

**NEXIALISM AS AN EMERGING INTERDISCIPLINARY CONSTRUCT: A  
SYSTEMATIC LITERATURE REVIEW AND PROPOSAL FOR AN  
OPERATIONAL CONCEPTUAL MODEL**

**NEXIALISMO COMO CONSTRUCTO INTERDISCIPLINAR EMERGENTE:  
REVISÃO SISTEMÁTICA DA LITERATURA E PROPOSTA DE MODELO  
CONCEITUAL OPERACIONAL**

**EL NEXIALISMO COMO CONSTRUCCIÓN INTERDISCIPLINARIA  
EMERGENTE: UNA REVISIÓN SISTEMÁTICA DE LA LITERATURA Y UNA  
PROPUESTA PARA UN MODELO CONCEPTUAL OPERACIONAL**



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**ABSTRACT**

The increasing complexity of contemporary problems has revealed structural limitations of disciplinary hyper-specialization, particularly in sociotechnical, regulatory, and educational contexts. In this scenario, the concept of nexialism, originally derived from science fiction, has been sporadically appropriated by academic literature as a metaphor and heuristic for knowledge integration. This article aims to systematically map the scientific literature that employs the terms nexialism and nexialist, critically analyze their conceptual uses, and propose a theoretical-operational model that enables empirical application. A qualitative systematic literature review was conducted following PRISMA-inspired guidelines, using recognized scientific databases. Results indicate that nexialism does not constitute a consolidated theoretical field but emerges as an interdisciplinary construct associated with knowledge integration, mediation among specialists, systems thinking, and the management of unintended consequences. Based on thematic synthesis, a conceptual model with five latent dimensions and an initial measurement framework is proposed. The study concludes that nexialism holds significant analytical potential for addressing complex problems, although systematic empirical validation remains necessary.

**Keywords:** Nexialism. Interdisciplinarity. Systems Thinking. Complexity. Systematic Literature Review.

**RESUMO**

A crescente complexidade dos problemas contemporâneos tem evidenciado os limites do paradigma da hiperespecialização disciplinar, sobretudo em contextos sociotécnicos, regulatórios e educacionais. Nesse cenário, o conceito de nexialismo, originalmente oriundo da ficção científica, passou a ser apropriado pontualmente pela literatura acadêmica como metáfora e heurística para integração do conhecimento. O presente artigo tem por objetivo

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mapear sistematicamente a produção científica que emprega os termos “nexialismo” e “nexialista”, analisar criticamente seus usos conceituais e propor um modelo teórico-operacional que permita sua aplicação empírica. Metodologicamente, realizou-se uma revisão sistemática de literatura qualitativa, inspirada no protocolo PRISMA, em bases científicas reconhecidas. Os resultados indicam que o nexialismo não constitui um campo teórico consolidado, mas emerge como constructo interdisciplinar associado à integração de saberes, mediação entre especialistas, pensamento sistêmico e gestão de consequências não intencionais. A partir da síntese temática, propõe-se um modelo conceitual com cinco dimensões latentes e um instrumento inicial de mensuração. Conclui-se que o nexialismo apresenta elevado potencial analítico para o enfrentamento de problemas complexos, carecendo, contudo, de validação empírica sistemática.

**Palavras-chave:** Nexialismo. Interdisciplinaridade. Pensamento Sistêmico. Complexidade. Revisão Sistemática da Literatura.

## RESUMEN

La creciente complejidad de los problemas contemporáneos ha puesto en evidencia las limitaciones estructurales de la hiperespecialización disciplinaria, especialmente en contextos sociotécnicos, regulatorios y educativos. En este escenario, el concepto de nexialismo, originalmente derivado de la literatura de ciencia ficción, ha sido apropiado de manera puntual por la literatura académica como una metáfora y una heurística para la integración del conocimiento. El presente artículo tiene como objetivo mapear sistemáticamente la producción científica que emplea los términos nexialismo y nexialista, analizar críticamente sus usos conceptuales y proponer un modelo teórico-operacional que permita su aplicación empírica. Metodológicamente, se llevó a cabo una revisión sistemática de la literatura de carácter cualitativo, inspirada en las directrices del protocolo PRISMA, utilizando bases científicas reconocidas. Los resultados indican que el nexialismo no constituye un campo teórico consolidado, sino que emerge como un constructo interdisciplinario asociado a la integración de saberes, la mediación entre especialistas, el pensamiento sistémico y la gestión de consecuencias no intencionadas. A partir de la síntesis temática, se propone un modelo conceptual con cinco dimensiones latentes y un marco inicial de medición. Se concluye que el nexialismo presenta un elevado potencial analítico para el abordaje de problemas complejos, aunque aún requiere validación empírica sistemática.

