

Research Article

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Multi-level Governance as a Cognitive System



IDHUS Institute

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Introduction

The organisation of public governance has always reflected the complexity of the societies it serves. Even the smallest political communities have rarely depended upon a single institution exercising complete authority over every aspect of public life. Instead, governance has evolved through multiple levels of organisation, each responsible for particular functions while interacting continuously with others. Municipal governments address local needs, regional administrations coordinate territorial development, national governments establish legislative frameworks and strategic priorities, while international organisations increasingly contribute to the governance of challenges that extend beyond national borders. Contemporary governance therefore exists within a richly interconnected architecture rather than a simple administrative hierarchy.

This layered organisation is commonly described through the concept of multi-level governance. Within political science and public administration, the term generally refers to the distribution of authority across different territorial and institutional levels, emphasising the need for coordination between organisations operating within distinct legal and administrative competences. The concept has become particularly influential within the European Union, where decision-making frequently involves complex interactions between local authorities, national governments, European institutions and numerous specialised agencies. Multi-level governance is therefore often presented as an administrative framework that allows complex political systems to function despite the distribution of responsibilities across multiple actors.

While this interpretation remains valuable, it captures only part of the phenomenon. Administrative coordination explains how different institutions organise their responsibilities, but it does not fully explain how governance develops coherent understanding across multiple levels of decision-making. Public challenges rarely arrive neatly separated according to constitutional competences. Climate adaptation simultaneously affects local infrastructure, regional planning, national legislation and international agreements. Artificial intelligence influences municipal public services, national regulatory frameworks, European legislation and global technological governance. Economic resilience, migration, cybersecurity and public health all display similar characteristics. These issues require more than coordinated administration. They require distributed systems capable of constructing shared interpretations of complex realities across institutional scales.

From the perspective of Institutional Cognition, this observation leads to a different understanding of multi-level governance. The various levels of public administration should not be viewed merely as administrative layers through which authority is distributed. They also function as complementary cognitive perspectives through which society observes itself. Every level of governance possesses access to forms of knowledge that cannot be fully replicated elsewhere. Local institutions understand operational realities and community needs with exceptional detail. Regional administrations identify territorial patterns that extend beyond municipal boundaries. National governments integrate strategic priorities across entire countries, while international organisations recognise global interdependencies that remain largely invisible from narrower perspectives. None of these institutional viewpoints is sufficient independently. Together, however, they create the possibility of constructing far richer representations of societal complexity than any single level could achieve alone.

This cognitive interpretation transforms the meaning of coordination. Coordination is no longer understood simply as the efficient alignment of administrative activities or policy implementation. It becomes the mechanism through which different institutional perspectives contribute to shared understanding. Information flows upward and downward across governance levels, interpretations are continuously refined through interaction and collective intelligence gradually emerges from the integration of multiple institutional viewpoints. Governance evolves

into a distributed process of learning in which each level simultaneously contributes to and benefits from the understanding developed by the wider system.

The previous articles in this series have progressively established many of the concepts necessary to appreciate this broader perspective. We have explored institutions as cognitive systems, collective intelligence, collaboration, interoperability and trust as the infrastructures that enable distributed institutional learning. Those concepts naturally prepare the way for examining how cognition operates across entire governance architectures rather than within individual organisations or isolated institutional networks. Multi-level governance represents one of the most important examples of distributed cognition because it demonstrates how different scales of public administration collectively participate in understanding and governing increasingly complex societies.

This perspective becomes particularly significant as governments confront challenges whose complexity extends simultaneously across local, national and global dimensions. Digital transformation, ecological transition, geopolitical instability, demographic evolution and the rapid development of artificial intelligence all require institutions operating at different levels to coordinate not only their actions but also their interpretations of reality. Governance can no longer depend upon isolated decision-making within separate administrative layers. Instead, it increasingly requires cognitive architectures capable of integrating diverse forms of knowledge into coherent public understanding while respecting constitutional diversity and democratic legitimacy.

The purpose of this article is to explore multi-level governance through this cognitive lens. Rather than viewing it primarily as a mechanism for distributing political authority, it examines how layered institutional systems collectively generate Governance Intelligence. By understanding local, regional, national and international institutions as complementary components of a distributed cognitive architecture, we begin to recognise that the future effectiveness of public governance depends not simply upon better coordination between administrative levels but upon their ability to think, learn and evolve together as a unified yet diverse institutional ecosystem.

