Leading co-creation for the green shift

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Introduction

In response to pressing problems, scientific warnings and popular demands, European cities are formulating highly ambitious climate mitigation goals. Berlin aims to cut CO_2 emission by 60% by 2030. Copenhagen wants to be carbon-neutral by 2025. And Oslo is aiming for a 95% reduction of greenhouse gas emissions by 2030. Meeting these goals requires the profound transformation of social and economic systems and the daily behaviour of millions of inhabitants. Much-needed transformations include the development of a new non-fossil energy and transport sector, creating low-carbon circular economies and adopting new forms of sustainable living in smart, compact cities. To bring about the disruptive change required to solve the climate crisis, we need innovative solutions created through collaborative governance. No single public or private actor has the knowledge, resources and creativity to singlehandedly produce and implement the disruptive solutions that help to ensure a sustainable future. Hence, the task is to bring together elected politicians, public managers, researchers, business actors, civil society organisations and citizens in the co-creation of innovative, yet feasible, climate solutions.

Co-creation is shorthand for collaborative innovation, since the basic idea is to involve relevant and affected actors in collaborative processes that spur knowledge-sharing, mutual learning, design and testing of prototypes, and coordinated implementation of innovative solutions (Torfing, 2016). Many cities and

national governments call for the co-creation of innovative climate solutions. The European Commission (2020) seeks to involve citizens and stakeholders in the co-design, co-implementation and co-evaluation of climate resilience. Even the United Nations (2015) claims that the global Sustainable Development Goals are best achieved through partnerships, networks and other collaborative co-creation platforms. Despite the problems with securing broad-based participation, the risk of conflict and interest group capture, and the danger of fragmenting public governance, co-creation has become the new fad and fashion, mainly due to its ability to mobilize societal resources, spur creative problem-solving, share the risks of innovating, and build joint ownership to new, bold solutions (Ansell & Torfing, 2021).

This all sounds very good, except for the fact that the effort to lead co-creation for the green shift has thus far received scant attention from researchers and practitioners (but see Hofstad & Vedeld, 2021). The last thirty years or so, public managers have been told to lead and manage their own organizations and employees by combining transactional and transformational leadership to achieve a set of predetermined goals within the given budget (Jensen et al., 2019). This kind of top-down, performance-enhancing leadership is unsuitable when it comes to leading co-creation that calls on leaders to lead cross-boundary collaboration between broad sets of public and private actors in ways that facilitate the emergence of new, hitherto undiscovered solutions. To understand what leading and managing the co-creation of climate solutions takes, we draw on central insights from theories of network management (Klijn & Koppenjan, 2015; Klijn et al., 2010) and collaborative governance (Emerson & Nabatchi, 2015; Morse, 2008). However, this article approaches the question of how to lead processes of collaborative innovation through an exploration of the distinctive qualities of co-creation to generate new understanding of what co-creation leadership entails. Hence, we ask: How can key insights into the main characteristics of co-creation as a mode of governance put public managers on track to understanding how to lead co-creation for the green shift?

To answer this question, we begin by describing the transition from hierarchical government, via collaborative governance, to co-creation as a governance tool. We then show why co-creation provides a promising strategy for producing the innovative solutions needed to reach the ambitious climate goals of major European cities. Next, we aim to capture the defining features of co-creation and sketch the contours of a particular form of co-creation leadership. The subsequent discussion provides some illustrative examples of co-creation leadership from the green shift in Copenhagen and Oslo. The conclusion reflects on the conditions for promoting co-creation leadership in European local governments and points out some future research avenues.

From hierarchical government, via collaborative governance, to co-creation

In the post-war era, the public sector expanded to solve an increasing amount of relatively simple problems in fields such as education, health and social welfare through the provision of public services and social insurance benefits. The creation of bureaucratic organizations ensured the uniform implementation of large-scale public welfare programmes. In the 1970s, it dawned on most policymakers that the public sector also faces a growing number of wicked problems in fields such as planning, infrastructure and environmental protection (Webber & Rittel, 1973). These complex problems were not easily solved through hierarchical decision-making and implementation based on command and control; rather, they required coordination and collaboration across multiple agencies and with a broad range of private stakeholders with different interests, ideas and forms of expertise. This new recognition tended to open up the public sector through the formation of policy and governance networks and, somewhat later, the creation of

public–private partnerships (Klijn & Teisman, 2003). The rise of collaborative governance in networks and partnerships was driven by the growing appreciation of the mutual dependency between public and private actors and the limited reach of public agencies, which often struggle to affect processes and outcomes in the economy and civil society, where the public sector plays a limited role. Hence, a public agency aiming to promote sustainable forestry would have to involve the private stakeholders who own, live off or use the forest and seek to align the actors around a common set of goals and strategies.

