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Introduction

Governing wickedness in megaprojects: discursive and institutional perspectives

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Abstract

Megaprojects are now as important as ever. As a response to the pandemic, the European Union has put forward the Next Generation EU policy, making available a 2021–2027 long-term budget of €1.8 trillion to fund projects with ecological and digital applications in the field of telecommunication, transportation, and energy infrastructures. Similarly, in the United States a $1.9 trillion Covid relief plan is on the way. Also, China has planned to expedite the rollout of 102 infrastructure megaprojects earmarked for the 2021–25 development plan. Despite their importance to policy-makers, megaprojects are often met with criticism and opposition by citizens, and often go off the rails—either with regard to budget or time, or both. This introductory article presents the aim and scope of the themed issue. It positions the problem areas beyond technical issues and connects them to the social and institutional environment within which megaprojects are planned and implemented. Moreover, the article makes the case for conceptualizing megaprojects as wicked policy fields. In doing so, we specify the three defining elements of megaprojects, namely, complexity, uncertainty, and conflict. The article argues that megaproject development cannot be seen as a rational, straightforward process. It is often a non-linear, conflictual process shaped by the collective action of different stakeholder groups (e.g., project managers, policy-makers, and citizens). Driven by divergent interests, sociotechnical imaginaries, as well as behavioral and discursive logics, groups of actors construct and mobilize narratives to influence final decision-making while interacting with the institutional context.

Keywords: Megaprojects, complexity, uncertainty, conflict, discourse, narratives, institutions

Megaprojects are long since considered a popular policy measure to stimulate the economy (Aschauer, 1990). These are usually defined as large-scale ventures that take many years to develop, involve multiple public and private stakeholders, and have a long-lasting impact on the economy, environment, and society (Flyvbjerg, 2014, 2017). Megaprojects are extremely complex policy fields marked by the existence of different sociotechnical imaginaries about how megaproject-related changes will contribute to public purposes and the common good (Hsu, 2018). Understanding how these projects are governed appears even more crucial nowadays when they seem increasingly important to the future of our societies and individual livelihoods. For instance, in the wake of the Covid-19 pandemic, the European Union's *Next Generation EU* has allocated a budget of €1.8 trillion to fund projects with ecological and digital applications. Similarly, the USA passed a $1.9 trillion Covid relief plan, and China has planned to

expedite the rollout of 102 infrastructure megaprojects earmarked for the 2021–2025 development plan. Megaprojects also play a crucial role in the efforts to meet the United Nations Sustainable Development Goals (Corazza et al., 2022; The Economist Intelligence Unit, 2019).

The empirical definition of megaprojects includes, for example, large-scale infrastructure projects (e.g., canals, airports, harbors, dams, railways, highways, and bridges), events (e.g., Olympic games and other mega sports events, Expo), and public investment programs (e.g., European Union funding programs). What unites the great variety of megaprojects is the presence of the following characteristics: complexity, uncertainty, and conflict. Complexity derives from the fact that megaprojects require a high level of inter-organizational cooperation across geographical, cultural, and institutional boundaries (Scott et al., 2011), and their implementation is context-sensitive and unpredictable. Uncertainty and conflicts often arise due to the fact that, because of different sociotechnical imaginaries about the megaproject, opposing stakeholders may have competing views, informed by contested information and evidence, about how a megaproject will contribute to the economy, environment, and society (Awakul & Ogunlana, 2002).

Against this background, we need to move beyond traditional project management approaches which tend to focus on day-to-day managerial actions. These approaches see megaproject management largely as a delivery system or technique-laden toolbox to accomplish a given task within a defined set of constraints (Morris, 2013). In contrast, a wider public policy approach broadens the scope of megaproject management to the policy processes, subsystems, and regulations that organizational players have to confront with to promote the megaprojects' success (Samset & Volden, 2016). In the latter case, project management firms shape megaprojects in conjunction with nonbusiness actors, such as state administrations and civil society, beginning with the first front-end definition stage (Keeys & Huemann, 2017; Smith & Winter, 2010). Therefore, we need to understand megaproject development not as a rational, straightforward process but rather as a nonlinear, conflictual, and institutionally situated policy process shaped by the collective action of a great variety of stakeholders. Driven by divergent interests and behavioral logics, actors struggle to influence the final decision-making outcomes within institutional and administrative structures and legal systems (Biesenthal & Wilden, 2014; Brunet, 2019; Esposito et al., 2021, 2022; Morris & Geraldi, 2011).

In the context of uncertain, complex, conflictual, and institutionally embedded policy fields such as megaprojects, concerned actors engage in a battle over (competing) narratives, namely, they discursively construct and mobilize sets of stories and arguments to influence—either legitimating or delegitimating—choices and decisions about the megaproject. Through argumentation, actors aim to bring out unstated assumptions and conflicting interpretations of the facts (Majone, 1989). Moreover, institutional settings are crucial in enabling different and opposing stakeholders to withstand and survive the impacts of emergent controversies (Biesenthal et al., 2018). Indeed, controversies among megaproject participants are often dealt with in the regulatory layer of institutions working as structures providing frameworks to reduce uncertainty and solve collective action problems.