From Administrative Layers to Layered Cognition

Multi-level governance is traditionally represented as a system of administrative layers through which public authority is distributed according to constitutional responsibilities. Local governments provide services that respond directly to the needs of communities, regional administrations coordinate territorial development, national governments establish legislative and strategic frameworks, while international institutions address challenges that transcend national borders. This description accurately reflects the organisational structure of modern governance, yet it remains largely administrative in nature. It explains where responsibilities are located but tells us comparatively little about how understanding itself is constructed across these different institutional levels.

The perspective of Institutional Cognition invites a more comprehensive interpretation. Rather than viewing these levels simply as organisational arrangements, they can be understood as complementary layers of observation that together enable society to construct increasingly sophisticated representations of reality. Each institutional level occupies a distinct cognitive position within the governance ecosystem. Because every level observes society from a different scale, each generates forms of knowledge that cannot be fully reproduced elsewhere. The value

of multi-level governance therefore lies not only in distributing authority but also in distributing perception, interpretation and learning across multiple institutional perspectives.

This distinction becomes particularly significant when considering the complexity of contemporary public challenges. Reality rarely presents itself at a single administrative scale. Local communities experience the practical consequences of housing shortages, demographic ageing, environmental change or digital transformation through everyday interactions with public services. Regional institutions recognise broader territorial dynamics that connect neighbouring communities and reveal patterns extending beyond municipal boundaries. National governments integrate economic, legal and strategic considerations affecting the country as a whole, while international organisations identify transnational developments whose significance cannot be fully appreciated within any individual jurisdiction. Each perspective captures genuine aspects of reality, yet none provides a complete understanding independently. Collective intelligence emerges only when these different scales of observation become cognitively integrated.

This layered distribution of knowledge resembles the way complex natural systems process information. Biological organisms constantly combine signals originating at different levels of organisation. Individual cells respond to local conditions, specialised organs integrate wider physiological information and the nervous system constructs representations of the organism as a whole while simultaneously responding to changes in the surrounding environment. Intelligence emerges through continuous interaction between these different scales rather than through the dominance of any single level. Governance exhibits a similar characteristic. Local institutions remain indispensable because they detect changes that broader organisations may overlook, while higher levels contribute strategic perspectives unavailable to local administrations. Effective governance depends upon preserving the unique cognitive contribution of every level while integrating them into coherent institutional understanding.

This interpretation also helps explain why attempts to centralise all decision-making frequently encounter significant limitations. Central institutions may possess considerable analytical resources and broad strategic vision, yet they inevitably remain more distant from the operational realities experienced within individual communities. Conversely, local administrations often possess exceptionally detailed knowledge of immediate circumstances but may lack the broader perspective necessary to understand national or international developments shaping those circumstances. Neither perspective is inherently superior because each observes different dimensions of reality. The objective of multi-level governance is therefore not to determine which level should dominate but to enable every level to contribute its distinctive understanding to the wider cognitive system.

Equally, the cognitive perspective demonstrates why excessive fragmentation can become as problematic as excessive centralisation. If institutional levels operate independently without effective mechanisms for exchanging knowledge, governance gradually loses the capacity to construct coherent interpretations of increasingly interconnected problems. Local innovations may remain invisible beyond municipal boundaries, regional experience may fail to influence national strategy and international developments may not be translated effectively into local implementation. Each level continues generating valuable knowledge, yet the absence of cognitive integration prevents that knowledge from contributing fully to collective intelligence. Administrative coordination alone cannot solve this problem because what is lacking is not simply organisational alignment but shared understanding across institutional scales.

The movement of knowledge between governance levels should therefore be understood as a continuous cognitive process rather than a one-directional administrative flow. Traditional depictions often suggest that information moves upwards for reporting purposes while policy moves downwards for implementation. Contemporary governance operates in a far more dynamic manner. Local experience continuously reshapes regional understanding, regional analysis influences national priorities, national strategies guide local adaptation and international developments encourage institutional learning throughout the entire governance ecosystem. Knowledge moves simultaneously in multiple directions because every institutional level both contributes to and benefits from the collective interpretation constructed by the wider system.

Governance becomes an ongoing conversation between complementary cognitive perspectives rather than a linear chain of command.

Artificial intelligence is likely to strengthen these multidirectional relationships considerably. Increasingly sophisticated analytical systems can help governments integrate information originating from different institutional levels, identify patterns extending across territorial scales and support collaborative interpretation involving numerous public organisations simultaneously. Local operational data may be connected with regional environmental indicators, national economic trends and international scientific research to produce richer representations of complex societal dynamics than any individual institution could develop independently. Yet these technological capabilities reinforce rather than replace the importance of layered institutional cognition. Artificial intelligence can assist in revealing relationships across multiple scales, but the interpretation of those relationships remains fundamentally dependent upon institutions possessing complementary forms of expertise and democratic legitimacy.

