9). The ability to do so diminishes rapidly amid the interplay of challenges such as climate change, sustainability, and fundamental growth-based criticisms. Environmental crises pose new and deep complexity challenges in which “sustainability could be perceived as the continuously changing space of alternatives or paths” (Skrimizea et al., 2019, p.130). The argument here is that it is not solved by blaming anyone for short-sightedness, inflexibility, or low willingness to change. A diversity of evolutionary potential is more important for the long-term viability of postgrowth pathways than a single predefined optimal outcome.

The question becomes: *How can planners (re-)gain agency in intentional transformative action?* Models are missing to either fully grasp this complexity or to build anchoring points for new actions and roles. There has been little engagement with the challenges that have arisen along the way, or the struggles *within* spatial

planning – though a transformation of planning itself would accompany social change towards post-growth futures (Xue, 2022b, p.405). Growth is rarely seen as a problem that directly opposes goals such as reducing greenhouse gas emissions, enhancing biodiversity, providing affordable housing, or fostering social justice. On the contrary, economic growth is regularly positioned as a requirement for meeting such goals, alongside identifying and developing additional uses of resources and land. This hope on trickle-down effects has been profoundly criticised elsewhere (Barry, 2020; Lamker, 2024; Rydin, 2025). For the sake of clarity, this paper does not further distinguish between post-growth and degrowth. It uses post-growth as a denominator of a joint criticism and possible future directions (in line with Durrant et al., 2023; Durrant et al., 2025). The foundation for understanding post-growth planning comprises a series of open engagements on the connections between post-growth and spatial planning in Germany, the Netherlands, and wider Europe between 2016 and 2025. They uncover obstacles and challenges for changing roles and practices towards a growth-independent spatial planning from the perspective of 29 key thinkers. These interviews are publicly available as an open-science product across 27 podcast episodes (www.postgrowthplanning.com).

This paper conceptualises spatial planning as the organisation of decisions about space through the production and reproduction of roles (Lamker & Marjanović, 2022). Complexity theory and systems theory, inspired by Niklas Luhmann, help us to understand why such efforts cannot be intentionally planned; however, they can still be unintentionally effective. In 1972, at the same time as the Club of Rome positioned the ‘Limits to Growth’ (Meadows et al., 1972), Luhmann recognised that the unexpected scarcity of both financial and material resources constitutes a systemic issue (Luhmann, 1972). This perspective provides a meaningful framework for interpreting the relationship that exists between a system and its environment in terms of alternative possibilities (Luhmann, 1972, p.188). This paper argues that perceptions of scarcity and limits to growth, particularly regarding land and the global consequences of expanding land use to foster economic growth, has led to increasing complexity in selecting the most desirable actions. A fruitful way forward is to increase reflexivity about what is real and what is to be realised. The conceptual exploration relies on reading original works by Niklas Luhmann from a planning perspective (Luhmann, 1972, 1977, 1983, 1987, 2006, 2018), the rare uses of his body of thought within planning scholarship (Duineveld et al., 2017; Lamker & Marjanović, 2022; Mäntysalo, 2016; Redepenning & Wilhelm, 2014; van Assche et al., 2013), and a critical reading of further role-based approaches in planning research (Frantzeskaki et al., 2016, 2016; Innes & Booher, 1999; Lamker, 2016, 2019a, 2019b; Moroni, 2020; Wittmayer et al., 2017).

With the aim of connecting post-growth planning to a complexity theory lens, this paper explores flawed self-images or false representations of expectations towards spatial planning as a major obstacle for spatial planners. A role-based conceptualisation offers the potential to break through lock-ins and, by understanding the impossibility of intentional transformation, to develop and enact *intentional* roles for a post-growth transformation, and to consider how ‘*intentional unintentional*’ transformation might be equally effective. To do so, the paper delves into the core question of sustainability from the perspective of limits and scarcity, the growth bias in spatial planning, and the challenges of overcoming it. Following this, sections three and four will work from uncertainty towards conceptualising spatial planning as the complex production and reproduction of roles. Section five will add the element of time by first thinking through the implications of seeing planning as intentional and unintentional, and then moving towards potential futures for spatial planning to come. Lastly, the conclusion will summarise a message for spatial planning that actively seeks its role in planning amid unknown outcomes: to reduce the desire to control, to move forward more effectively, and to exert influence on spatial futures.