While the theories of network governance expanded the range of participants compared to the earlier theories of corporatism, collaborative governance aimed to facilitate the democratic participation of civil society actors in public governance (Newman et al., 2004). Typically, however, public agencies were seen as the primary convener and facilitator of collaborative governance, and the focus was on the alignment and coordination of public and private actors around a common set of objectives that are central to public governance (Ansell & Gash, 2008). More recently, collaborative governance has developed a new branch of 'co-creation', defined as the involvement of relevant and affected actors in defining common problems and designing and implementing creative solutions (Torfing et al., 2019). Compared to the parent concept of collaborative governance, co-creation tends to be a more distributed process with a distributed leadership where 'no one in control', thus opening up for its co-initiation (Sørensen and Torfing, 2018). While collaborative governance tends to involve public agencies and private stakeholders in interorganizational networks, co-creation aims to engage public agencies, organized stakeholders together with lay actors (e.g. users, citizens, neighbourhoods) in creative problem-solving. Finally, the goals of this broad involvement of relevant and affected actors are not merely to achieve some well-defined public governance objectives through the exchange and pooling of resources to produce collaborative advantage (Huxham & Vangen, 2013), but rather to explore common problems and produce innovative solutions leading to public value outcomes. Hence, co-creation tends to infuse collaborative governance with a dose of social entrepreneurship and social innovation (Phillips et al., 2015). That said, the distinction between collaborative governance and co-creation is not a difference in kind but in degree.

The co-creation concept has roots in private business management and economics, where service producers and product designers began perceiving their customers as partners in joint value creation (Grönroos, 2012; Prahalad & Ramaswamy, 2004). The public sector has grown increasingly interested in service co-production that allows service users and providers to collaborate while using their respective skills, competences and experiences to improve service quality (Alford, 2009; Bovaird & Loeffler, 2016; Brandsen & Honingh, 2016; Ostrom, 1999). Over time, however, the scope of co-production has expanded from discrete services to entire service systems, public planning and more generally public problem-solving (Osborne & Strokosch, 2013). At the same time, the range of actors has expanded to include relevant and affected actors capable of contributing to innovative problem-solving (Ansell & Torfing, 2021). To avoid concept stretching, these expanded forms of co-creation are increasingly referred to as co-creation.

Three main factors have contributed to the rise of co-creation in the public sector (Torfing, 2019). First, the educational and anti-authoritarian revolution, combined with positive experiences with participation, have made citizens increasingly competent, critical and assertive (Dalton & Wetzel, 2014), and many of them want to be more actively and directly involved in making and carrying out decisions that affect their lives. Second, cash-strapped public organizations must mobilize societal resources to make ends meet in times where expectations to public services are increasing while public money remains scarce. Finally, public organizations must build common ownership to new, bold solutions to maintain the legitimacy of the public sector and restore trust in public organizations.

Co-creating the green shift

Adopted in 2015, the Paris Agreement is a legally binding international treaty aiming to limit global warming to well below 2, preferably no more than 1.5 degrees Celsius, compared to pre-industrial levels. The treaty represents the result of years of international negotiations in the face of increasingly gloomy reports from the International Panel on Climate Change that have documented the devastating effects of global warming on socio-economic development, human health, migration and displacement, food security and land and marine ecosystems. The Paris Agreement is about human and planetary survival and has prompted government action in countries around the world. However, since it relies on voluntary state compliance with the standards and obligations, the level of government action varies, to say the least. Where national governments have been reluctant to up their game, cities have taken a leading role in spearheading climate action. Cities were already actively engaged in climate change mitigation prior to Paris (Betsill & Bulkeley, 2003, 2007), but the agreement and growing problems with heat waves, wildfires, rising sea levels, torrential rain and water shortages seem to have given the urban climate mitigation efforts new momentum. Recent research shows that technology-oriented interventions in the urban waste, transport and energy sectors have the highest marginal abatement potential (Sethi et al., 2020), but these low-hanging fruits are insufficient to reach the ambitious climate mitigation goals of frontrunner cities such as Berlin, Copenhagen and Oslo.

The current challenge is that many cities are struggling to produce much-needed innovative solutions to reach their ambitious climate mitigation goals. The focus in many cities thus far has been on reducing fossil fuel use in energy production and transport by applying well-known technologies (scope 2). However, as soon as the focus shifts to transforming the economic system of production and consumption and building low-energy cities that support sustainable living (scope 3), the need for creative problem-solving and innovation will increase, as there are few well-tested solutions.

At the same time, it is important to muster broad-based support for the green shift that will tend to disrupt how we live, work and consume and avoid the development of a climate policy backlash as what we saw with the French 'yellow vests'. To do so, the formulation of the urban climate mitigation strategies must be inclusive and participatory, and they must facilitate the balancing of sustainability goals with social justice.

