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POWER DIFFUSION AS THE THIRD DIMENSION OF COMPLEX INTERDEPENDENCE: CALIFORNIA AND *OPENAI* AS CASE STUDIES

Abstract

This paper analyzes the diffusion of power as the third dimension of complex interdependence (the first dimension being military and the second economic), a concept developed and later refined by American scholars Robert Keohane and Joseph Nye. By examining diffusion, or the dispersal of power, as one of the phenomena of international relations, the research focuses on subnational and transnational actors. Through two case studies – the U.S. state of California and the organization *OpenAI* – the paper investigates how economic, technological, and educational resources enable these actors to influence global power flows independently of the nation-state. The example of California demonstrates how a subnational entity can create innovative policies and set global standards in technology, education, and climate change. *OpenAI*, as a transnational private actor, shows that innovations in artificial intelligence can redefine the distribution of power and impact international relations beyond state structures. The paper illustrates that

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power diffusion is a dynamic process arising from the interaction of various actors, rather than a static state that can be "possessed". This process, however, is sometimes conditioned by ethical considerations and almost always by political and commercial constraints. At the same time, the role of subnational and transnational actors, in this interaction, points to a transformation in the nature of influence within the contemporary global order.

Keywords: diffusion of power, process, complex interdependence, subnational actors, transnational actors, California, *OpenAI*

INTRODUCTION

International relations theorists, both modern and traditional, regardless of the considerable number and quality of arguments each possesses, still lack a comprehensive and fully adequate conceptual framework for understanding global interdependence.[1] The previous statement reflects one of the conclusions from the fourth edition of the book *Power and Interdependence* (2011) by Princeton political scientist Robert O. Keohane and Harvard political scientist Joseph S. Nye. The authors argue that the "modernists" correctly identify fundamental changes taking place but largely assume – without sufficiently detailed analysis – that advances in technology and increases in social and economic transactions will lead to a *new world* in which states and their control over force will no longer be significant (Keohane and Nye 2011, 1–10). On the other hand, Keohane and Nye note that the "traditionalists" are skilled at highlighting the shortcomings of the modernist vision, emphasizing the continued relevance of military interdependence, but they find it very difficult to accurately interpret today's multidimensional economic, social, and ecological interdependence (Keohane and Nye 2011, 10–20).

[1] *Power and Interdependence* (Keohane and Nye 1977; 2011). This book was first published in 1977, in which the authors, Keohane and Nye, for the first time elaborate their theory of complex interdependence. They point out that it is a concept in international relations that takes into account the multiple ways in which states and non-state actors are interconnected through political, economic, social, and various other ties. The book argues that in an increasingly globalized world, military power becomes less significant compared to other forms of power.

The concept of complex interdependence, over the years, since it was first introduced in 1977, has undergone modifications and refinements in accordance with changes occurring in realpolitik. Already by 1997, in the second edition of the book *Understanding International Conflicts*, Nye described the distribution of power using the phrase "layered interdependence/interdependence at multiple levels," arguing that no existing single hierarchy of power adequately captures the dynamics of world politics (Nye 1997, 190). At that time, the author claimed that world politics resembled a *three-dimensional chess game/ board* (Nye 1997, 191). This cross-cutting game of power (*jeu croisé des pouvoirs*) was further elaborated in the fifth edition of *Understanding International Conflicts*, where Nye reiterates almost the same statement about a complex, three-dimensional chessboard, but adds that this interplay, as described in that edition, operates both horizontally and vertically (Naj 2006, 335). According to this theorist, who, in one sense, expressed his views on the distribution of power literally, but who, over time, also adapted them to the factual conditions of practical politics, he explains in a 2012, in his work: "At the top, on the first chessboard, military power is largely unipolar, and the United States will maintain its primacy for a certain period. On the middle chessboard, power is multipolar, as it has been for more than a decade, with major 'players' and others gaining significance. The lower chessboard is the domain of transnational and transgovernmental relations, which lie beyond state control and include actors such as transnational corporations, various investment funds, hackers threatening cyberspace, terrorists (and other groups and individuals). Here, power is highly *dispersed/diffused,* and it makes no sense to speak of polarity, whether unipolarity, bipolarity or multipolarity" (Nye 2012). From these premises, one can conclude that power has a multidimensional character and structure, in which military power constitutes the first dimension, economic power the second, and diffusion represents the third dimension of power. Keohane and Nye, in their most recent co-authored work, point out that global processes are increasingly shaped by phenomena such as cyberattacks, climate change, and the actions of terrorist networks, which they designate as "problems without passports" (Keohane and Nye 2025).