**Palabras clave:** Nexialismo. Interdisciplinariedad. Pensamiento Sistémico. Complejidad. Revisión Sistemática de la Literatura.

## 1 INTRODUCTION

The contemporary organization of science is marked by a structural paradox: disciplinary specialization, although responsible for significant technical advances, has produced a cognitive fragmentation that makes it difficult to understand complex and interdependent phenomena (MORIN, 2011). Problems such as technological governance, regulation of digital systems, complex public policies, and educational transformation resist monodisciplinary approaches.

In this context, different theoretical proposals emerge with the objective of recomposing the unity of knowledge, including interdisciplinarity, transdisciplinarity and systemic thinking (JAPIASSU, 1976; CAPRA; LUISI, 2014). In an incipient way, the concept of nexialism also emerges, associated with the ability to integrate diverse knowledge in an orderly and functional way.

Although the term originates in science fiction literature, it is now mobilized in academic texts, especially in the areas of Information Technology and higher education, as a metaphor for dealing with complex interdependencies and unintended consequences of technical and normative decisions (LAPLANTE, 2010; VOAS et al., 2011). However, the use of the concept remains dispersed and lacking in scientific systematization.

In addition, it is observed that the growing complexity of decision-making systems has imposed not only operational but also epistemological challenges to scientific research. The production of knowledge begins to face difficulties in capturing phenomena that do not present themselves in a stable, delimited or repeatable way. In this context, emerging concepts tend to emerge even before their complete theoretical formalization, functioning as provisional attempts to name practices and experiences still in the process of consolidation.

Science, when dealing with this type of phenomenon, is faced with a recurring dilemma: ignore emerging concepts due to lack of immediate empirical ballast or incorporate them uncritically, at the risk of inflating the conceptual field. This article positions itself between these two extremes, assuming that the investigation of concepts still in formation can be legitimate, as long as it is conducted with methodological rigor and clarity as to its limitations.

In this sense, nexialism is understood here not as a definitive answer to the challenges of complexity, but as an indication of a contemporary demand for less fragmented forms of thought and decision. Its recurrence in professional and strategic discourses suggests that there is a gap between the available theoretical models and the practical demands faced by decision-makers in interdependent environments.

The introduction of this concept into the academic debate allows, therefore, to problematize not only the object itself, but also the criteria by which science decides what deserves or does not deserve investigation. By treating nexialism as an exploratory construct, the article contributes to a broader reflection on the limits and possibilities of scientific production in contexts marked by uncertainty, fluidity, and continuous transformation.

Finally, it is important to highlight that the methodological choice adopted in this study reflects this concern. By privileging a qualitative and analytical approach, the article seeks to offer conceptual density and argumentative clarity, avoiding both descriptive superficiality and the pretense of premature generalization.

In view of this, this article seeks to answer the following research question: how has the concept of nexialism been employed in the scientific literature and to what extent can it be systematized as an operationalized interdisciplinary construct?

## 2 METHODOLOGY

This is a systematic literature review (RSL) of a qualitative nature, with narrative synthesis, inspired by the guidelines of the PRISMA protocol, suitable for emerging fields with low empirical density (GALVÃO; RICARTE, 2019).

The searches were conducted exclusively in recognized scientific databases, including Google Scholar, IEEE Computer Society journals, indexed university repositories, and DOI registries. The following strings were used: *nexialism*, *nexialist*, *nexialism* and *nexialist*.

Peer-reviewed articles, institutionally curated academic texts, and qualified gray literature were included, as long as they presented a definition, application, or substantive conceptual discussion of the term. Non-scientific content was excluded.

The selected texts were analyzed by thematic synthesis, with open and axial coding, allowing the identification of recurrent conceptual patterns (BARDIN, 2016).

## 3 RESULTS

### 3.1 OVERVIEW OF LITERATURE

The review revealed a small body of scientific publications that explicitly use the terms nexialism or nexialist. These publications concentrate, above all, on essayistic texts in the areas of Information Technology, higher education and interdisciplinary studies (LAPLANTE, 2010; VOAS et al., 2011; LOVE, 2008).