'Participation + innovation' is a good match, since when it comes to designing, testing and implementing innovative climate solutions, both the technical solutions and the more economic, social and cultural transformations require the involvement of a broad range of public and private actors, including citizens, neighbourhoods and civil society actors. New research has shown that all phases in the innovation process are strengthened by multi-actor collaboration (Bommert, 2010; Hartley, 2005; Torfing, 2016). Hence, bringing together a diverse set of public and private actors with different innovation assets such as experience, knowledge, creativity, courage, stamina, authority and financial means facilitates the definition of common problems, spurs mutual learning and creative problem-solving, enables the design and testing of prototypes, and secures coordinated implementation and co-evaluation of results.

In sum, climate solution co-creation is called for because we must: 1) produce innovative solutions that disrupt common wisdom and established practices and 2) secure input to and support for innovative solutions from local citizens, neighbourhoods and other lay actors. In line with this argument, Sørensen and Torfing (2020) find that co-creation offers a near-perfect strategy for achieving ambitious urban climate goals, but that institutional, political and discursive barriers may in practice discourage co-creation or reduce it to the collaborative involvement of a professional stakeholder organization in the policy formulation phase. This new research also hypothesizes that 'co-creation may grow in volume and

importance when the technical quick-fix solutions to emissions reductions are exhausted and local governments begin addressing the question of how they can get citizens to change their consumption and transport patterns in a more climate-friendly direction' (2020, p. 14).

How to lead and manage co-creation

Co-creation of the green shift is not only a good idea because of the need to involve competent and resourceful actors in producing innovative climate solutions that enjoy widespread support; it is also prompted by how we must solve the climate crisis in a shared-power world where power is distributed across levels, sectors and organizations (Bryson & Crosby, 2005). Co-creation brings distributed actors together in a collaborative and creative process to create something new. Now, if co-creation is an attempt to create joint solutions through collaboration between distributed actors, each with their own rule and resource base, leadership might be challenging; however, we insist that co-creation leadership is both necessary and possible.

Co-creation leadership is leadership in the generic sense of attempting to achieve results through or with other actors. It is more 'leadership' than 'management', as it involves engaging, inspiring and motivating actors, facilitating and giving direction to interactive processes and, finally, ensuring progress towards problem-solving and public value production (Bryson et al., 2021). Co-creation leadership is distinguished from other leadership types in that it aspires to lead processes of collaborative innovation aiming to produce public value rather than employees aiming to apply rules to obtain pre-determined outcomes. The crux of our argument is that we must pay attention to specific characteristics of co-creation to understand how it can be advanced through leadership. Drawing on recent research, we identify five key characteristics of co-creation, all of which contribute to conditioning and shaping the exercise of co-creation leadership:

1. Co-creation is characterized by being *problem-driven rather than goal-driven* (Ansell & Torfing, 2021; Skålén et al., 2018). While public authorities may spur co-creation to fulfil politically defined goals, co-creation is typically driven by the endeavour to solve problems shared by diverse groups of actors, either because they are formally responsible for solving said problems (public actors), directly or indirectly affected by them (lay-actors), somehow interested in solving the problems for practical or idealistic reasons (organized stakeholders), or known to be able to contribute valuable resources (experts). The participating actors tend to recognize the need to come together and share knowledge and mobilize their various resources to tackle and eventually solve the problem.

2. Unlike the traditional linear chain of delegation and control linking voters to elected assemblies, government officials and public administrators delivering service to clients, co-creation is an *interactive, dynamic and fluid process* (Cluley & Radnor, 2020) involving a plethora of public and private actors in producing solutions and creating value. Co-creation exceeds the dyadic relation in service co-production, as it involves distributed actors, tools and practices in an assemblage of heterogeneous elements that create relatively coherent processes that function as a way of governing (Newman & Clarke, 2009, p. 19).

3. Unlike some forms of deliberative democracy unfolding in citizen juries and mini-publics, co-creation seeks to combine deliberation with action, thus being both *talk-centric and action-centric* (Crosby et al., 2017). Actors are involved in deliberation and seek to foster agreement about the nature of the problem at hand, the goals to be pursued and main features of the solution that they are designing. It is not all talk, however, since co-creation – drawing on elements of design thinking

– aims to develop and test small-scale prototypes before revising them until the point where they work well and are ready for upscaling and perhaps even diffusion (Bason, 2010).

4. While collaborative governance in networks and partnerships sometimes involves extensive negotiations and bargaining to foster agreement and compromise between public and private actors with different interests, co-creation aims to make room for mutual, expansive and transformative learning (Torfing, 2016) that questions conventional wisdoms and tried-and-true solutions, facilitating the emergence of new thinking about problems and solutions and new, collective-intelligence-based ways of doing things. Although vested socioeconomic interests may block creative problem-solving, there is a drive towards the *learning-based emergence of innovative solutions*.