In bringing together management and policy studies, the aim of this themed issue is to advance our theoretical and empirical understanding of the role of discursive and institutional factors—and their interaction—in megaprojects. The collection of articles sheds light on the diversity of actors, discursive logics, and narratives involved in megaproject governance, as well as the different strategies through which such diverse societal actors—operating in a mix of international organizations, national governments, firms, and civil society groups—interact with institutions to shape megaproject development. We argue that megaprojects constitute valuable empirical sites to understand the role of discursive and institutional factors in policy-making more broadly. In fact, because contributors engage with a variety of megaprojects and policy sectors, the themed issue touches upon topics such as economic development, neoliberalism, environmental justice, public procurement, resource management, urban planning, democratic accountability, participatory and deliberative governance, social movements, and organization studies.

In the next section, we briefly map the status of megaprojects research in the field of management, public administration, and political science. The section "Megaprojects as wicked policy fields" specifies the three constitutive conceptual elements of megaprojects, namely complexity, uncertainty, and conflict. In doing so, we make the case for megaprojects as wicked policy fields. The section "Governing wickedness in megaprojects: discursive and institutional perspectives" emphasizes the importance of

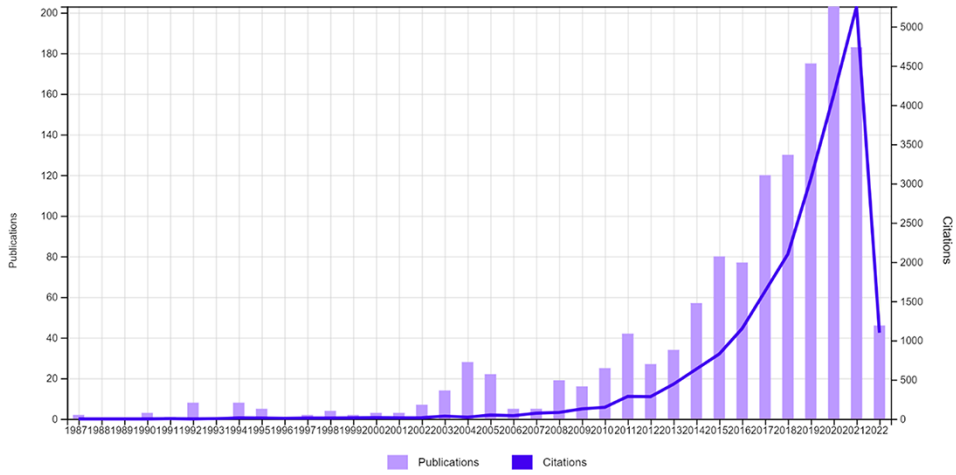

Figure 1. Research on megaprojects: publications ($n = 1{,}357$) and citations over time (Social Sciences Citation Index, all categories).
Source: Web of Science (last accessed April 8, 2022).

Table 1. Research on megaprojects: top 10 journals (Social Sciences Citation Index, all categories).

Journals	Number of articles
International Journal of Project Management	87
Sustainability	65
Project Management Journal	48
Engineering Construction and Architectural Management	41
International Journal of Managing Projects in Business	32
Urban Studies	31
Cities	28
International Journal of Urban and Regional Research	23
Journal of Construction Engineering and Management	23
Journal of Management in Engineering	22

Source: Web of Science (last accessed April 8, 2022).

adopting discursive and institutional perspectives to the study of megaprojects. Finally, the section "The content of the themed issue" presents the articles included in the themed issue.

Megaprojects: a critical yet neglected empirical field in policy research

Over the past decades, the social sciences have witnessed a proliferation of studies on megaprojects (Figure 1). Advanced searches in the Web of Science database reveal that, since the late 1980s, approximately 1,360 articles have been published on the subject.[1] However, the field has remained mainly the prerogative of environmental studies, (project) management, geography, engineering, and urban studies. In fact, the top 10 journals in the field belong to these categories[2] (Table 1).

We firmly believe that this scholarship is relevant to public policy research and we do not intend to draw clear-cut boundaries among academic disciplines. However, we cannot help but notice that the fields of public administration and political science are underrepresented, with 81 articles published between 1991 and 2022 (6% of the total) (Figure 2; Table 2). We do believe in the need to bridge different research traditions and that the policy scholarship has much to offer to our understanding

[1] We searched for records containing the terms "megaproject*" or "mega-project*" or "mega project*" in the titles, abstracts, or keywords. We also ran a search adding the term "large infrastructure*." The total number of articles increases to approximately 1,600. However, the percentage of records in the categories of political science and public administration remains the same (6%).
[2] Note that there are journals belonging to more than one category.