An equally important consequence of this perspective concerns the relationship between diversity and coherence. Multi-level governance does not require every institutional level to observe reality in identical ways. On the contrary, cognitive diversity represents one of its greatest strengths. Different governance levels necessarily develop different priorities, methodologies and operational experiences because they engage with different dimensions of public life. Local administrations remain closely connected to citizens and service delivery, regional institutions concentrate upon territorial coordination, national governments balance competing strategic objectives and international organisations address global interdependencies. The intelligence of the governance system arises precisely because these diverse perspectives complement one another. Layered cognition therefore depends upon preserving difference while ensuring that differences remain interoperable through continuous institutional dialogue.

Over time, the interactions between these governance levels create increasingly sophisticated forms of institutional learning. Knowledge generated locally influences broader strategic thinking, while higher-level perspectives enrich local decision-making with wider contextual understanding. Each cycle of collaboration strengthens the ability of the governance ecosystem to integrate distributed observations into coherent public judgement. The layered architecture itself becomes progressively more intelligent because every successful exchange contributes to the collective memory and adaptive capacity of the wider institutional system. Multi-level governance evolves from a constitutional arrangement into a continuously learning cognitive architecture capable of responding to complexity with increasing coherence.

Seen from this broader perspective, administrative layers should no longer be understood merely as divisions of governmental responsibility. They represent complementary levels of institutional cognition through which societies observe themselves, interpret change and coordinate collective action. The effectiveness of governance therefore depends not only upon assigning responsibilities appropriately but also upon enabling knowledge to circulate intelligently between these different scales of observation. Multi-level governance succeeds when every level retains its distinctive perspective while contributing continuously to a shared process of collective understanding.

This naturally raises a further question. If each level of governance contributes unique knowledge to the wider cognitive system, how does their interaction generate forms of intelligence that exceed the capabilities of any individual level alone?

Distributed Cognition Across Governance Levels

Once multi-level governance is understood as a layered cognitive architecture rather than simply an administrative arrangement, a further implication becomes apparent. The intelligence of the governance system does not reside at any individual institutional level. It emerges through the continuous interaction between all of them. Local authorities, regional administrations, national governments and international organisations each contribute partial representations of reality, yet the capacity to understand complex public challenges develops only when these different perspectives are integrated into a coherent process of distributed cognition.

This principle reflects one of the central ideas developed throughout the IDHUS research programme: **complex systems cannot be understood adequately from a single observational position**. Every observer, whether human or institutional, occupies a particular perspective that reveals certain aspects of reality while inevitably obscuring others. Public governance is no exception. A municipality possesses intimate knowledge of community needs, operational constraints and the practical consequences of public policy. A regional administration identifies territorial dynamics that extend across neighbouring jurisdictions. National governments observe macroeconomic trends, constitutional priorities and strategic policy interactions, while international organisations recognise transnational developments that remain largely invisible when viewed exclusively from within national borders. Each institutional level therefore contributes a legitimate but necessarily incomplete understanding of the wider system.

Distributed cognition allows these incomplete perspectives to become mutually complementary rather than mutually limiting. Instead of attempting to replace one another's observations, institutions progressively integrate them into broader representations that none could have constructed independently. The process resembles the assembly of a complex mosaic in which each individual piece appears limited when considered in isolation but contributes indispensable information to the complete image. Collective intelligence is therefore not produced by increasing the cognitive capacity of individual institutions alone but by improving the quality of the relationships through which their different observations are combined.

This understanding fundamentally changes the purpose of coordination within governance systems. Coordination is often interpreted as the alignment of administrative activities to avoid duplication, improve efficiency or ensure policy consistency. While these objectives remain important, they represent only part of its cognitive significance. From the perspective of Institutional Cognition, coordination enables institutions to compare interpretations, reconcile different forms of evidence and construct increasingly coherent understandings of complex societal realities. The objective is not simply coordinated action but coordinated understanding. Public policies become more effective because they emerge from richer cognitive processes rather than merely from better administrative organisation.

One of the defining strengths of distributed cognition is its ability to detect patterns that remain imperceptible from individual institutional viewpoints. Local administrations may observe changes in housing demand, educational outcomes or public health within their own communities without recognising broader national trends. National authorities may identify macroeconomic developments while overlooking operational challenges affecting particular regions. International organisations may detect global technological transformations whose local implications are not yet fully visible. When these observations are brought together through interoperable governance networks, relationships gradually emerge that would otherwise remain hidden. Distributed cognition therefore expands the perceptual capacity of governance itself, enabling institutions collectively to understand phenomena that exceed the cognitive reach of any single participant.