The question of power and its distribution in international relations is enveloped in a pluralism of perspectives, and there is no consensus among scholars addressing this issue, neither in the present time nor, likely, in the future, as noted by the authors of the article

Different Conceptions of Power in International Relations after the Cold War [*Različita viđenja rasporeda moći u međunarodnim odnosima posle Hladnog rata*], Prof. Dr. Dragan R. Simić and Dragan Živojinović (Simić i Živojinović 2013).

In this context, it is also necessary to consider some recently analyzed strategic conceptions and understandings of power. In a 2024 scholarly article titled *The United States' Grand Strategy – Is It Time for Offshore Balancing?* [*Velika strategija Sjedinjenih Država – da li je kucnuo čas za uravnotežavanje s obale?*] Stevan Nedeljković (whose stated aim is "to contribute to the academic debate through an analysis of offshore balancing, a grand strategy proposal emerging from the neorealist academic camp" (Nedeljković 2024, 475)) emphasizes that: "The history and nature of international relations lead to the conclusion that the American footprint in the world will decrease, but that moment has not yet arrived. Unfortunately, as usual, international relations are not particularly adept at predicting when that moment will come. Nevertheless, when it does, offshore balancing will be the most suitable strategy to protect American interests. Until then, Washington's best hope is a grand strategy of selective engagement – conserving rather than skimping, displaying muscle, but without engaging in unnecessary battles" (Nedeljković 2024, 493).

Given the already emphasized diversity of perspectives on the nature of power and its distribution in international relations, this study will, for the sake of scope, focus on complex interdependence, or interdependence at multiple levels, as a framework of power distribution (as developed by American scholars Keohane and Nye), with a particular focus on the third dimension of this concept – diffusion or the *dispersal of power*. For the purposes of this study, *power diffusion*[2] is understood as a process through which influence becomes dispersed across different levels of governance, so that the ability to shape outcomes no longer rests solely with states, but emerges through interactions among subnational, transnational, and state actors. Unlike related concepts, power diffusion does not refer to decentralization or delegation of authority, nor to multipolarity among states. Rather, it captures informal and often indirect forms of influence, especially those operating through

[2] For the purposes of this paper, the terms "power diffusion" and "diffusion of power" are used interchangeably. Although "power diffusion" is preferred for consistency, both terms are present in the literature and denote the same analytical concept.

norms, innovation, and regulatory practices. In this sense, diffusion can be observed in patterns such as the spread of standards, the replication of policy models, and the wider adoption of technological and institutional practices across different actors. These patterns can be understood as indicative dimensions of power diffusion, enabling its identification across different empirical contexts.

In this century, as Nye emphasizes in his book *Is the American Century Over?*, two processes or shifts in power are taking place: the first is a partial transition of power from the West to the East, and the second is the diffusion of power (*power diffusion*), which describes how power is transmitted and shared among governments and non-state actors. The emphasis is on the dynamics of interaction rather than a linear "transfer" of power (Nye 2015, 85).

In this study, the two selected case studies are the 31st U.S. state, located on the West Coast, California[3] and *OpenAI*, Inc., an American artificial intelligence organization headquartered in San Francisco, California. Although both entities share the same location, or spatial setting, except that in these cases, California represents a broader spatial context, the reasons for their selection are different. Considering that Keohane and Nye, both jointly and individually, in their books and articles, highlighted the rise of non-state and transnational actors – including various international organizations and corporations – that extend their influence through information flows in the "global information age" (Nye 2012), these case studies were chosen to address the research question**:** *How is the role of the subnational actor California and the transnational actor OpenAI manifested in the diffusion of power, as the third dimension of the concept of complex interdependence?* The starting point is to attempt to answer how these actors contribute to the transformation of traditional understandings of power in international relations and how their actions illuminate the procedural nature of *power diffusion.*

California was selected because, although it is a subnational administrative unit (Duran 2011),[4] California possesses economic and

[3] California ranks third among U.S. states in terms of land area and first in terms of population.