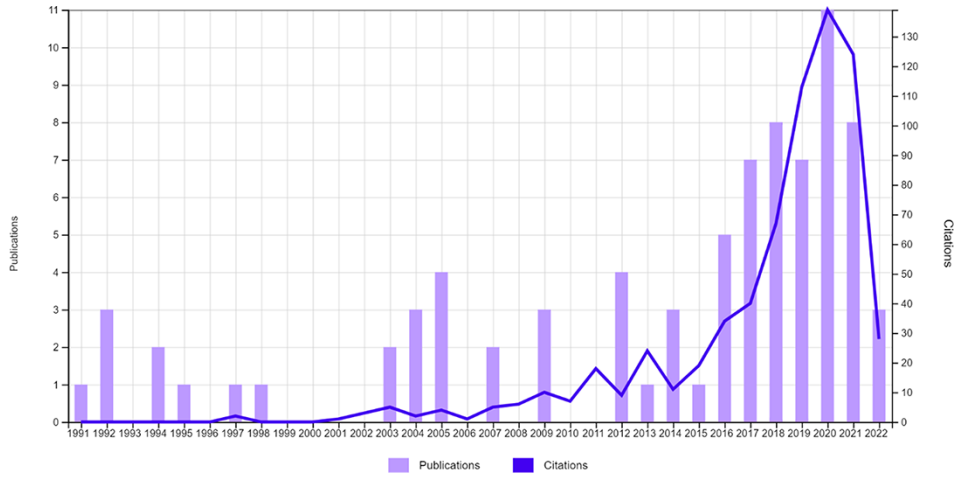

Figure 2. Research on megaprojects in public administration and political science: publications ($n = 81$) and citations over time (Social Sciences Citation Index).
Source: Web of Science (last accessed April 8, 2022).

Table 2. Research on megaprojects: journals in public administration and political science that have published more than one article on megaprojects (Social Sciences Citation Index).

Journals	Number of articles
Economic and Political Weekly	5
Geopolitics	5
Environment and Planning C: Politics and Space	4
Political Geography	4
Territory, Politics, Governance	4
Environmental Politics	3
International Journal of Conflict Management	3
Latin American Perspectives	3
Policy Sciences	3
Climate Policy	2
Communist and Post-Communist Studies	2
Global Policy	2
Journal of Policy Analysis and Management	2
Local Government Studies	2
New Left Review	2
Policy and Society	2
Politikon	2
Public Management Review	2
Review of African Political Economy	2

Source: Web of Science (last accessed April 8, 2022).

of the dynamics of megaproject development. In the remainder of the article, we particularly bridge management and policy studies to shed light on complexity, uncertainty, and conflict in megaprojects.

Megaprojects as wicked policy fields

We contend that the field of megaprojects is inherently wicked, namely, it is marked by a complex web of stakeholders' interests and characterized by uncertainty and entrenched value divergence and conflict (Head, 2022; Rittel & Webber, 1973). Thus, rather than emphasizing the wickedness of the different problems that may arise during megaproject development, we shift the focus to the wickedness of the

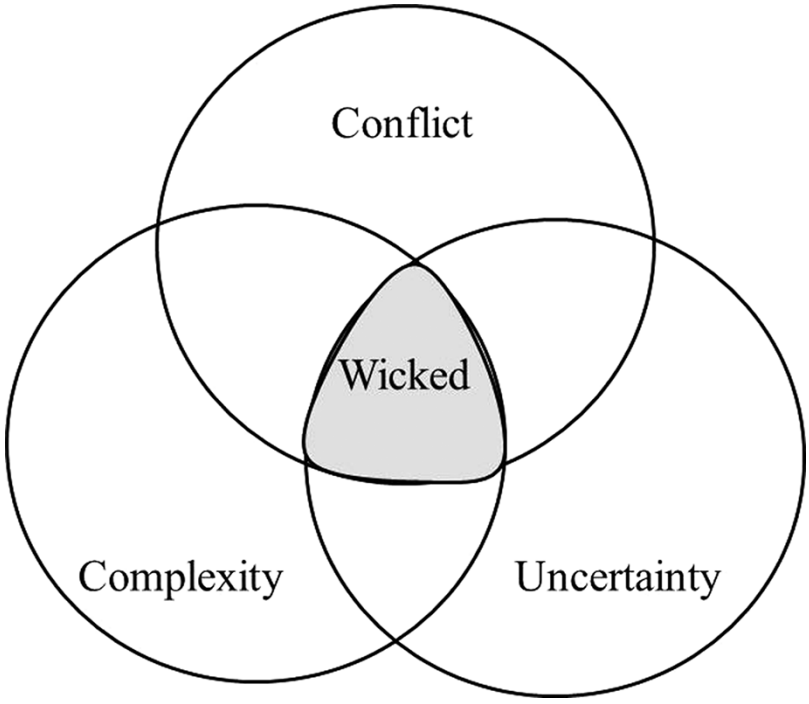

Figure 3. Complexity, uncertainty, and conflict dimensions of megaprojects.
Source: Adapted from Head (2022, p. 34).

Table 3. Types of complexity in megaprojects.

Type of complexity	Description
Technical	It is concerned with the project scale and the use of unproven or high-risk technology
Political and administrative	Multiple governments, administrations, and authorities (supranational, national, regional, and municipal) are involved
Social and cultural	It includes the interaction between individuals and organizations involved in and concerned by the project. It refers to the complexity originating from different interests, preferences, attitudes, visions, and cultures of a large number of stakeholders
Financial	It originates from changing financial requirements and contractual commitments
Legal and regulatory	It stems from different and changing legislation, rules, and regulations
Organizational	It has to do with the high number of organization units and cross-organizational interdependence

Source: Authors' elaboration based on He et al. (2015), Ika et al. (2022), Kardes et al. (2013), Qiu et al. (2019), Shenhar (2001), Shenhar and Holzmann (2017), Shi et al. (2020), and Williams (2005).

policy field per se.[3] This section specifies the meaning of the three defining features of megaprojects: complexity, uncertainty, and conflict (Figure 3).