2. Sustainability Challenges: Limits and Space

Sustainability has become one of the key goals for future-oriented action in society and within spatial planning since the late 1980s; in part furthered by the adoption of the Sustainable Development Goals (SDGs) at the global level in 2015. The connection to land as our common resource base and the limits of using more of it has been a key line of discussion for a long time (Owens & Cowell, 2002). More recently, the turn towards net-zero policies for land consumption has put a quantified limit, a final frontier that cannot be exceeded, of using land high on the political agenda throughout Europe (European Spatial Planning Observation Network [ESPON], 2024).

2.1 Limits: Sustainability and the Age of Scarcity

Reports from the Intergovernmental Panel on Climate Change (IPCC) and the Club of Rome's report 'Earth for All' began to recognise growth as a fundamental driver of global environmental and social crises (Dixon-Decleve et al., 2022; Intergovernmental Panel on Climate Change [IPCC], 2022). Reaching sustainability and climate change goals, but also tackling social inequalities, touches upon fundamental paradigms of a growth-oriented society and the ways in which spatial planning is nested within it (Büchs et al., 2024; Durrant et al., 2023; Hackworth, 2018; Savini et al., 2022; Schmid, 2022; Xue, 2022b). Alongside perceptions of multiple crises or a 'polycrisis', academic, societal and political debates have moved from the transformation of specified elements of a system towards wider system transformations that include fundamentally transforming the urban and spatial foundations of our existence (Allen et al., 2015; Kaika et al., 2023; Varvarousis et al., 2025).

Sustainability and questions of limits in relation to using land and non-renewable resources have been recognised as one of the most fundamental societal questions that need to be addressed (Dixon-Decleve et al., 2022; Owens & Cowell, 2002). In spatial planning, sustainability has moved to a core aim globally and within all European countries. This has also contributed to an increasing emphasis on policies for net-zero land consumption (Eichhorn et al., 2025; ESPON, 2024; Evers, 2025; Lacoere & Leinfelder, 2023; Lamker & Terfrüchte, 2024). However, despite decades of discussions, the relevance of sustainability transition debates seems to have even further increased, while actual successes in spatial planning lag behind (Suitner & Levin-Keitel, 2025). Seeking reasons for the same in a lack of discussion, a lack of awareness, or a lack of knowledge no longer convinces. More fundamental critiques have surfaced from post-growth planning debates. These debates challenge underlying systemic assumptions, the embeddedness of economic growth in policy, tools and instruments (Durrant et al., 2023; Durrant et al., 2025; Lamker & Terfrüchte, 2024; Verweij et al., 2025), and driving forces of capitalism that render reaching agreed sustainability targets impossible (Dixon-Decleve et al., 2022; Hickel & Hallegatte, 2022). Following this, sustainability can be seen as a prime example of a puzzle of complexity. Next to shortcomings in the shared picture of the future and a meaningful strategy to get there, the agency of spatial planners themselves gets blurry. Finally, even the meaning of the word sustainability might be challenged as an empty signifier (Gunder, 2006; Gunder & Hillier, 2009). Planning debates have concluded that large terms such as sustainability, as well as growth, remain open to diverse interpretations and uses. They serve as points of reference for questions about the long-term direction for spatial planning itself as well as for the wider spatial foundations of society and economy.

An emerging body of post-growth planning literature has criticised spatial planning for an inherent bias towards supporting growth, whether that be striving for economic growth directly, or through the growing use of land for settlements and infrastructures to foster economic growth (Durrant et al., 2023; Rydin, 2013, 2025; Savini, 2021; Savini et al., 2022). This puts into question issues of long-term sustainability from two directions. *First*, economic growth is linked to the use of natural resources, the emission of greenhouse gases, and often to globally extractivist and exploitative relationships between the Global North and Global South (Brand & Wissen, 2018; Kaika et al., 2023). Attempts at absolute decoupling have consistently failed, and relative decoupling can, at best, be seen in limited cases (Hickel & Kallis, 2020). *Second*, space for additional settlements and infrastructures is limited and contested. The possibilities for further extensions threaten remaining natural areas, conflict with climate adaptation measures, and may also endanger local and regional food production as well as food security in some places. Fostering land-based growth to deliver positive side effects is no longer a feasible strategy under such circumstances.