[4] The author claims that: "This article argues that the emergence of subnational entities on the international stage has transformed our thinking about the international environment and diplomacy. It also contributes to the literature on paradiplomacy by analyzing the diplomacy of the French region Provence-Alpes-

regulatory power that extends beyond the scope of its formal authority (both at the inter-state and federal levels) and enables it to exert global influence in areas such as climate and technology policy. *OpenAI*, as a transnational private actor, represents an example of how technological advancement and private innovations in the field of artificial intelligence become new levers of power and shape international relations beyond strictly state-based structures.

On this basis, by combining the cases of California and *OpenAI*, this paper examines how contemporary power is being redefined and dispersed across different levels of action and forms of influence. Methodologically, it adopts a qualitative approach based on content analysis and a comparative case study design. The selected cases represent analytically relevant examples of subnational and transnational actors whose influence extends beyond formal state authority, enabling an examination of the mechanisms through which power diffusion operates. The comparative design allows for the identification of both convergences and divergences in how diffusion manifests across different domains of governance.

In this study, *power diffusion* is defined as a process through which influence becomes increasingly dispersed across multiple and interconnected levels of governance, such that the capacity to shape outcomes is no longer monopolized by states, but emerges through interactions among state, subnational, and transnational actors. This approach moves beyond a purely descriptive use of the concept by treating power diffusion as an analytically traceable process whose effects are identified through cross-level alignment in regulatory, technological, and institutional domains.

Unlike decentralization or delegation of authority, power diffusion does not necessarily imply the formal transfer of competencies, nor does it refer to the distribution of capabilities among states within a multipolar system. Instead, it captures indirect and often informal mechanisms of influence operating through norms, technologies, regulatory practices, and institutional models. It is therefore understood as an empirically

Côte d'Azur. By focusing on the region's international activities and defining subnational diplomacy as a means of managing relations between itself and others, this article aims to gain a better understanding of the essence of paradiplomacy" (Duran 2011, 339). Following this line of thought, California was selected as a type of subnational entity, or administrative unit, within the U.S. federal system.

observable pattern of shifting influence across governance levels. Within this framework, the analysis focuses on how such influence is exercised, transmitted, and reconfigured in practice, rather than on its quantification.

CALIFORNIA AS A SUBNATIONAL ACTOR

California, with its economic strength, positioning as a leader in the fight against climate change, and technological innovation, represents one of the most significant subnational actors with global influence (Dias 2023). This positions California as a subnational actor whose influence operates through multi-level governance structures rather than formal sovereignty.

The state is headed by the Governor from the Democratic Party, Gavin Newsom. California's GDP accounts for approximately 14% of the U.S. GDP, and its economy ranks among the largest in the world (Governor Gavin Newsom 2025). This economic scale enables California to exercise forms of external influence that extend beyond its formal constitutional competencies. When compared to other national economies, according to measurements in the second quarter of 2025 (2025Q2) and reports from the National Bureau of Economic Research (NBER) and the International Monetary Fund (IMF), it ranked immediately behind Germany (Governor Gavin Newsom 2025). Its dominance is reflected not only through economic performance but also through its capacity to operate within the context of *power diffusion* – exerting influence over international flows independently of the U.S. federal government (Meckling and Trachtman 2024, 889–893). Examples of this include initiatives in climate standards and education, which California develops independently, establishing models that are subsequently followed by other subnational units, as well as international actors and nation-states (Baldassare 2023).

Educational Policy in California and Global Influence

California's universities – primarily *Stanford*, *UC Berkeley (UCB)*, and the *University of California, Los Angeles (UCLA)* – serve as global centers attracting talented students, including a significant number of Chinese nationals (Schelenz 2025). Data from the *Institute*

of International Education indicate that over 1.1 million international students, more than half of whom were Chinese or Indian nationals, were enrolled in undergraduate, master's, or doctoral programs in the U.S. in 2023 and 2024, representing a 7% increase compared to 2022 (Kaleem 2024). The largest proportion of these international students attended institutions in California, with standout universities including the *University of Southern California (USC)*, the oldest private university in California, located in Los Angeles, *UC Berkeley (UCB)*, *UC San Diego*, and *UCLA*. Among these, Chinese students significantly outnumbered Indian students (Kaleem 2024). Another illustrative example is that in 2019, Berkeley hosted over 1,200 Chinese students in STEM programs (Kaleem 2024), making it one of the primary destinations for Chinese academics in the U.S. (Feldgoise and Zwetsloot 2020). This growth trend has slowed due to restrictive federal visa policies under the Trump administration (Bhatia and Fan 2025). In this sense, higher education functions as a channel of transnational knowledge circulation, contributing to the diffusion of human capital and innovation across borders.