Complexity and nonlinearity

The scholarship in project management has identified different dimensions of complexity. Salet et al. (2013) emphasize that the sources of complexity can be political and social (e.g., changes in political commitment and social tensions), as well as legal (e.g., legal requirements and constraints),

[3] A similar terminology has been recently employed by Head (2022, p. 97) who, in relation to climate change, has used the expression "wicked policy arena."

financial (e.g., funding and contractual commitments), and technical (e.g., the adoption of "unproven technologies"). Project complexity can be divided into two categories: structural and dynamic. Whereas structural complexity is characterized by the interdependence and diversity of the different organizational project components, dynamic complexity "highlights the question of changes and evolutions over time, and focuses on the dynamic relations between the internal components of the project and between the project components and the environmental components" (Daniel & Daniel, 2019, p. 1019). The literature has also identified specific types of complexity in infrastructure (mega)projects (Table 3).

Complexity theorists in public administration and management (Eppel & Rhodes, 2018; Geyer & Cairney, 2015; Haynes, 2008; Teisman & Klijn, 2008) have long argued that often policy systems and processes "lack the order and stability required to produce universal rules about behavior and outcomes" (Cairney, 2012, p. 437). Complex systems have "many cases (like people and organizations) and elements (like places and processes)" (Haynes, 2018, p. 982) and are characterized by ambiguity, unpredictability, and nonlinearity (Cairney, 2012; Little, 2012). In particular, nonlinearity means that "policy progression does not follow a pre-established sequence, and that there is not necessarily any causal link between the steps or stages" (Capano, 2009, p. 11). Policy processes are rather characterized by multiple interconnections and feedback loops. As recent scholarship has shown, megaproject development can hardly be conceived of as a linear process (Esposito et al., 2022; van Marrewijk et al., 2016). Contingency is of paramount importance in the nonlinear interaction among agents with adversarial interests, beliefs, and logics of action. Table 4 contrasts linear and complex policy processes, presenting the main characteristics of both.

Uncertainty and actors' views of the future

Given that megaprojects may take many years to develop, understanding how actors perceive the future is crucial. This is all strictly related to the notion of uncertainty. The literature has recognized the

Table 4. Linear vs. complex and nonlinear policy processes.

	Linear policy process	Complex and nonlinear policy process
Nature of policy-making	Decision-making is linear, mechanistic, clocklike, and conducted in a unified policy system	Institutions and organizations that self-organize to implement emerging and complex policies countered by tendencies toward policy disorder
Context of the policy process	Ordinarily based in the realm of government decision-making	Integrated into all political and non-political social interactions and relationships
Space and time	Time is common and universal for all policy entities	Policy spaces are linked to policy events which may impinge upon each other to change policy outputs and outcomes of both
Nesting	Not relevant	Policy systems are nested in a multi-dimensional layering of other policy systems that exist at levels above and below normal government policy-making practices
Key attractors[a]	Primarily include governments, interest groups, and individuals that convert policy issues and problems into policies	Numerous with each having varying weight and influence on the policy process, outputs, and outcomes; economic and political inequality and dominance are a key attractor that may be influenced by other attractors
Change over time	Consistent, predictable, or linear	Uncertain, unpredictable, chaotic, and immensely varied in terms of patterns and trends

Source: Adapted from Givel (2015) and Capano (2009).
[a]In the language of complexity theory, "an attractor is a point of order within a system of change. In mathematical terms it defines the boundaries, or limits of fluctuating change over time. In qualitative terms, in a policy system, an attractor can be argued to be a set of values or logics that give a policy system a general characteristic of relative stability in a given time period" (Haynes, 2008, p. 405).

multidimensional nature of the concept. Uncertainty can be related to the very nature and inherent variability of the problems at stake. It can also stem from the lack of knowledge about a given phenomenon (epistemic uncertainty), or it can originate from the divergent meanings that different actors participating in the policy process attach to a certain issue (Enserink et al., 2013; Head, 2019; Veenman, 2013). This latter point is intertwined with the notion of ambiguity, which refers to the different ways of viewing or thinking about the same circumstances (Fowler, 2021; Herweg et al., 2018). Ambiguity plays a crucial role in decision-making in that it can be used strategically by agents. Strategic ambiguity implies that actors are intentionally equivocal about meanings to promote "unified diversity" and absorb different visions and beliefs while accommodating diverse interests with a view to generating consensus between groups and form coalitions (Eisenberg, 1984; Ravishankar, 2013; Sonenshein, 2010). It is a discursive device to "artfully manoeuvre around potentially conflicting situations and to guide strategic action" (Ravishankar, 2013, p. 317). Ambiguity may concern policy goals and instruments. For example, ambiguously stated goals may give actors in power positions the flexibility to shift interpretations of such goals—and of the means to achieve them—in response to changing circumstances, helping them to preserve their privileged positions (Eisenberg, 1984; Ravishankar, 2013).

From a managerial perspective, uncertainty is also related to risk. Yet, a fundamental distinction must be drawn between the two concepts. On the one hand, risk refers to situations in which potential outcomes are calculable, quantifiable, and controllable ("known unknown"). As defined by Lessard and Miller (2000, p. 76), risk is "the possibility that events, the resulting impacts, the associated actions, and the dynamic interactions among the three may turn out differently than anticipated." On the other hand, uncertainty denotes situations in which the potential outcomes are also unknown ("unknown unknown") (Enserink et al., 2013; Flyvbjerg et al., 2002; Giezen, 2012; Hartmann & Wenzelburger, 2021; Lessard & Miller, 2000; Sanderson, 2012).