2.2 Space: Growth-Bias and the Final Frontier

The entanglement of spatial planning has a long history (Durrant et al., 2025; Greaves, 2024; Lamker, 2024). From the height of industrialisation at the turn of the 19th and 20th centuries, the profession institutionalised in multiple steps to cope with the most adverse effects of growth: public health and safety needed rules and infrastructures. Further into the 1920s onwards, spatial planning catered for organising growth by coordinating large-scale infrastructures, securing housing, urban expansions, open and green spaces, and the first regional approaches. This culminated in the development of extensive and comprehensive plans as well as the establishment of many European planning schools in the 1960s. Simultaneously, first engagements with computer technology led to engagement with systems and complexity; often in the search for linear ways to make better plans (Harris, 1989). In the absence of external growth drivers in a period of neoliberal

reforms in the 1990s, spatial planning moved towards actively fostering growth, especially economic growth, by engaging with global competitiveness, globalisation, connectivity, and nodes for exchange and economic activity – often losing the social baselines of development out of sight (Allen et al., 2015; Durrant et al., 2023). Positive spin-offs for welfare and social and environmental side-benefits, such as decent public spaces and housing, but also an increasing tax base, were envisioned through the application of planning instruments (Rydin, 2013). However, the positive relation from growth to assumed benefits that this growth delivers may not be as clear (e. g. for new housing developments vs infrastructure costs), side benefits cannot be secured and happen to be more randomly (e. g. new inhabitants versus local economic and retail structures), and it is evident throughout as to who has stated this need (i.e. the use of the passive voice, of the ‘is needed’ in proposals).

Against the background of the emerging recognition of growth-based or growth-fuelled crises, it has been suggested that spatial planning is biased towards growth. *More* is needed to achieve something good. However, this neglects adverse side effects of growth, hidden costs, distribution struggles, and structural constraints to make this noble hope real. Using the words of Patsy Healey, “environmentally-conscious social democratic future will not come about by itself. It needs to be struggled for [...]” (Healey, 2023, p.2303). Avoiding such struggles is also the essence of what this paper recognises as the reinforcement of the growth bias in spatial planning (Durrant et al., 2023; Lamker, 2024; Rydin, 2013, 2025). For example: more economic growth is needed (to generate jobs and taxes); more agricultural land needs to be used for housing (to make it affordable); more new housing is needed (to increase the tax base and to keep local economies running); new commercial and business land is needed (to enhance job and retail options for inhabitants); more material resources, such as rare earths, are needed now (to become climate neutral later); and more smart technology is needed (to use less energy).

While some relationships are evident, these examples show one commonality: growth is central and is the foundation to reach something else. Talking about the growth-bias does not take into question the goals themselves, which have been put into brackets in the examples. But what happens if ‘more’ is no longer possible or desirable in the first place? A final frontier opens as a fundamental uncertainty for spatial planning, one in which scarcity of material resources and scarcity of known agency might be a force which leads to reconstructing the boundaries between spatial planning and its environment as well as enabling new roles to emerge for planners.

3. Uncertainty: Complex Production and Reproduction of Roles

Dealing with uncertainty, that is, a perceived lack of knowledge for purposeful action, is a key essence of spatial planning (Abbott, 2005). To move forward, the renewed integration of complexity theory has been a fruitful endeavour for more than two decades (Chettiparamb, 2025; de Roo, 2018; de Roo & Silva, 2010; de Roo et al., 2020; Portugali, 2021; Sengupta et al., 2016). It allowed finding a vocabulary to deal with a dynamic world in a constant flow, one in which “systems are transforming, seeking a new balance and a good fit with their environment, [...] as a temporal manifestation of stability to which systems are attracted” (de Roo, 2018, p.9). Alongside this, systems thinking and concepts such as non-linearity, adaptivity, and emergence, have become more familiar within the development of planning theories and teaching planning theory courses in Europe (Chettiparamb, 2025; de Roo, 2018; de Roo et al., 2012, 2012; Moroni & Cozzolino, 2019; Rauws, 2017).