Beyond enrollment numbers, the influence of California's universities is also reflected in their production of globally competitive talent and innovators (*Boston Brand Media Education* 2025). Many students later participate in technological development in Silicon Valley and international companies (Delany 2025). San Francisco and the broader *Silicon Valley* region became a technological hub thanks to a combination of early innovations in semiconductor manufacturing, proximity to leading universities like Stanford, and a prosperous venture capital ecosystem that supported and invested in technology companies from the mid-20th century onward (Delany 2025). This illustrates how innovation ecosystems can generate network-based forms of influence that are not territorially confined.

California's educational policy, in line with these perspectives, does not function merely as an instrument for attracting international students but also as a mechanism through which knowledge, innovation, and human capital are transferred across national borders. This dynamic of exchange illustrates the essence of power diffusion – where decision-making is not concentrated solely in formal state institutions, but spreads through a network of universities, companies, and individuals. In this way, California operates as a subnational actor that "embodies" the third dimension of complex interdependence, with education serving as

a *bridge* between universities, companies, and global knowledge flows, thereby contributing to the transformation of decision-making centers. As noted, California's universities function as catalysts for innovation hubs, linking scientific research with the private sector, as well as other governmental and national initiatives.

Technology and Innovation

California, as previously mentioned, is globally renowned for Silicon Valley, the epicenter of technological innovation in sectors such as artificial intelligence, electric vehicles, and renewable energy (*Joint Venture Silicon Valley* 2022). In line with this, it is noteworthy that Tesla, headquartered in Palo Alto, California, announced in 2024 that it would open a battery manufacturing facility in Nevada using equipment from the Chinese company *Contemporary Amperex Technology Co., Ltd. (CATL),* further strengthening the technological supply chain connected to California's Silicon Valley (Coppola and Ludlow 2024).

Companies such as China's *CATL* are investing globally in the battery and electric vehicle sectors. The U.S. federal government's response to this issue has been inconsistent – while initial investments are permitted, subsequent restrictions and regulatory mechanisms controlling foreign investments in critical technologies have been introduced (*Reuters* 2024). Beyond Silicon Valley, California is developing regional innovation hubs in various sectors. San Francisco focuses on the creative industries and digital media, while the state capital, Sacramento, has become a center for climate innovation and policy regulation. These innovation centers not only enable technological advancement but also establish standards and implementation models with broad influence.

In 2021, the city of Sacramento adopted the Electric Vehicle Charging Infrastructure Ordinance, which mandates that new buildings include a specified number of outlets and charging infrastructure for electric vehicles (EVs) (City of Sacramento 2021). The Sacramento High-Speed Electric Vehicle Charging Hub project (2021) is one of the largest EV charging hubs in the state and serves as a model for other regions of the country (Federal Highway Administration [FHWA] 2021). Building on such local-level initiatives, California has established statewide legislative standards for EV infrastructure and chargers that other states and cities study and adopt, including permits, building codes, and pre-wiring standards for "smart homes." This illustrates how

subnational regulatory frameworks can be replicated and used as models in other jurisdictions.

Climate Policy and International Initiatives

The State of California is recognized as a leader in climate policy, both within the United States and globally, leveraging its economic and technological strength to influence international standards. Visits by the Governor of California to China between 2017 and 2019 resulted in bilateral agreements on *green energy*. Edmund Gerald "Jerry" Brown, Governor of California from 2011 to 2019, met in 2017 with the President of the People's Republic of China, Xi Jinping, and numerous other Chinese officials, signing memoranda on joint climate initiatives and technology exchange (Office of Governor Edmund G. Brown Jr. 2017a). Governor Brown also met with China's Minister of Science and Technology, Wan Gang, signing an agreement on behalf of California that built upon earlier subnational agreements with the provinces of *Sichuan* and *Jiangsu* (Office of Governor Edmund G. Brown Jr. 2017a). Specifically, this agreement expanded cooperation in advancing low-carbon technologies, renewable energy, and energy efficiency, including zero-emission vehicles (Office of Governor Edmund G. Brown Jr. 2017a).