No quantitative empirical studies or validated instruments for measuring the construct were identified, which evidences the emerging character of the theme.

### 3.2 FRAMEWORK OF CONSTRUCTS ASSOCIATED WITH NEXIALISM

The thematic analysis allowed the identification of six central constructs, summarized in Table 1, which organizes the main findings of the review.

**Table 1**

*Constructs associated with nexialism in the scientific literature*

Construct	Synthetic Description	Key References
Orderly integration of knowledge	Ability to articulate knowledge from different domains in a coherent and functional way	TOOHEY, n.d.; LOVE, 2008
Interdisciplinary mediation and translation	Acting as a cognitive and communicational bridge between specialists	TOOHEY, n.d.; VOAS et al., 2011
Systems thinking	Analysis of interdependencies, feedbacks and second-order effects	LAPLANTE, 2010
Anticipation of unintended consequences	Identification and mitigation of side effects of technical or regulatory decisions	LAPLANTE, 2010
Critique of hyperspecialization	Diagnosis of disciplinary fragmentation as an obstacle to the solution of complex problems	VOAS et al., 2011
Absence of formal criteria	Lack of metrics, training or scientific validation of nexialism	TOOHEY, n.d.

Source: prepared by the authors.

## 4 DISCUSSION

The results indicate that nexialism is not configured as a consolidated scientific theory, but as an emerging interdisciplinary construct, used predominantly as an analytical metaphor. Its use converges to an explicit critique of hyperspecialization and to the defense of integrative approaches, especially in contexts marked by high complexity and systemic risk (LAPLANTE, 2010).

Unlike classical interdisciplinarity, nexialism emphasizes the figure of the cognitive mediator, capable of integrating knowledge and anticipating unintended consequences, approaching applied systemic thinking (CAPRA; LUISI, 2014). However, the absence of formal criteria for training and measurement limits its consolidation as a scientific object.

The discussion of nexialism also sheds light on an aspect that is often underexplored in the literature on complexity: the role of intermediary agents in decision-making processes. While most studies focus on structures, systems, or policies, nexialism draws attention to subjects who operate at the intersection of fields, areas, and interests, performing functions that escape traditional descriptions of institutional positions or roles.

These actors do not necessarily have formal authority or superior technical expertise in all the fields involved. Its relevance stems from its ability to articulate perspectives, identify inconsistencies, and anticipate collateral effects of fragmented decisions. This performance, although empirically observable, remains little theorized, which reinforces the potential of nexialism as a provisional analytical category.

Another relevant point concerns the temporal dimension of decisions. The reviewed literature tends to emphasize immediate results or measurable short-term impacts, while nexialism explicitly introduces concern with deferred and cumulative effects. This temporal expansion brings the concept closer to debates on sustainability, governance, and intergenerational responsibility, even though nexialism does not present itself as a normative theory in these fields.

From a critical point of view, it is necessary to recognize that the semantic breadth of nexialism constitutes both its strength and its fragility. If, on the one hand, this breadth allows for dialogue with different theoretical traditions, on the other hand, it requires additional delimitation efforts to avoid excessive overlap with already consolidated concepts. This tension reinforces the need for empirical studies that explore specific contexts of application of the concept.

Finally, the discussion suggests that nexialism can play a relevant role as an articulating concept, capable of connecting dispersed debates on complexity, interdisciplinarity, decision-making, and ethics. Although this articulation does not constitute a new theory, it contributes to the construction of a vocabulary that is more sensitive to the contemporary demands of cognitive integration and systemic responsibility.

## **5 PROPOSAL FOR A CONCEPTUAL MODEL (NEX-MODEL)**

Based on the synthesis of the results, the NEX-Model is proposed, structured in five latent dimensions:

### **5.1 COGNITIVE INTEGRATION**

Cognitive integration is perhaps the most silent competence of the Nexialist—and, at the same time, the most decisive. It does not manifest itself as a strong opinion or as an ostensible technical mastery. It appears as a persistent restlessness in the face of isolated information. The Nexialist is suspicious of data that does not talk to each other. For him, knowing is not accumulating content, but organizing relationships.