Looking towards the spatial planning discipline more specifically, what counts as spatial planning is continuously produced and reproduced within spatial planning, distinguishing the boundary to other activities (Lamker & Marjanović, 2022). This emergence, production and reproduction of the *spatial planning system* itself, in systems theory terms, happens through the actions and communications through which spatial planners enact recognisable roles to respond to perceived expectation; further discussed below. It is crucial to distinguish the person of a planner from hers/his potential and actual roles. Roles should not be mixed between spatial planning (as a system, or an ‘institutional technology’) and planners themselves (Moroni, 2020, p.570). They are contingent and can transcend back towards concrete persons who enact them (Luhmann, 1977, p.47). We recognise others in the roles they take and, in turn, which we may also take ourselves (Luhmann, 1983). While a person can only be one entity at a time, as recognised in actor-based approaches, a role-based approach allows each planner to potentially enact different roles over time, or even at the same time (Lamker, 2019b).

Transformative changes are likely to happen in a dynamic and non-linear way, in which new system qualities emerge in unpredictable ways. Transformative action in the sense of post-growth planning futures has an outside view towards the environment (Xue, 2022a), as well as an inside view towards spatial planning itself (Xue, 2022b). Using Luhmann's systems theory shifts the meaning of 'being' a planner: from an ontology of being to an epistemology of doing; from searching within a planner's personality to recognisable actions and communications; and from enclosed actors to recognisable roles. Roles are the patterns of these actions and communications; they are commonly observed together. Denominators describe roles, for example, as technical problem-solvers, moderators, strategic navigators, and explorers in Lamker (2016), or in the new roles of trend-spotters, matchmakers and facilitators of Rauws (2017). Roles are confined enough to be visible and distinguished from others. At the same time, they are open enough for use by different persons (Lamker, 2019b, p.203). Luhmann recognises that we can only talk about 'organised complexity' and not the reduction thereof (Luhmann, 1997, pp.430–431). Spatial planning can develop its own ways to cope with complexity and thus organise it, while complexity itself is not changed or even reduced. The production and reproduction of roles is a way to organise complexity, to develop the capacity to communicate, and to act within the spatial planning system. Planners adapt their roles to the complexity given, evaluate actions and observable consequences, and adjust subsequent actions accordingly (Lamker, 2019b). Their view of a suitable role, considering complexity, and their way to organise it, emerges and becomes more outspoken or outwritten. The ability to adapt to different roles and equally adapt those same roles enables reflective processes as well as the production of alternatives and their critique in structured procedures (Luhmann, 1983, p.50).

Building on these insights, and with Niklas Luhmann's systems theory in mind, complexity helps re-conceptualise spatial planning itself and the potential new system stability that it may purposefully seek. System change, here meaning fundamental *change within a system*, takes time when it faces fundamental uncertainties in different phases and at different scales (de Roo, 2018, p.16; Meadows, 2008; van Assche et al., 2013, p.7). This goes alongside contextual changes which influence the system from the outside. Organisations react to far-reaching uncertainties with adaptations that establish new perceived certainties – though these are at best "temporal manifestations of stability" (de Roo, 2018, p.9). In spatial planning, adapted modes of action or roles substitute previous ones. For a time, certainty is replaced by a (new) role that allows for this process to happen and enable what we call innovation (Luhmann, 2018, p.180). Implicitly, preceding roles move to the side and vanish. However, depending on the degrees of diversity allowed within the system itself, they might remain available for future use. Spatial planning can change from within by adapting roles in response to uncertainty. New communications and actions unfold, while stakeholders, organisations, or people may not change concurrently. Systems thinking searches for leverage points to exert influence in a system, from changes in the mode of operation towards transcending foundational paradigms (Meadows, 1999).