5. Contrary to the assertions in the original formulation of public value management (Moore, 1995), co-creation involves networks of interdependent yet relatively autonomous actors from the state, market and civil society in the production of public value, defined as what has value for the public and is valued by publics (Crosby et al., 2017; Stoker, 2006). According to Osborne (2018), it is not the individual public or private actors, but their *interaction that is the locus of public value creation*. For public services, regulations and acts of governance to acquire public value, the actors engaged in co-creation must invest their different experiences, motives and ideas in the creative process through which new solutions emerge. The actors must align their different value propositions and negotiate what counts as valuable for society and particular groups of individuals (Bryson et al., 2021).

Having thus distilled the main characteristics of co-creation, we shall now see how these characteristics condition and shape co-creation leadership. In other words, we ask ourselves how co-creation leaders can and must respond to these core aspects of co-creation.

Leading *problem-driven co-creation* processes aimed at bringing together relevant and affected actors who together can crack problems that none of them can solve on their own initially requires careful stakeholder analysis to identify key stakeholders. It is critically important to involve both stakeholders with an interest in solving particular problems (the affected actors) and those with the power to solve them (the relevant actors) (Bryson et al., 2002). Neither the willing nor the powerful actors can solve complex problems singlehandedly.

The next step for co-creation leaders is to convene the relevant and affected actors by emphasizing the urgency of the problem, the opportunities for solving it, and the support from relevant sponsors and champions (Bryson et al., 2015). Convening collaboration may involve issuing a formal mandate or creating persuasive storylines that hail the actors as indispensable to the joint problem-solving process.

Last, yet importantly, the co-creation leadership involves the construction of collaborative platforms and arenas that can help to ensure sustained (but flexible) engagement in co-creation (Ansell & Gash, 2017). Platforms and arenas are both generative mechanisms, facilitating and supporting the emergence of co-creation processes by lowering the collaboration-related transaction costs. Platforms are relatively permanent infrastructures that provide digital and/or physical opportunities for the contingent construction, adaptation and multiplication of collaborative arenas. Arenas are temporary, purpose-built institutionalizations of interaction that comprise mixtures of resources, rules, norms and procedures that both shape and are shaped by actual collaborative processes. A platform may generate multiple arenas for

co-creation. The formation of platforms and arenas involves the use of institutional design to support co-creation (Fung, 2003; Sørensen & Torfing, 2019).

Leading *interactive, dynamic and fluid co-creation processes* is challenging, because the actors are heterogeneous and bring with them different experiences, ideas, norms, values and interests, and they prefer different tools and practices. While innovation thrives on the heterogeneity of the actors that helps to avoid tunnel vision and to see things from different sides, fostering collaboration between a diversity of actors is difficult and requires deliberate effort to build trust, defined as the willingness to be vulnerable based on the positive expectation that other actors will refrain from exploiting opportunities to produce one-sided benefits. Trust may be promoted through informal social interaction or by creating a solidarity frame by means of signalling that all of the different actors depend on each other, should respect and help each other, be honest about their competences, and take responsibility for their actions (Six et al., 2010). Regular evaluation of the interaction and transparency of the ground rules may also augment trust.

Since trust is always limited and breaches of trust are possible, interpersonal conflicts are likely. Actors may disagree on the precise nature of the problem and the appropriateness and efficacy of potential solutions; or they may blame each other for mishaps, lack of engagement or opportunistic action. To avoid conflicts becoming destructive and creating stalemates, co-creation leaders must engage in conflict mediation that seeks to constructively manage differences between the participating actors, thus establishing common ground for joint problem-solving (Gray, 1989). A constructive management of differences may help clarify arguments, ideas and preferences and ultimately find solutions that are acceptable to all parties.

Finally, conflicts may be prevented if co-creation leaders engage in boundary-spanning aimed at empathically bridging, mediating and translating between actors from different groups, organizations and sectors, each with their distinct culture, discourse and vocabulary (Meerkerk & Edelenbos, 2018; Williams, 2002). Boundary-spanning tactics may include: creating neutral space for interpersonal rather than identity group-based social interaction; reframing ideas, resources and values as part of common, high-order discourse; giving sub-groups of actors roles, tasks and assignments that are nested within the overall mission of the co-creation process; and weaving together different values, norms and narratives across boundaries to facilitate collaboration and innovation (Ernst & Yip, 2009).