Therefore, the views of the future held by the actors involved in and concerned by megaproject development can be either risky or uncertain. In this regard, in reviewing explanatory research on performance problems in megaprojects, Sanderson (2012) distinguishes three types of explanations that are based on the diverse ontological assumptions about decision-makers' cognition and their views of the future (Table 5). Explanation type A sees actors as being able to assign objective probabilities to future events and make decisions that fully optimize their interests. Explanation type B conceives of

Table 5. A comparison of alternative explanations of megaproject performance.

	Explanation type A: strategic rent-seeking behavior	Explanation type B: misaligned and underdeveloped governance	Explanation type C: diverse project cultures and rationalities
Assumptions	Decision-maker cognition: optimizing Decision-maker view of the future: statistical probability	Decision-maker cognition: optimizing within limits Decision-maker view of the future: subjective probability	Decision-maker cognition: satisficing Decision-maker view of the future: socialized
Problems	Problems result from project promoters regularly engaging in intentional rent-seeking behavior (underestimating costs and overestimating benefits) to get nonviable projects approved	Problems result from misaligned governance arrangements incapable of handling the emergent turbulence associated with megaprojects	Problems result from processes of social construction characterized by competing cultures and rationalities
Solutions	Legal requirement for thorough ex ante risk analysis; various ex ante measures to improve accountability of project decision-making	Conscious design and creation at the front end of the project of mechanisms that enhance ex post governability	Conscious design and creation at the front end of the project of a shared culture supported by governance mechanisms to encourage collaborative behavior

Source: Adapted from Sanderson (2012).

decision-makers as having cognitive limits and lacking the necessary data to assign objective probabilities to the future. According to explanation type C, given the fact that the future is unknown and socially constructed, decision-makers make choices that satisfy their aspirational levels. The core argument of explanation type A is that problems in megaprojects arise from actors' opportunistic behavior and strategic rent-seeking practices carried out to pursue their interests. Consequently, solutions lie in the creation of a set of institutional and procedural tools to improve accountability. Instead, according to explanation types B and C, problems stem from the absence of appropriate institutional arrangements (type B) and of a shared, single culture and rationality (type C). Therefore, solutions must be sought in the development of appropriate institutional arrangements (type B) and the promotion of collaborative behavior (type C).

Internal and external conflict

Conflict is at the heart of public policy development (Head, 2022; Thacher & Rein, 2004; Weible & Heikkila, 2017). Policy realities are characterized by interactions among multiple stakeholders with divergent values, interests, and logics of action. Conflict arises when (groups of) actors realize and manifest that they have incompatible beliefs, visions, and objectives (Wolf & Van Dooren, 2018). Two dimensions of policy conflicts can be identified. These relate to the *divergence in* policy positions and the *threats from* policy positions (Weible & Heikkila, 2017). Whereas the first dimension is concerned with divergences regarding what should be done in relation to a certain policy or issue, the second dimension relates to the threats that policy actors perceive from the positions of their opponents. These two dimensions might stem a third one, namely, the unwillingness of actors to compromise on a certain position (Weible & Heikkila, 2017).

Stakeholders participating in megaprojects may strategically decide to engage or disengage with conflict. In this respect, conflict has a positive side in that it might signal public engagement and stimulate creativity and innovation, as well as prevent tunnel vision. Of course, conflictual dynamics also have a negative side in that they can foster distrust and hostility (Wolf & Van Dooren, 2018; You et al., 2022). The literature in project management has mainly dealt with conflict among internal stakeholders such as project teams, financers, contractors, subcontractors, employers, and employees. However, research has increasingly underlined the importance of investigating conflict-ridden dynamics among external actors—such as governments and public administrations (supranational, national, and subnational), citizens, local communities, and social movements—as well as between internal and external stakeholders (Esposito et al., 2021, 2022; Lee et al., 2017; Di Maddaloni & Davis, 2017; Park et al., 2017; Strauch et al., 2015; van Marrewijk et al., 2016).

Lee et al. (2017) identify several drivers of conflict involving internal and external stakeholders which include factors related to problems in information sharing, economic and environmental concerns, presence of opposition movements, and differences in perceptions and value systems. These drivers could bring to megaproject termination, early or late conflict mitigation, or late conflict occurrence. More generally, in line with much of the research investigating conflict in public policy and public administration, the literature on megaprojects has emphasized how conflict has the potential to stop, suspend, delay, or amend megaproject development (Esposito et al., 2021, 2022; You et al., 2022).

Governing wickedness in megaprojects: discursive and institutional perspectives

In extremely complex, uncertain, and conflictual policy domains such as megaprojects, rational models of planning and decision-making have come under criticisms (Szyliowicz & Goetz, 1995). Rational decision-making is driven by a logic of consequentiality that is fundamentally associated with anticipatory action. This view of agency sees the decision-maker as holding a consistent preference ordering that allows to survey all possible alternatives and to choose the course of action that maximizes utility. These assumptions of rational decision-making have long been challenged by organization and decision-making theorists. It is unreasonable and unrealistic to consider that individuals are capable of making judgments about all possible alternatives and choosing those that have the best consequences in terms of utility maximization. Given that rationality is bounded, decision-making is an iterative learning process influenced by the contours of organizational life (Forester, 1984; March, 1978).