A system is produced and reproduced by differentiating its boundary from other systems (Luhmann, 2006). An 'autopoietic system', in which we include spatial planning as the "field of action and reflection with an interest in the organization of space" (van Assche et al., 2017, p.223), can only use its own operations to do so (Luhmann, 2018). Pragmatically speaking, spatial planning uses its own instruments and tools to act and distinguish itself from other systems, e.g., reacting to the need for affordable housing by searching for new land to build. The decision environment for spatial planners consists of a multiplicity of other systems that can include economic systema, political systema, and the inner psychological systems of everyone involved. All of these can be influenced by spatial planning but not fully understood from within spatial planning and its own terms (which are available for use to develop its own image of another system). From this perspective, a starting point is identifying *if* there is recognisable planning happening. If perceived contextual changes and planning actions happen at the same time or subsequently, we may see this as a positive co-occurrence. Being an observer, we then put a spotlight on "understanding the mechanisms and processes of the change that selfreferentially occur within selforganising system" (Chettiparamb, 2025, p.154). However, it is questionable whether others demand that planning happens as such. This, in turn, opens pathways for adaptation and change of *what* happens. For the next part, this raises the question: what is the self-image within spatial planning, and how far can we understand the expectations towards the discipline and profession?

4. Roles: Expectations and Mirror Images

This paper conceptualises how and why spatial planners follow growth logics often with good intentions or in unquestioned ways, to a degree that growth itself evolved to an empty signifier. For sustainability, growth, and other key terms in spatial planning, Gunder and Hillier (2009) have recognised how words get emptied of their meaning and become empty signifiers that unite a group of people, but are as close to a religious belief as concepts guiding normative action. Ultimately, due to a perceived inherent goodness, faking is more acceptable than opposing and engaging with flawed directions (Gunder, 2011). For example, spatial planners want to conform to expectations towards them, and especially so with regard to sustainability (Gunder & Hillier, 2004; Owens & Cowell, 2002). There is nothing problematic in this at first glance. It points towards a desire to distinguish spatial planning from other activities (in system terms) and the want to follow a strong motivation to be a good planner (in actor-related terms). However, planning remains highly dynamic, and expectations do not converge to unequivocal terms. Uncertainty remains a core condition of spatial planning, and is especially caused and accelerated by the impossibility of grasping expectations. This can be visible in the use of the passive voice where, for instance, “planning is tasked to provide space for economic activities”. No actor is named, and such a claim remains almost undisputable, as the origin of the task cannot be asked or included (Lamker, 2022).

Instead of blaming spatial planners or others, this paper disentangles the systemic processes that constantly fuel the image of a growth-oriented profession and render alternatives as niches or utopias. Regularly, spatial planning researchers and practitioners have more to say about why post-growth perspectives are *not* relevant (because it is out of fashion, unnecessary, exclusive, inappropriate, out of their responsibility) than what they could offer (Lamker & Schulze Dieckhoff, 2022). This approach is not adopted by pure intention, not imposed on spatial planners, and not a kind of individual mindset. Rather, growth is entrenched in the communication that produces and reproduces the spatial planning system itself. But how has such a lock-in happened?

The identified growth-bias in spatial planning is more an unintentional lock-in that has led to deeply nested routines and roles that are perceived suitable fits towards external expectations. This can be to deliver housing, to provide for renewable energies, or to respond to climate change and foster climate adaptation. Regularly, immediate responses move towards finding land for new demands (e.g., energy transition) or using land to induce demands (e.g., to boost economic growth). However, recognition also increases that growth is not a stable solution, and that planning may reach the end of growth and space or land (Lamker, 2024; Rydin, 2025). While economic growth can unfold in multiple ways, and we can and do even adjust how we measure indicators such as Gross Domestic Product (GDP), land is much less expandable and much more immediately connected to environmental and social change. In a podcast interview, Thomas Hartmann summarized this clearly: “post-growth planning is a question of land policy” (Hartmann & Lamker, 2023). The ongoing dialogue regarding net-zero objectives for land consumption represents the most significant intersection between land policy and post-growth planning that crosses multiple scales and connects to key legal planning instruments and tools in European countries.