Bearing in mind that co-creation is both *talk-centric and action-centric*, co-creation leaders should make a point of not merely organizing a series of sit-and-talk meetings, whether in small groups or plenary sessions. Co-creation involves doing things to solve pressing problems, and this crucial aspect must be accommodated by co-creation leaders who must plan activities such as fact-finding missions, inspirational excursions, problem-solving workshops etc. that have the advantage of speaking to participants who are not trained to participate in meetings and engage in reasoned debate, but may be good at testing new ideas in practice.

In the early phase of co-creation, co-creation leaders may want to engage users, neighbourhoods and other affected actors in mapping and assessing the problem at hand and unearthing the needs behind the demands. Stickdorn et al. (2018) provide an excellent overview of the helpful tools from design thinking, such as user journey maps, service blueprints and value network maps. They also provide an overview of tools for identifying relevant stakeholders based on an ecosystem perspective.

When the activities aiming to define the problem and identify needs are completed, co-creation managers must find ways of promoting rapid learning through collaborative engagement with the problem at hand and with the aim of creating synergistic solutions out of diversity (Heifetz et al., 2009). Again, drawing on design thinking, the co-creation of innovative solutions may be supported by the development and testing

of prototypes aimed at making the future real and tangible and to provide boundary objects that the co-creation participants can jointly observe, assess and work upon in iterative rounds of design, testing and revision (Bason, 2010). By providing open access to public data records, co-creation leaders may invite public and private actors to collaborate in the designing and testing of new solutions (Nambisan & Nambisan, 2013).

Co-creation aims to facilitate the *learning-based emergence of innovative solutions.* This is a tall order, since most peopled are driven by entrenched norms and habits, and many have vested interests in preserving the status quo. Actors with a history of collaboration may have developed tunnel vision that prevents them from envisioning new options and opportunities (Skilton & Dooley, 2010). Hence, co-creation leaders must act as catalysts for out-of-the-box thinking (Ansell & Gash, 2012) by means of creating an appropriate disturbance of the participating actors, for instance, by bringing on board new and different kinds of actors, commissioning reports that bring new knowledge into play, or placing the actors and staging the process in a new environment that may spur innovation (Hajer, 2005).

Since co-creation processes aiming to facilitate the emergence of new goals, ideas and solutions cannot really be evaluated through the classical procedures of formative and summative evaluation aimed at checking whether predetermined milestones are reached and predefined goals achieved, co-creation leaders may instead make use of developmental evaluation (Patton, 2011). Developmental evaluation insists on constantly asking critical, evaluative questions: Is the problem understood well? Are the goals appropriate and realistic? Will the proposed solution work in practice? Is the problem really solved? And how reliable is the knowledge upon which we base our decisions? To promote developmental evaluation, co-creation leaders may use appreciative enquiry, wicked questions, force field analysis, actual-ideal comparisons, outcome mapping etc. The context will determine the selection of the tool to use, and any tool that secures rapid data collection, critical scrutiny and rapid feedback will do.

Catalysing mutual learning processes and spurring innovation will eventually create growing concerns for the risks associated with innovation. Things might not go as planned, and new, innovative solutions might produce unforeseen, negative externalities. Hence, co-creation leaders must engage in risk management that may involve attempting to mitigate risks, creating schemes for risk sharing, developing contingency plans and building resilience. A key challenge for co-creation leaders is to avoid the participating actors focusing one-sidedly on the negative risks without taking into account the benefits that the innovative solutions may produce if successful (Osborne & Brown, 2011; Renn, 2008).

The last of the five core characteristics of co-creation is that the *interaction between manifold actors is the very locus of public value creation*. According to Page et al. (2015), public value is created when 'cross-sector collaboration achieves its overarching and subsidiary purposes, meets applicable mandates, and achieves lasting and widespread benefits at reasonable cost that no single organization could have achieved alone in a democratically accountable way' (p. 716). Hence, co-creation leaders must seek to mobilize groups of actors, who together possess the resources and capacities required to 'square the circle' by *democratically* and *transparently* producing innovative, effective, low-cost solutions. Mobilizing actors to participate in co-creation must consider the different motivations for engaging in joint problem-solving (e.g. self-interest, altruism, hedonist motives) and the demand for clarity regarding the workload, timeframe and ground rules (Ansell & Torfing, 2021). The transparent and flexible involvement of different actors in different stages of the process may also help bring reluctant actors on board (Straus, 2002).

The actors who are persuaded to participate in co-creation will have different ideas about the public value resulting from the collaborative endeavour. Co-creation leaders are therefore called upon to facilitate

alignment through a purposeful and flexible formation of alliances (Bryson et al., 2021). Bryson et al. (2002) suggest that co-creation leaders start by identifying the different value propositions articulated by each of the core actors and mapping the relationships between them. Such mapping enables the identification of overlapping value propositions and the prospect for an integrative reframing to produce an overarching storyline that can garner support across a wider spectrum of actors.