Although they depart from the unrealistic assumptions of (fully) rational models, traditional approaches in the field of megaprojects conceive of project management as a narrow domain of managerial action, reflected only in the project life cycle, and ignoring the critical front-end and institutional elements (Morris, 1994). In such traditional approaches, project management is seen simply as a delivery system or technique-laden toolbox to organize and manage the resources required to complete a project within a defined project management framework made of scope, quality, time, and cost constraints (Hu et al., 2016; Morris, 2013). However, conditions of complexity and uncertainty, as well as conflict-ridden dynamics, make it difficult to determine what is the exact optimal decision to make, and force the decision-maker (and the policy analyst) to depart from a strict orientation toward technical outcomes (Majone, 1989). In this respect, scholars have argued for the adoption of a socioeconomic perspective—as opposed to a pure techno-economic one—to the study of the dynamics of megaproject formulation and implementation (Esposito et al., 2021, 2022).

In Table 5, we have reported three strands of research investigating problems and solutions in megaproject development. In this themed issue, we build upon the literature in the tradition of explanation types B and C. In analyzing the factors that shape megaproject development, this scholarship has addressed the role of discourse and competing policy narratives (Esposito et al., 2022; Ninan & Sergeeva, 2021), perceived institutional frameworks, and embedded agency (Biesenthal et al., 2018; Esposito et al., 2021), as well as the involvement of and resistance by local community groups (Di Maddaloni & Davis, 2017; Park et al., 2017; Strauch et al., 2015). However, we do not draw clear-cut boundaries with the problems and solutions advanced in explanation type A. In effect, as we shall see, megaprojects development is characterized by problems and solutions that can be found in all three types of explanations. For example, in real-world settings, we might have type C solutions to type A problems. In other words, how different problems and solutions unfold in diverse contexts is a matter of empirical investigation.

Going beyond a pure project management approach, we point to the usefulness of adopting discursive and institutional perspectives to advance our understanding of complexity, uncertainty, and conflict in megaprojects. These perspectives emphasize that, in shaping megaproject development, different stakeholder groups are driven by divergent interests, sociotechnical imaginaries, and behavioral and discursive logics. They thus construct and mobilize narratives to influence—either legitimating or delegitimating—choices and decisions while interacting with the institutional context.

Discourse, narratives, and sense-making

Few studies on megaprojects have adopted a discursive perspective to investigate a variety of empirical settings such as energy megaprojects (van den Ende & van Marrewijk, 2015; van Wijk & Fischhendler, 2017), highways and motorways (Haughton & McManus, 2021; Wolf & Van Dooren, 2018), railways (Esposito et al., 2022; Nagel & Satoh, 2019; Ninan & Sergeeva, 2021), ports (Merkus & Veenswijk, 2017), bridges (Brewer, 2019), and canals (Sayan & Nagabhatla, 2022).

Embracing discursive perspectives on the study of megaprojects means recognizing their contestability and argumentative dimension (Fischer, 2003; Fischer & Forester, 1993; Hajer & Wagenaar, 2003; Majone, 1989; Schneider & Ingram, 1997; Stone, 2012; Wagenaar, 2011). Because megaprojects are wicked policy fields, we need to understand how actors interpret and adapt to the environment and how they make sense of their own perception of the course of action they intend to follow in a landscape that changes continuously (Cairney, 2012; Little, 2012; Teisman & Klijn, 2008). As Roe (1994, p. 3) puts it, there are policy fields that are so uncertain and complex "that the only things left to examine are the different stories [actors] use to articulate and make sense of that uncertainty [and] complexity."

Through stories or narratives, agents provide justificatory arguments to (de)legitimize decisions and strategically shape the surrounding environment (Boltanski & Thévenot, 1991, 1999; Esposito et al., 2022; Terlizzi, 2021). In order to provide a basis for action, individuals and organizations involved in and concerned by megaproject realities need to make sense of those realities (Alderman et al., 2005; Brunet, 2021; Ninan & Sergeeva, 2021; Weick, 1995). Through sense-making, actors discursively construct and interpret meanings. Sense-making "involves turning circumstances into a situation that is comprehended explicitly in words and that serves as a springboard into action" (Weick et al., 2005, p. 409). It is a process of social construction through which values and meanings are attached to a given phenomenon, enabling interpretation and providing actors with rationales to form a discourse coalition, namely, "a group of actors who share a social construct" (Hajer, 1993, p. 45). Discursive approaches thus emphasize the importance of agency, conceived here as the actions taken by proponents and opponents

in the form of discursive practices through which they strategically mobilize competing megaproject justifications. However, in justifying their claims actors do not act in a vacuum but are situated within institutional structures (Esposito et al., 2022; Schmidt, 2008). To put it bluntly, megaprojects are "not islands" but are embedded in their societal and institutional surroundings in a number of ways (Engwall, 2003). This brings us to the role of institutions in megaproject development.