While many professionals deal with information as loose parts, the Nexialist works with maps. He tries to understand how decisions, facts, and narratives fit into a bigger picture.

This ability is not born of scattered curiosity, but of an internal discipline: the refusal to accept explanations that do not hold up when seen together.

To integrate cognitively is also to recognize limits. The Nexialist knows that no field explains everything. Therefore, he is not satisfied with answers that solve a local problem and create invisible ones. Their attention is always focused on what is outside the main focus, on the margins of the dominant reasoning.

This competence requires time, listening, and willingness to review assumptions. In a world that values speed and immediate completions, cognitive integration is almost an act of resistance. It protects the system from hasty decisions and creates the conditions for more coherent choices, even when they are not the easiest.

## 5.2 STRATEGIC MEDIATION

Strategic mediation is born from the perception that many contemporary conflicts are not of interest, but of language. Competent people disagree not because they want opposite things, but because they operate from different references. The Nexialist perceives this mismatch before it turns into rupture.

Measuring does not mean reconciling superficially. The Nexialist does not seek artificial consensus or empty harmony. Their job is to make explicit hidden assumptions, to translate jargon, to reveal what is being assumed without being said. It creates space for different perspectives to recognize each other without canceling each other out.

This competence requires political sensitivity and intellectual clarity. The Nexialist knows that all translation involves loss and gain. Still, he takes this risk because he understands that the absence of mediation produces noise, rework, and incoherent decisions. Where there is misunderstanding, it introduces shared meaning.

Strategic mediation transforms the Nexialist into a point of stability in tense contexts. Not because it neutralizes conflicts, but because it makes them productive. It helps the system to extract learning from divergences instead of being paralyzed by them.

## 5.3 SYSTEMS THINKING IN ACTION

Nexialist's systems thinking is neither theoretical nor abstract. It manifests itself at the moment of decision, when the question "does it work?" is immediately followed by another: "what does it change in the system?". The Nexialist thinks in terms of chained effects, not just immediate results.

He knows that complex systems respond in a nonlinear way. Small changes can generate big impacts, while large interventions can produce minimal effects. Therefore, the

Nexialist is suspicious of grandiose solutions and pays attention to the invisible interdependencies that sustain the functioning of the whole.

Acting systemically requires accepting that there is no total control. The Nexialist works with probabilities, scenarios and provisional hypotheses. It does not seek to eliminate uncertainty, but to make it habitable. This posture reduces destructive surprises and expands the system's ability to adapt.

This competence differentiates the Nexialist from those who only "perform well". It is not limited to meeting defined objectives; He questions whether these goals make sense in light of global functioning. Its value lies in avoiding technically elegant and systemically fragile solutions.

#### 5.4 AWARENESS OF THE CONSEQUENCES

Awareness of the consequences is an ethical competence before being technical. The Nexialist knows that every decision produces effects that go beyond declared intentions. He learned—often by observing the faults of others—that the greatest damage does not come at the moment of choice, but after the choice seems to have worked.

Therefore, he is not satisfied with short-term analyses. Question about secondary impacts, residual risks, side effects, and decision-induced behavior changes. His gaze extends in time and space, even though he knows that it will never be complete.

This posture does not paralyze him. On the contrary, it makes your decisions more accountable. The Nexialist prefers conscious risks to invisible risks. He understands that deciding without considering consequences is not neutrality — it is negligence.

In organizational and social contexts, this competence becomes increasingly valuable. It protects the system against decisions that seem efficient on paper, but that erode trust, sustainability, or legitimacy over time.

#### 5.5 ANTI-SILO STANCE

The anti-silo stance is not a technique, but a constant choice. The Nexialist resists the natural tendency of organizations to fragment into autonomous and defensive territories. He realizes that silos don't arise only by structure, but by fear, identity, and power.

Being anti-silo doesn't mean rejecting specializations or ignoring functional boundaries. It means preventing these borders from becoming walls. The Nexialist traverses areas, connects people, and exposes interdependencies that many would prefer to ignore.