This capability becomes increasingly valuable as governments confront policy challenges characterised by multiple interacting causes rather than isolated problems. Climate adaptation illustrates this particularly clearly. Local authorities observe flooding risks, infrastructure vulnerabilities and community resilience. Regional administrations examine watershed management, land-use planning and environmental coordination across wider territories. National governments integrate economic strategy, legislative reform and investment priorities, while international organisations monitor global climate dynamics and facilitate international cooperation. Each level generates valuable knowledge, yet none possesses a complete representation of the challenge. Adaptive governance emerges when these different perspectives continuously inform one another, creating a shared understanding capable of guiding coherent public action across all institutional scales.

Artificial intelligence has the potential to strengthen this distributed cognitive architecture considerably. Advanced computational systems can integrate vast quantities of information originating from different governance levels, identify emerging correlations across multiple policy domains and support collaborative interpretation by institutions with complementary expertise. Data generated by municipalities may be analysed alongside regional environmental indicators, national economic statistics and international scientific research, allowing governments to construct far richer models of societal change than traditional administrative processes could achieve alone. Nevertheless, artificial intelligence should be understood as an amplifier of distributed cognition rather than its source. The interpretation of complex realities continues to depend upon institutions that possess democratic legitimacy, professional expertise and constitutional responsibility. Technology enhances institutional cognition but does not replace the distributed human judgement upon which Governance Intelligence ultimately rests.

Distributed cognition also transforms the way governance systems learn over time. Each institutional level accumulates experience through its own responsibilities, yet this experience becomes progressively more valuable when it contributes to collective learning across the wider governance architecture. Innovations developed locally may inspire national reform. International experience may inform regional experimentation. Strategic national initiatives may generate practical improvements within municipal public services, while operational experience gathered locally may reshape international policy discussions. Learning therefore moves continuously across institutional scales, allowing governance to evolve as a single adaptive system despite the diversity of its organisational components.

This continuous exchange creates important feedback mechanisms that strengthen the resilience of governance. Information no longer travels in a linear sequence from local implementation to national oversight or from international agreements to domestic execution. Instead, every institutional level participates simultaneously in observing, interpreting and influencing the evolution of the wider system. Local realities reshape strategic thinking, strategic priorities influence operational practice and new experiences generated through implementation immediately contribute to future institutional learning. Governance becomes recursive rather than hierarchical, with every cycle of observation enriching the collective understanding available to all participating institutions.

An equally significant consequence concerns democratic legitimacy. Distributed cognition should never be interpreted as transferring authority away from constitutionally responsible institutions towards abstract governance networks. On the contrary, each institutional level continues to exercise its own democratic and legal responsibilities while contributing knowledge to the wider cognitive ecosystem. Local governments remain accountable to their communities, national governments continue to establish strategic direction and international organisations fulfil the mandates assigned to them by participating states. Distributed cognition strengthens rather than weakens constitutional governance because it enables each institution to make decisions based upon a richer understanding of the realities within its own sphere of responsibility.

Over time, these recursive processes gradually transform multi-level governance into a continuously evolving system of institutional intelligence. Each successful cycle of knowledge exchange enriches the collective memory of the governance ecosystem, strengthens

relationships between institutional levels and improves the ability of the system to interpret future developments. Intelligence therefore accumulates not only within individual organisations but also within the architecture connecting them. Governance itself becomes progressively more capable of recognising complexity, adapting to uncertainty and coordinating coherent responses across multiple institutional scales.

Seen from this broader perspective, distributed cognition represents the true operational logic of multi-level governance. The different layers of public administration are not simply organisational divisions established for administrative convenience. They are complementary cognitive perspectives whose continuous interaction enables society to understand challenges that exceed the capacity of any individual institution or governance level. The effectiveness of future public administration will therefore depend increasingly upon cultivating governance architectures in which local, regional, national and international institutions learn not merely to cooperate but to think together as components of an integrated cognitive system.

This naturally leads towards the concluding stage of the article. If multi-level governance functions as a distributed cognitive architecture, what does this imply for the future evolution of public administration? The final section reflects upon why layered institutional cognition should be regarded as one of the defining organisational principles of Governance Intelligence and one of the essential foundations for adaptive governance in an increasingly interconnected world.

Conclusion

Multi-level governance has traditionally been understood as an administrative framework through which responsibilities are distributed across local, regional, national and international institutions. This perspective has provided valuable insights into constitutional organisation, public administration and policy coordination, particularly within increasingly interconnected political systems such as the European Union. Yet throughout this article we have argued that this interpretation captures only part of the significance of multi-level governance. Beyond its administrative function, it should also be understood as a cognitive architecture through which societies collectively observe, interpret and respond to complex realities.