Unifying diverse groups of actors around the ambition to produce public value outcomes is one thing; actually realizing this ambition is another. Collaborative processes take time, and the initial enthusiasm often wanes. Co-creation leaders can help to maintain the collaborative spirit by stimulating the production of small wins that quickly make change real (Amabile & Kramer, 2011; Bryson, 1988). Further down the line, they must advocate for the creation of a joint system for tracking results and documenting public value outcomes to facilitate scrutiny by external actors, secure legitimacy and generate continued support from financial sponsors (Bryson & Crosby, 2010).

Having thus translated the core characteristics of co-creation into a list of tasks for co-creation leaders, we must be clear about who these co-creation leaders really are. The answer to this pertinent question is that it varies. Leadership in co-creation processes is distributed in the sense that public managers, public employees, NGOs, volunteer coordinators, commercial enterprises, social entrepreneurs, or even citizen groups can either be allocated or assume particular leadership responsibilities. That said, public actors are often key in leading the distributed leaders based on pluricentric coordination. Distributed leaders are typically leading by facilitating high-intensity communication that ensures critical input from followers. Hence, distributional leadership is ultimately interactional and produced in processes where the participants are all, to some extent and in different situations, both leaders and followers (Bolden, 2011; Spillane, 2005). Distributed leadership is advantageous in that it tends to enhance the overall leadership capacity, but the risk is that leadership becomes somewhat diffuse and that no one is ready to take the final responsibility when things go wrong. This problem may be solved by the exercise of metagovernance (Sørensen & Torfing, 2009), whereby a group of key actors in the collaborative network assumes the overall responsibility for ensuring that core leadership tasks are taken care of by competent, engaged actors.

New research and formal, experiential leadership training will gradually get public leaders and competent and resourceful actors from the for-profit and non-profit sectors on track with the exercise of co-creation leadership for the green shift and other complex policy issues. Even when equipped with state-of-the-art knowledge and tools, however, co-creation leadership is extremely challenging. At minimum, four obvious barriers tend to hamper its exercise. First, co-creation leaders must lead actors from other organizations, sectors and levels over which they have no formal authority. Hence, they can only use soft power (Nye, 2008) and must constantly seek authorization of their leadership role by proving their worth to their followers. Second, the co-creation processes that they are leading are highly complex, and it can be difficult to get the sufficient, in-time leadership information about emerging problems and conflicts that require leadership attention. Third, there are many co-creation leaders who may not be heading in the same direction if the collective leadership endeavour is not sufficiently coordinated. Finally, the goals and solutions may change several times in co-creation processes, which makes it difficult for co-creation leaders to direct collaboration processes.

The last caveat is that co-creation leaders working in traditional bureaucratic agencies will also have to engage in constructive hybridization aiming to combine co-creation leadership with other forms of leadership found in their organization. Hence, co-creation leaders will have to use more traditional forms of strategic, transactional and transformational leadership within their own organization and find ways of combining these forms of leadership with co-creation leadership. The combination of different leadership

styles can generate conflicts, dilemmas and paradoxes with which co-creation leaders must cope (Lewis & Smith, 2014; Poole & van de Ven, 1989).

Co-creation leadership in practice

Co-creation leadership is essential to the attempt to achieve the ambitious climate goals in European cities that seek to bring together relevant and affected actors in collaborative processes aiming to spur innovation. Based on an analysis of the core characteristics of co-creation, we have developed a list of co-creation leadership tasks. While testing the efficiency of the different items on the list is beyond the scope of this article, we would like to show how some of the co-creation leadership tasks may be carried out in real life by examining a handful of empirical illustrations drawn from a Scandinavian climate governance project.

Firstly, the City of Oslo's *'Business for Climate Network'* illustrates how the city government goes about mobilizing relevant and concerned business actors through a platform for joint problem-solving and enhanced implementation capacity aimed at the green transition and reaching the city's ambitious climate goals. Close to 150 businesses in the Oslo region are members of the network. The following quote from a senior administrative network staff manager illustrates the underlying rationale: 'If we are to achieve the climate goals, we must continuously demand more from the Oslo companies'. Hence, it is pre-understood that changing the business model of private firms is indispensable to achieving the goals. To unleash the potential of co-creation and ensure genuine commitment among key business actors, the City of Oslo uses its convening power to construct a coalition of the willing business actors and subsequently aiming to facilitate joint knowledge sharing, mutual learning and policy-related discussions. The Climate Agency has created the platform and shaped its ground rules. It has even designed a special ceremony for each new member, whereby the CEO and Vice-Mayor for Environment and Transport solemnly signed a climate compact between the city and the private company. By signing this compact, the signatories are individually and collectively expressing their willingness to contribute to attaining Oslo's climate goals and ensuring the anchorage of the climate agenda in self-governed business practices (Vedeld et al., 2021, p. 8). The network is supported by a platform encompassing several arenas dedicated to specific topics, actors and processes. An interesting lesson is that, over time, there has been a growing need to adapt the network's rules of operations to the diverse ambitions of various actors. Currently, the Business for Climate Network encompasses two levels of ambition: a 'ground level', where the participating companies fulfil a set of minimum criteria and the CEO simply expresses willingness to contribute and adjust their business model and operations to joint climate goals; and a more ambitious, demanding level, where, according to the network manager, the companies are willing 'to actually cut their own emissions and work to make other firms do the same'. This example from Oslo illustrates how deliberate co-creation leadership in the form of a joint platform, operational rules and routines and different levels of ambition may stimulate mutual learning, joint action and opportunities for more innovative, sustainable self-governance. Through clear ambitions and ground rules, the leadership gives direction to the co-creation processes unfolding in arenas building on the same platform.