This posture often generates discomfort. The Nexialist questions decisions that "are not in his area", points out impacts that were not in the initial scope and insists on difficult

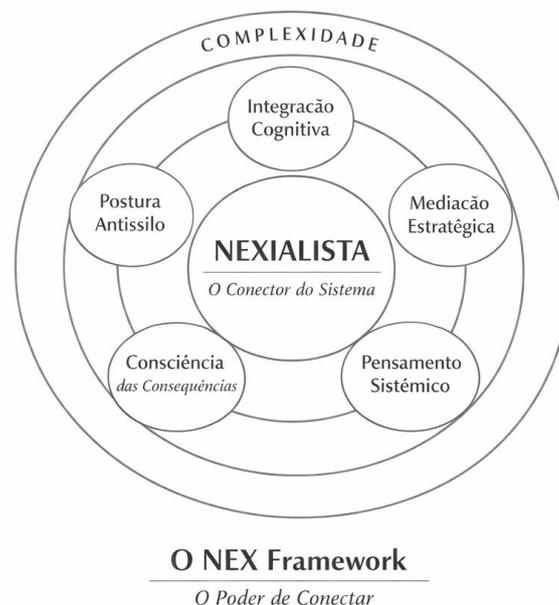
conversations. He accepts this cost because he knows that silence costs more in the long run.

The anti-silo stance underpins all other competencies. Without it, cognitive integration is fragmented, mediation is weakened, systemic thinking loses reach, and awareness of the consequences is limited. It is this that keeps the Nexialist faithful to his central function: to take care of the whole when everyone takes care of only the part.

The model assumes that such dimensions positively impact the quality of solutions, risk reduction, and interdisciplinary performance in complex environments.

## Figure 1

### *The NEX Framework: The Power of Connecting*



Source: Authors.

## 6 FINAL CONSIDERATIONS

Nexialism presents itself as a promising concept to face the epistemological limits of contemporary disciplinary fragmentation. Although it still lacks empirical validation, its conceptual systematization allows us to advance in the construction of a scientific construct applicable to educational, technological and legal contexts.

The reflections developed throughout this article indicate that the study of emerging concepts, such as nexialism, requires a methodological posture marked by caution and openness. Caution not to attribute undue theoretical status to categories still in formation;

openness to recognize that science also advances through the problematization of practices and discourses that precede its conceptual formalization.

In this sense, nexialism can be understood as a symptom of broader transformations in the ways of thinking and deciding in complex contexts. Its emergence reveals a growing dissatisfaction with overly fragmented approaches and points to the need for analytical models capable of dealing with interdependencies, uncertainties, and non-linear consequences.

From an epistemological point of view, the article suggests that the investigation of such concepts requires flexible methodologies, capable of articulating theoretical review, conceptual analysis and qualitative empirical observation. Future studies may explore nexialism through field research, organizational case analysis, or interviews with agents who perform systemic mediation functions.

In addition, there is room to critically examine the limits of the concept, identifying contexts in which cognitive and decision-making integration can generate new types of tension or overload. Recognizing these limits is essential to avoid idealized readings and preserve the analytical utility of nexialism.

In summary, by maintaining a critical and reflective stance, this article contributes to the broadening of the debate on how science can approach complex phenomena that are still poorly stabilized. Nexialism, as an exploratory construct, offers a fruitful starting point for future investigations, without pretense of conceptual closure or theoretical universalization.

As a future agenda, the psychometric validation of the proposed model is recommended, as well as its empirical application in interdisciplinary environments.

## REFERENCES

- Bardin, L. (2016). *Análise de conteúdo*. Edições 70.
- Capra, F., & Luisi, P. L. (2014). *The systems view of life: A unifying vision*. Cambridge University Press.
- Galvão, T. F., & Ricarte, I. L. M. (2019). Revisões sistemáticas da literatura: Conceitos, métodos e aplicações. *Revista Evidência*, 17(1), 1–17.
- Japiassu, H. (1976). *Interdisciplinaridade e patologia do saber*. Imago.
- Laplante, P. (2010). Nexialism and the law of unintended consequences. *IT Professional*, 12(4), 58–60. <https://doi.org/10.1109/MITP.2010.114>
- Love, J. (2008). *Meeting the challenges of integrative learning: The nexial perspective*. University Repository.
- Morin, E. (2011). *Introdução ao pensamento complexo*. Sulina.
- Toohy, K. D. (n.d.). *Towards a science of nexialism [Working paper]*.



Voas, J. M., Hurlburt, G., Miller, K., & Laplante, P. (2011). Thoughts on higher education and scientific research. *IT Professional*, 13(2), 6–9. <https://doi.org/10.1109/MITP.2011.34>