The central argument developed here is that **no single level of governance possesses sufficient knowledge to understand the complexity of contemporary public challenges independently**. Every institutional level occupies a unique observational position that reveals particular dimensions of reality while inevitably limiting access to others. Local governments experience the immediate consequences of public policy and maintain close relationships with citizens. Regional administrations identify territorial patterns that extend beyond municipal boundaries. National governments integrate strategic priorities, legislative frameworks and economic perspectives, while international institutions recognise transnational dynamics that exceed the reach of individual states. Each perspective is indispensable, yet each remains necessarily partial. Governance Intelligence emerges only when these complementary viewpoints become integrated into a coherent process of distributed cognition.

Seen from this perspective, coordination acquires a deeper meaning than is usually attributed to it. Effective coordination is not limited to aligning administrative procedures or ensuring consistent policy implementation. It also enables institutions operating at different scales to construct shared interpretations of increasingly interconnected societal challenges. Knowledge flows continuously between governance levels, observations are refined through reciprocal learning and collective understanding gradually becomes richer than the sum of its individual contributions. Coordination therefore functions as a cognitive process through which distributed expertise becomes coherent public judgement.

The article has also demonstrated that this layered architecture enables governance to address complexity in ways that isolated institutions cannot achieve. Contemporary challenges such as climate adaptation, artificial intelligence, demographic transformation, cybersecurity or economic resilience simultaneously affect multiple institutional levels. They cannot be fully understood from local experience alone, nor exclusively through national strategy or international analysis. Adaptive governance depends upon integrating observations originating from every level into common representations that allow coherent public action despite the diversity of institutional responsibilities. Multi-level governance succeeds because it transforms constitutional diversity into cognitive diversity, allowing different perspectives to reinforce rather than compete with one another.

Particular emphasis has been placed upon the relationship between distributed cognition and institutional learning. Every governance level accumulates valuable experience through its own operational responsibilities, yet that experience becomes significantly more powerful when it contributes to collective learning across the wider governance ecosystem. Local innovation may influence national policy. Regional experimentation may inspire international cooperation. Global developments may reshape local public services. Learning therefore moves continuously across institutional scales, enabling governance to evolve as an integrated adaptive system instead of a collection of separate administrative organisations. The intelligence of the system increases because every successful exchange enriches the collective memory available to all participating institutions.

Artificial intelligence is likely to strengthen these dynamics considerably by enhancing the capacity of governance systems to integrate evidence originating from multiple institutional levels. Advanced analytical platforms, semantic reasoning systems, digital twins and collaborative decision-support environments will increasingly assist governments in identifying relationships that extend across administrative scales and policy domains. Nevertheless, these technologies do not replace the cognitive architecture of multi-level governance. Their value depends upon institutions that possess complementary expertise, democratic legitimacy and constitutional responsibility. Artificial intelligence expands the analytical capabilities of governance, but layered institutional cognition continues to provide the interpretative framework through which computational insights become meaningful public judgement.

Perhaps the most significant implication concerns the future design of governance itself. Governments should no longer regard multi-level governance merely as an administrative necessity created by constitutional complexity or political decentralisation. It should instead be recognised as one of the principal organisational mechanisms through which modern societies generate collective intelligence. Every governance level contributes unique forms of observation, interpretation and experience that strengthen the cognitive capacity of the wider institutional ecosystem. The effectiveness of future public administration will therefore depend increasingly upon designing relationships that enable these different perspectives to interact continuously while preserving their distinctive constitutional roles.

This understanding also highlights why excessive centralisation and excessive fragmentation represent opposite expressions of the same underlying limitation. Centralisation risks concentrating decision-making within perspectives that cannot fully perceive local realities, while fragmentation prevents institutions from integrating their observations into coherent collective understanding. Multi-level governance offers an alternative because it preserves diversity without sacrificing coherence. Institutions remain autonomous within their constitutional competences while participating in shared processes of institutional learning, knowledge exchange and collaborative interpretation. The architecture becomes neither fully hierarchical nor completely decentralised but cognitively integrated.

Ultimately, multi-level governance should be recognised as one of the constitutional foundations of Institutional Cognition. It transforms different territorial and institutional scales into complementary layers of observation capable of constructing representations of reality that no single governance level could achieve independently. By enabling distributed cognition across local, regional, national and international institutions, it creates the conditions through which Governance Intelligence can emerge in response to the growing complexity of contemporary societies. The future of adaptive public administration will therefore depend not simply upon improving coordination between different levels of government but upon cultivating governance architectures in which every institutional perspective contributes continuously to a common process of collective understanding.