Recognition and awareness alone can be necessary conditions for transformation, but they are not sufficient ones. What we recognise in a system (the spatial planning system) is communication and action. The roles of planners can be used to systematise what is available to spatial planning and to describe, conceptualise, and analyse spatial planning actions (Lamker, 2019a; Moroni, 2020; Othengrafen & Levin-Keitel, 2019). A role-based understanding helps disentangle how self-images and expectations align or misalign. *First*, each role means *a way of acting within planning itself*. For a postgrowth transformation, a broadened repertoire of roles could include inspirers and motivators (Lamker & Schulze Dieckhoff, 2021), but also explorers, leaders, and strategic navigators (Lamker, 2019b). They enhance the willingness to absorb increased uncertainty for the time of transformation, and support the need to transform planning from within so that, first, it may be at the forefront of wider change (Xue, 2022b, p.405).

Complexity theory highlights the impossible attempt to gain linear control over the environment. A Luhmann-based view from systems theory points to a fundamental concern: we can only understand other systems in our own. Pragmatically speaking, we build a mirror-image of the environment in our own system and in our own terms. When a role becomes enacted, it *relates to perceived expectations within spatial planning* (Lamker & Marjanović, 2022). They may not be actual expectations, or the only possible ways to meet them. Even if expectations are

outspoken or outwritten in clear language from other systems (e.g., politics), they do not hold certainty towards planning actions and enable an unequivocal certainty to use only one planning instrument. In Luhmann's words, "language use alone cannot assure this possibility" (Luhmann, 2006, p.48). Self-descriptions, including capitalism as a description for modern society, hold an ideological quality that reproduces itself (Luhmann, 2006, p.56). This paper follows a complementary approach to theoretical analyses that focus on the mismatch that exists between meaning and what can be symbolised in language or visuals from a psychoanalytical and linguistic lens (Gunder, 2003; Gunder & Hillier, 2009). Here, the same words are used in different systems, but they produce and reproduce system/environment boundaries instead of bridging them.

A *third* and final way reaches a step further. Other systems, like the political system, may have *overlaps in available roles* and a potential for a partial and temporary match (Lamker & Marjanović, 2022). For example, the role of a moderator would not differ in some of the core behavioural patterns such as discussing, moderating, and supporting (Lamker, 2019b, p.207). If it happens that two structurally coupled systems enact the same role at a given moment and a given place, they might find a sudden (unexpected, emergent) moment of alignment in which the border becomes porous and the system/environment boundaries are readjusted. Luhmann points to the way information makes a difference for a system, which would also be true for a planning system in the way this paper argues for: "Information is information only if it is not just an existing difference; it is information only if it instigates a change of state in the system" (Luhmann, 2006). This suggests that the search for a far-reaching transformation is both the quest for a transformation within, by producing new roles or adjusting existing roles, and the quest for those almost magical moments of alignment when suddenly something new emerges. This might get close to what Innes and Booher (1999) had in mind more than a decade ago when talking about role playing and "games without frontiers" to foster innovation and adaptive capacity: opening boundaries between unintentional and intentional thought and action.

5. Time: Being Intentional Unintentional

Scholars have observed hardship adjusting instruments and tools, inventing new ones, and enacting a divergent set of roles which move beyond growth, both in planning practice and planning research (Lamker & Schulze Dieckhoff, 2021, 2022; Xue, 2022b). At first sight, this leads to a demotivating picture about the potential of post-growth planning, and to deferring responsibilities to changes in other systems such as the economy or politics. Looking across podcast interviews, conversations ponder on the need for changes in political decision-making and the economic system in diverse ways – from refocusing on local and social economies (Yvonne Rydin, Stephen Leitheiser) to alternative economic models (John Barry, Vincent Liegey). However, the preceding section of this paper has shown, from a theoretical perspective, that we cannot be certain about the expectations of spatial planning, and whether they are unequivocal or not. From practice observations and research in Sweden, Dick Magnusson concludes a podcast interview with the hopeful message that "post-growth planning is possible" (Magnusson & Lamker, 2023). Central values to post-growth approaches such as staying within environmental limits, reducing material consumption, and fostering well-being, democracy, and social justice can easily connect to spatial planning and enable the (so far) missing dialogue (Xue, 2022b).