Institutions, institutional work, and embedded agency

Compared to the scholarship focusing on the discourse, narratives, and sense-making, the (mega)project management literature stressing the importance of institutional surroundings is abundant (Sydow & Söderlund, 2022). There is indeed a history of research on the practices of organizing megaprojects and the institutional contexts in which these projects are embedded (Biesenthal et al., 2018; Brunet, 2019; Munck Af Rosenschöld, 2019; Qiu et al., 2019; Scott & Levitt, 2017; Söderlund & Sydow, 2019; Tonga Uriarte et al., 2019). Early research examined institutions as formal structures (e.g., contractual provisions, legal sanctions, regulatory incentives, and administrative procedures) that provide stable frameworks within which actors manage megaprojects (Miller & Lessard, 2000). Such work offered strong accounts of the regulative institutions that influence participants' behavior and orient collective action (Morris, 1994). More recent studies have pointed rather to the mutual interactions that link megaproject participants and institutions (Mahalingam & Levitt, 2007; Söderlund & Sydow, 2019) with a major focus on participants' purposive actions to shape the broader institutional contexts in which megaprojects are enacted (Esposito et al., 2021). This shaping approach challenges the traditional view of megaproject management with a far more comprehensive perspective (Pinto & Winch, 2016). Shaping actions switch the players from a techno-economic dominant logic of megaproject management to a socioeconomic logic of megaproject governance going beyond the traditional engineering field (Cova et al., 2002; Cova & Holstius, 1993) and involving wider public management and policy-making skills to interact with the administrative processes, legal systems, and regulations (Volden & Samset, 2017) that influence the "meta lifecycle" of projects (Pinto & Winch, 2016: 240).

Sydow and Söderlund (2022) summarize the major contributions of the different strands of institutional theory to megaproject studies, thereby highlighting three main research approaches. First, they start with the neo-institutionalist approach that highlights structural, isomorphic forces determining how projects should operate so that they are in line with the institutional regulations and templates that govern behavior in a particular context (Orr & Scott, 2008; Scott, 2012; Scott et al., 2011). However, megaproject managers not only look for compliance with and support from their institutional environments, but they also aspire to influence the regulations and templates that govern managers' behavior in these environments. Therefore, a second research approach relies on agency-oriented concepts such as institutional entrepreneurship and institutional work to study the processes by which actors (collective and individual) influence the institutional contexts within which megaprojects are designed and implemented (Biesenthal et al., 2018; Esposito et al., 2021; Scott & Levitt, 2017). From this perspective, megaprojects can be regarded as contested institutional fields where conflict and order may exist in tandem (van Marrewijk et al., 2016): while some actors work to create (Lieftink et al., 2019) and maintain (Tonga Uriarte et al., 2019) megaproject institutions, others work to disrupt them (Jordhus-Lier, 2015; van den Ende & van Marrewijk, 2019). In reaction to these agency-oriented perspectives, scholars moved their focus on the mutual interactions that link megaproject agents and institutions (Mahalingam & Levitt, 2007; Söderlund & Sydow, 2019). Biesenthal et al. (2018) refer to this interdependence between megaproject agents and institutional structures as the paradox of "embedded agency." This concept refers to the embeddedness of actors in perceived institutional contexts that they must learn to change, organize, and manage in order to influence the context in which megaprojects are carried out rather than their agency being merely determined by these contexts. The embedded agency perspective should be understood as a response to the excessive agency focus of the institutional work and, in particular, institutional entrepreneurship approaches. Therefore, researchers have moved to concepts such as institutional logics and institutional complexity in order to highlight the importance of structural forces to which the purposive actions of megaproject participants are exposed.

Figure 4 presents the key elements of the discursive and institutional perspectives to the study of megaprojects discussed previously, posing them along a continuum on the basis of the emphasis each perspective poses on the structure and (embedded) agency.

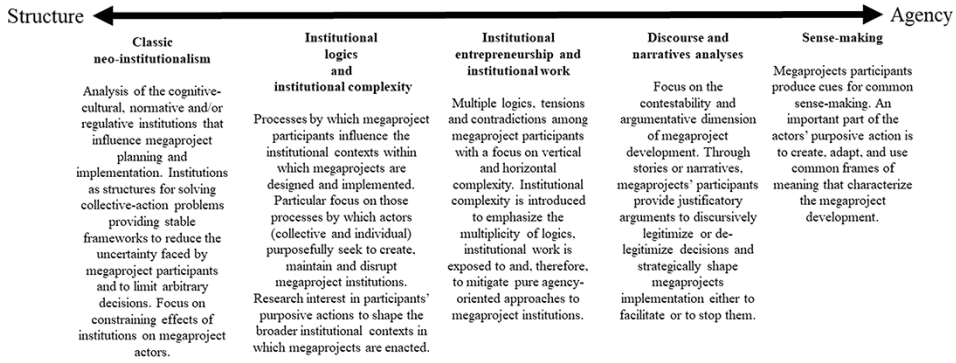

Figure 4. Discursive and institutional perspectives on the study of megaprojects.
Source: Adapted and updated from Sydow and Söderlund (2022).

The content of the themed issue

On the one hand, contributions in this themed issue shed light on the non-linear development of megaprojects and highlight how complexity, uncertainty and conflict shape megaproject planning and implementation by putting a focus on the relationship between discourses and practices (Hudon & Floricel, 2023; Tinti, 2023; Rek-Woźniak, 2023). On the other hand, contributions also explore how megaproject participants strategically use narratives as instruments to cope with megaproject wickedness (Coticchia & Di Giulio, 2023; Sergeeva & Ninan, 2023) as well as the key institutional features that can ensure success in megaproject development (Lucciarini & Galdini, 2023; Migone, Howlett & Howlett, 2023; Esposito, Felicetti & Terlizzi, 2023).