Secondly, in Gothenburg we find an example of co-creation leadership operating in a heterogeneous setting aimed at mobilizing academics, professionals and other actors with different experiences, ideas, norms, values and interests and different preferences for green transition tools. *Mistra Urban Futures* (2010–2019) was a centre using a triple-helix platform to assemble a diverse set of actors in green urban futures R&D. It was owned and financed by the Gothenburg Consortium, which was a cross-sector, multi-

level partnership between four public agencies, two universities and a research institute (Polk, 2014). A key feature of the co-creation leadership being performed by city and research actors attached to *Mistra* was the persistent effort to build trust and bridge initial differences, thereby laying the foundation for joint problem-solving. In 2014, the City of Gothenburg launched a much more radical climate strategy than other Swedish cities, which also addressed carbon emissions from private consumption and the thorny question regarding social equity in climate mitigation efforts (Hofstad et al., 2021; Tahvilzadeh et al., 2015). The new strategy was developed using Mistra Urban Futures as a joint platform for dialogue and policy development, thus engaging both public, private and academics in co-created policymaking. A lesson from this and other inclusive, heterogeneous platforms is that they are good at facilitating creative problem-solving and formulating new, bold strategies, but they seem to struggle when it comes to operationalizing the joint ideas and strategies and implementing them in practice. So even if the Gothenburg climate strategy was progressive in its goals and content, its broadness and inclusiveness rendered it difficult to translate into action by a diversity of actors, as conflicts erupted and actors preferred to work more separately in the implementation phase (Hofstad et al., 2021). A more coordinated implementation process would require greater focus on conflict mediation and boundary spanning to get the diverse group of actors to eliminate gaps and overlaps and to create synergies and collaborative advantage.

Thirdly, research from several Scandinavian cities indicates that in order to create a balance between 'talk-centric' and 'action-centric' co-creation practices, public and private actors should be invited to help find new, feasible solutions to concrete problems of relevance to the involved actors and their shared overall goals (Hofstad et al., 2021). In this regard, the adoption of fossil-free construction site policies in Oslo offers an interesting example. Fossil-free construction has emerged as a main form of co-created policy experimentation aimed at reducing emissions from transport and heavy machinery on many urban building sites (Vedeld et al., 2021). Oslo's long-term aim is to achieve zero emissions from all construction sites by 2025; a policy that is spreading to other cities in Norway and Denmark and being promoted in the C40 and Eurocities urban climate networks. The first prototypical 'fossil-free building site' in Oslo was created relatively spontaneously via collaboration between a dedicated environmental foundation and a public building agency, both wanting to develop and test a new 'clean construction' concept (Vedeld et al., 2021). This bottom-up experiment inspired the development of new construction processes and novel technologies for electric machinery and vehicles. These innovations were realized through close collaboration between city agencies and urban development firms, construction machinery companies, civil society actors and state agencies that engaged in iterative cycles of prototyping, testing and redesign. Co-creation leadership played a key role in getting key stakeholders to focus on a concrete problem, designing and testing new solutions, and scaling the result to city, national and international levels. The exercise of co-creation leadership was distributed among various actors, all of whom contributed with ideas and initiatives pushing the agenda and its implementation forward, such as through the use of regulatory tools, careful mapping of construction processes, and showcasing of results and achievements (Vedeld et al., 2021).