The translation of ambiguous goals and targets to space requires weighing of interests, negotiation, and the use of a whole box of planning instruments and tools which can be highly laden with growth (Durrant et al., 2023). Below the surface, expectations are translated into one's own understanding (one's own 'system' of spatial planning). Conforming to expectations becomes a two-step process of pre-thinking actions to conform to the mirror image as they have been internalised into spatial planning. In routinised and regular situations, experience has undoubtedly led to a relatively good of fit between expectations and subsequent planning actions. This fit and has stabilised the relationship between society and politics to spatial planning and ultimately spatial planning in relation to its environment. However, for more fundamental transformations that challenge routines and established modes of action, a lock-in occurs. What if the mirror-image of expectations is incomplete, flawed, or even false? Expectations themselves include new (potential) directions, and no translations to expectations are yet available. However, triggers for system change can only become relevant from within a system itself, when a system recognises triggers in its environment as relevant information (Duineveld et al., 2017, p.377), or if planning changes itself to be the vanguard of social change (Xue, 2022b). As a result, spatial planning would find difficulty in adjusting instruments and tools, inventing new ones, and enacting a diverse set of roles. Practically speaking, expectations translate to focusing on growth – whether they are explicitly naming it or not.

Post-growth is not yet institutionalised within spatial planning, and there is very limited *intentional* and explicit post-growth planning action visible. Moving towards post-growth planning entails fundamental transformations that challenge established roles and modes of action. No translations to expectations or derived roles are yet available and ready to use. Strong sustainability, climate change, and net zero targets have become established, but it is less clear what the expectations towards spatial planning are, or even more: at what time and with what timeframe. This means that external triggers are not yet widely recognised within the spatial planning system as relevant information that changes expectations and requires changed practices (Duineveld et al., 2017). Moreover, shifting goals have become integrated into established practices without yet opening up more systemically towards self-reflection, role reflection, and using processes to produce critique and alternatives from within (Luhmann, 1983). At the same time, our democratic and societally integrated spatial planning has evolved in a way that couples modestly well with previous expectations and even provides the illusion of control that sticks as a temporal manifestation and provides stability and certainty. Which external trigger can help overcome these kinds of lock-ins?

Moving further, this paper suggests turning the question how roles change upside down to recognise the potential to transform from within spatial planning towards growth-independent modes of action. Strong sustainability and net-zero directions have become common sense in policy across Europe, alongside recognition that spatial planning may even lag behind when it comes to materialising sustainability objectives (Suitner & Levin-Keitel, 2025). Such an observation can also provide more courage to move a step ahead and, in Luhmann's terms, produce system alternatives from within to enable comparisons – or even to see spatial planning as one of the processes needed to conceptualise alternatives in the first place (Luhmann, 1983). Complexity theory puts emphasis on *adaptivity* (Rauws & de Roo, 2016), while Luhmann's system approach emphasises the relevance of *reflexivity* to gain options for comparison (Luhmann, 1966). Even more, complex systems "are not just evolutionary by way of responding to external stimuli but are structurally self-organising by way of self-reference, that is, responding to its own feedback" (Chettiparamb, 2025, p.154). Changes and structural adjustments are possible within the system itself, and a complex system features some degree of freedom to self-organise in relation to its environment. Post-growth planning brings back *normativity* towards a future trajectory to emphasise the need for selectivity and subsequent action (Durrant et al., 2025), especially in a dynamic world in which the causes of our actions are not fully known and in which not every interest or desire can find its way into space. Ultimately, any specific use of land excludes many others, even with the most advanced approaches of mixing uses horizontally, vertically, or temporarily.

To sum up, we can control what we do ourselves (in our own system) but not the impacts this has (on other systems). Where does spatial planning then sit if only its own actions and communications can be intentionally planned? An effective way forward in a post-growth transformation might be to conceptualise the trajectory as *intentional or unintentional*. Intentional towards the changes within spatial planning over which direct control can be exerted, and unintentional towards other systems over which direct control is impossible. Influence then unfolds in non-linear ways, and leads to emergent and adaptive responses. At best, we can reach temporary stabilisations and temporarily enhance the coupling between external expectations and planning actions, while knowing that any planning remains preliminary in the long run.