By establishing a dialogue between the Advocacy Coalition Framework and project development process theories, Hudon & Floricel (2023) integrate project management and policy studies to shed light on the non-linear development of megaprojects. This integrated model is applied to the case of a major Canadian city streetcar network and offers insights into the understanding of megaprojects conflict, complexity, and uncertainty. Building upon a theoretical framework revolving around coalition (discursive) dynamics, learning and change, this article suggests that conflicts between instigators and opponents of the megaproject do not emerge from the typical cleavage lines of pro-development versus pro-environment policy values. These coalitions can rather be held together by secondary aspects. It is shown that a key source of complexity and uncertainty is the possibility that secondary issues are strategically taken up by opposing coalitions and inflated to the level of a major issue or used for obtaining concessions.

By deepening the analysis of conflict dynamics in megaprojects, Tinti (2023) explores the top-down planning of hydraulic infrastructures in the Tigris-Euphrates basin. The author brings together insights from post-structuralist human geography and the literature on megaprojects to show how large dams become sites of contestation between competing claims and are materially and discursively implicated in the social construction of broader political imaginaries. In particular, the analysis focuses on the security and nationalist narratives developed by the Kurdistan Regional Government and the counter-narratives mobilized by transnational civil society groups. The article therefore sheds light on the spatial politics of megaprojects, involving conflicting sense-making processes over issues of identity, equity, and sustainability.

Rek-Woźniak (2023) narrows the focus on the relationship between megaprojects discourse and development practices. She therefore mobilizes discursive institutionalism to discuss how neoliberal master narratives have been developed to legitimize megaproject-based growth in the urban policy agenda of Finland and Poland. The author particularly shows how the "growth imperative" has been used to navigate wickedness and discursively facilitate consensus building around large-scale urban projects in Tampere (Finland) and Łódź (Poland). Evidence provides insights into how strategic ambiguity can be used by policy actors to neutralize conflicts of visions, values and interests among competing stakeholders and discursively force them to consent around megaprojects development.

Relying on discourse analysis, Coticchia & Di Giulio (2023) shed light on the strategic use of narratives, intended here as discursive instruments to pursue specific policy goals as well as to cope with the

challenges of megaprojects implementation. Narratives are here presented as a glue helping policymakers to mobilize relevant stakeholders whose support is needed to achieve planned implementation goals. Nevertheless, through a case study analysis of a high-speed railway in the city of Florence, the authors argue that narratives may certainly be used, but can also be strategically non-used or hypocritically used. Policymakers' strategic non-use of narratives aims at silencing the public debate about contested megaproject issues to avoid discussions that can hamper implementation process. Conversely, policymakers make a hypocritical use of narratives when their goals in the megaproject implementation process fail to align with the very content of their narratives.

Sergeeva & Ninan's (2023) work also presents narratives as instruments to organize megaproject development. The authors narrow the focus on comparisons, intended here as a discursive tool. By focusing on the construction of the High Speed 2 (HS2) megaproject in the United Kingdom, the article adopts a sense-making perspective to investigate how promoters and protesters employ comparisons in newspapers articles to shape megaproject narratives and influence the organizational field. The study highlights the presence of comparisons with context (economic, institutional, and state of transportation) and comparisons with organizations (within or outside the United Kingdom). These comparisons have implications towards creating narratives of events, narratives of characterization, narratives of processes, and narratives of organization. The article therefore provides empirical evidence on the importance of past, present and future oriented narratives in the process of organizing.

While previous articles highlight how the mobilization of narratives is essential for megaproject development as it can integrate stakeholders and construct collective identities, Lucciarini & Galdini (2023) adopt an institutional perspective and bring the focus on the importance of legitimization mechanisms. Legitimacy is deemed crucial as it regulates the relationship between megaproject promoters and especially between megaproject promoters and the public sphere. Through the analysis of the case of the Fehmarnbelt Fixed Link between Germany and Denmark, they argue that the legitimacy attributed and "held" by the promoters is an important asset to deal with the uncertainty, complexity, and conflict-ridden dynamics of megaprojects. It particularly allows promoters to make the megaproject socially acceptable through the construction of public support and the quality improvement of relations among all megaproject participants.

Migone, Howlett & Howlett (2023) bring yet a different angle on megaproject success factors. Their article focuses on large scale military platform procurement, an understudied empirical setting among the policy literature on megaprojects. The authors compare Canadian and Australian efforts to purchase a large number of new warships to replace aging fleet assets. Whereas Australia offers an example of policy success, Canada's efforts to purchase new frigates have failed to produce a single ship over two decades of planning. The article shows that, for megaprojects procurement strategies to be successful, it is essential an alignment between government defense policy and military doctrine. This means that the service leadership and government administration must agree over the objectives, risks' perceptions, and overall vision regarding the virtues of the megaproject.

Following up on the widespread idea that participatory governance is an important success factor in megaproject development, Esposito, Felicetti & Terlizzi (2023) investigate the institutional design of participatory governance venues in the context of the implementation of the Lyon-Turin high-speed railway megaproject. In particular, the authors explore structural and agentic characteristics of participatory governance in the two cases and shed light on the conditions that can either foster or hinder democratic participation. Whereas the Italian case featured substantial structural barriers to effective participatory decision-making, the French case was better designed and implanted in its context. However, the latter featured important agentic limitations that undermined its democratic potential. Having showed important limitations in the two cases under examination, the authors make a case for a deliberative democratic approach to governance of and research on infrastructure megaprojects.

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Conflict of interest

None declared.

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