Fourthly, catalysing learning across settings and actors is a key aspect of making co-creation leadership work. Most people are driven by entrenched norms and habits and have vested interests in preserving the status quo. They must be disturbed to think outside the box. *Gate 21*, operating in greater Copenhagen, is a learning platform connecting actors who otherwise would not meet in a triple-helix partnership aimed at stimulating learning and innovation leading to new climate solutions and green jobs. Copenhagen cannot reach its climate-neutrality goals without involving the adjacent municipalities, and Gate 21 was created to inspire neighbouring municipalities and regions to adopt similar climate goals and to translate the goals into action based on the co-creation of new initiatives. As such, Gate 21 engages a variety of public and

private actors operating in the Copenhagen metropolitan area and beyond – municipalities, urban developers, green-tech companies, academic institutions – in collaborative innovation processes that develop new climate solutions. The platform also aims to link urban entrepreneurs, academics and graduate students outside the formal job market to unearth new ideas and competences that can help to enhance climate-friendly consumption, mobility, resource recycling, etc. The City of Copenhagen uses the platform to co-create new solutions, to monitor and manage risks, critically evaluate drivers, barriers and impact, and produce joint learning about what works in practice. However, the main purpose of the platform is to spur ideational change and transform the norms, values and leadership culture of the deputy-mayors and administrative managers, thereby enabling future climate mitigation efforts and deep decarbonization.

Finally, the climate mitigation efforts of the City of Copenhagen serve to illustrate how co-creation leadership supported interactions leading to the production of public value outcomes. The new Climate Action Plan (CAP3) from 2012 aimed for CO_2 neutrality in 2025, meaning that all of the energy produced and consumed within city limits in the public, private and transport sectors should come from sustainable energy sources or be offset by sustainable energy production. Especially in the design phase, there was extensive co-creation. The city convened a series of stakeholders, carefully selecting participants based on multiple criteria to ensure that they were committed and willing to contribute to public value creation. As one of the conveners explains: 'We constantly emphasized that collaboration must produce value for Copenhageners and the city as a whole'. CAP3 was divided into three roadmaps covering different periods from 2012 to 2030. These roadmaps helped frame the collaboration between multiple actors and the use of different climate mitigation tools. More importantly, the roadmaps facilitated the monitoring of progress and created space for joint reflection on performance and the need for adjustment. In addition, a plethora of operational projects with public and private participation made annual activity plans that defined two milestones and were critically evaluated in dialogue with a project coordinator from the municipality. An interdepartmental steering group also discussed project updates in regular meetings to facilitate learning-based evaluation.

The empirical illustrations presented above indicate that the co-creation leadership task that we have identified resonates to some degree with ongoing practices in Scandinavian cities aimed at involving relevant and affected actors in their climate efforts. However, there is still some way to go before the potential of co-creation leadership is fully exploited. Some leaders of co-creation processes spontaneously do what is needed to get by, but they seldom choose the optimal tools and often pursue the various leadership tasks in an unclear and half-hearted way. In sum, there is considerable room for improvement.

Conclusion and future research avenues

In the search for a new and better understanding of co-creation leadership for the green shift, we have pinpointed the distinct features of co-creation and asked what the leadership of collaborative innovation processes with these particular characteristics requires. Table 1 summarizes the 15 tasks that co-creation leaders may undertake to spur the co-creation of innovative public value solutions.

Table 1: Core tasks for co-creation leaders

1	Conduct stakeholder analysis to identify relevant and affected actors
2	Convene actors based on formal mandate or persuasive storyline
3	Construct platform and arena that lowers transaction costs of collaborating

4	Build trust between actors to enhance collaboration
5	Mediate conflict via constructive management of differences
6	Engage in boundary-spanning activities and create boundary objects
7	Combine talk-centric and action-centric activities
8	Use design-thinking tools to map problems and needs
9	Promote rapid learning through prototype development and testing
10	Catalyse out-of-the-box thinking by creating an appropriate disturbance
11	Use developmental evaluation that asks critical questions to stimulate learning
12	Manage risks associated with innovation
13	Mobilize actors who possess the assets necessary to produce public value
14	Align actors to create 'coalition of the willing'
15	Produce small wins and document results to maintain collaborative spirit

The list of tasks for co-creation leaders may inspire public leaders to think about what it takes to lead and manage co-creation processes that foster innovative public value outcomes, such as a sustainable, zero-carbon future. It may also stimulate further research aimed at testing when and how co-creation leaders may use different leadership tasks to achieve their objectives.

Public management researchers may also explore the conditions for promoting co-creation leadership in European local governments. Different state and governance traditions may condition the use of creation as a tool for the green shift (Voorberg et al., 2017), and different experiences with collaborative leadership and network management may determine the knowledge and competence of public managers aiming to lead and manage co-creation. In Scandinavia, the conditions for co-creation and co-creation leadership are relatively good because of the long tradition for public–private collaboration, the limited import of New Public Management, the strong embrace of co-creation and considerable investment in leadership training, which includes leading collaboration and innovation. By contrast, the conditions for co-creation leadership are less supportive in countries with strong statist or market-based governance traditions; however, solid empirical knowledge is sparse and more research is needed.

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