The puzzle raises the question of how to act amid such fundamental uncertainty and seize agency despite knowing that we have no certainty about the consequences. Luhmann recognised a key responsibility of organisational members that "one must avoid being disturbed by oneself" (Luhmann, 2018, p.64). He offers a perspective to engage in different behavioural patterns or roles. From a systems perspective, this does not feel like a conflict with oneself if we recognise professional demands as more than mere obedience. Put differently, the spatial planning system, in systems-theory terms, has degrees of freedom within itself. This is mirrored in the planning ethics of professional bodies that seek ways to support a responsible use of discretion by spatial planning professionals. It also leads to an unexpected conclusion from a seemingly neutral systems perspective: spatial planning is a highly political activity, and it must be so. By reducing the ambition to exert control, the window of opportunity to exert real influence is more likely to open.

6. Conclusion: to boldly plan...

The history of spatial planning has shown that growth, in terms of both economic growth and the expansion of land use for settlements and infrastructure, is not always the primary focus by conscious intent. Rather, the opposite is true: the core of spatial planning has focused on concerns such as public health, decent living conditions, basic societal infrastructure, and so on (Lamker, 2024). Those were bold aims against the massive forces of industrialisation in Europe. Today, there is good evidence that most spatial planners want to be a positive force in society, though change may be slow and tending towards formalisation instead of transformation (Nelson & Neil, 2021; Othengrafen & Levin-Keitel, 2019).

A future beyond growth dependence remains both hard to imagine and practice (Lamker & Schulze Dieckhoff, 2022). Developing on 'new land' (the classic blank sheet) remains attractive for implementing new and innovative ideas. But the planning discipline has also incorporated multiple directions and associated roles that work within existing built environments and put other priorities up front (e.g., urban renewal, infill developments, densification, climate adaptation, and energy transition). The desire for growth is often coupled with other priorities, but growth may take a back seat in the reality of changing the built environment. Processes of spatial change operate through a dynamic, non-linear process with multiple ideas, intentions, and both own and mirrored expectations. While spatial planners may also have personal motivations, such as securing their jobs and advancing their careers, there is little evidence that they are attracted to growth per se.

This paper has sought to disentangle what it means to change roles towards growth and independence, and to argue that such transformation is not linear but requires the search for a new alignment of roles *within* planning, notwithstanding the need for a responsive environment outside of planning. It has outlined contemporary perceptions of sustainability and growth-based crises from a spatial planning perspective. A role-based approach anchored in systems theory and complexity theory, and drawing especially on the works of Niklas Luhmann, has helped conceptualise how roles, expectations, and mirror images influence what happens within spatial planning and how much (or how little) intentional steering is possible. Using this perspective, the paper calls for understanding inherent limitations and turning to oneself to be more intentional and unintentional: to embrace the non-linear relationships between action within spatial planning and effect in other systems and the built environment. Adaptivity, reflexivity, and normativity are thus core elements for connecting post-growth planning and complexity scholarship and for leveraging influence from this encounter. Lastly, such considerations call into question the need to view spatial planning as a political activity full of impossibilities, but rather as one with a multiplicity of options and available roles for action.

Post-growth planning futures stress the crucial importance of key human needs and desires while recognising limits in available resources and the negative consequences of growth logics here and elsewhere; now and in the long-term future. With post-growth planning and other future trajectories under discussion, spatial planning continues to seek new (temporary) couplings with other systems, such as the economy, politics, and psychology. This paper has acknowledged that only our own communications and actions can be intentionally planned. What sounds like a constraint should be a liberating message to engage in democratic public deliberations and to make clear decisions: we can control what we do ourselves (in our own spatial planning system). Thus, spatial planning is both the subject and the object of transformation and offers much, especially when driven by societal changes, priorities, and expectations. Complexity theory has opened pathways to uncertainty, nonlinearity, and emergence, enabling impact without intent. Post-growth planning and complexity theory are fruitful encounters if we internalise them within spatial planning in adaptive, reflexive, and normative ways. Reducing the desire to control others opens doors to move more effectively toward exerting influence over how spatial futures shape us and get shaped by us.

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