His successor, Gavin Christopher Newsom, the current Governor, continued this practice. During his visit to China in 2023, he signed agreements with Guangdong Province and the city of Shanghai (with provincial status) on cooperation in clean energy, electric vehicles, and climate change initiatives (Governor Gavin Newsom 2023). These agreements enabled the implementation of California standards in China through the establishment of regulatory norms. Governor Newsom emphasized the importance of partnership with China in nearly all areas, particularly climate, stating, "When it comes to climate, it's a G2 issue. The United States and China account for 42% of global emissions. We cannot take climate change seriously without working together. We are here to make our climate ambitions clear and to ensure that silence is not the loudest sound either side hears" (Governor Gavin Newsom 2023). He further stressed, "Divorce is not an option. I do not want to see this relationship deteriorate – it serves no one. We are better when we collaborate and compete, not when we treat each other coldly" (Governor Gavin Newsom 2023).

California's legislative framework, including former *AB 32 Air Pollution* (Assembly Bill No. 32) and the more recent *2021 SB 100 Joint Agency Report,* aims to reduce greenhouse gas emissions and achieve a complete transition to renewable energy by 2045 (Gill, Gutierrez, and Weeks 2021). Implementation of these and similar policies in public and private projects creates replicable models that California uses as tools of *subnational diplomacy/paradiplomacy* and technology standardization.

California is the only U.S. state authorized to set its own vehicle emissions standards (Center for Climate and Energy Solutions [C2ES] n.d.). The state was granted an exemption under the *Clean Air Act* because it had already implemented standards in 1966 to address smog issues and established the *California Air Resources Board (CARB)* to oversee compliance. The *Clean Air Act* specifies that the Environmental Protection Agency (EPA) may grant an exemption if California's standards are necessary to meet compelling circumstances and are at least as stringent as federal standards. Other states may choose to adopt California's vehicle emissions standards without EPA approval. Seventeen states and the District of Columbia, representing approximately 40% of U.S. vehicle sales, comply with at least some of California's standards (C2ES n.d.).

California also benchmarks its climate policies against the European Union and other U.S. states. While the EU relies primarily on regulatory standards for emissions and renewable energy, California combines innovation with market-based instruments, such as the *Cap-and-Trade* program (Kynett 2024). Launched in 2013, this market-based program for limiting and trading greenhouse gas (GHG) emissions exemplifies a policy model adopted and implemented in the United States. Insights into the design and outcomes of California's *Cap-and-Trade* program can inform federal policymakers considering market-based climate policies. Additionally, Congress may be interested in specific aspects of the program, such as the state *Greenhouse Gas Reduction Fund* (*GGRF*) or the state offsets program. Policy designers in California describe the historical role of the state *Cap-and-Trade* program as a "backstop" for other climate policies, providing assurance that the state can meet its greenhouse gas emission targets. The program also creates financial incentives for entities to identify and implement cost-effective emission reductions and signals the market to transition toward a lower-emission economy. According to policymakers, the program's role may evolve as the state progresses toward its 2030 and 2045 greenhouse

gas reduction targets (Kynett 2024). This California regulatory model demonstrates how a subnational actor can create normative standards that provide a valuable reference framework for potential global norm-setting, illustrating in this case the complex interdependence and its third dimension – diffusion of power through the spillover of regulatory practices and technological innovation.

California's Interaction with the U.S. Federal Government and the Global Context

The Golden State leverages its economic strength, innovation, and educational resources to shape federal decisions and international policies, often independently of Washington. During the administration of Barack Obama (2009–2017), California played a key role in shaping federal vehicle emissions standards. Through collaboration with federal authorities, California succeeded in implementing stricter greenhouse gas emission standards than those initially proposed by the federal government. As a result, California, as previously mentioned, became a leader in environmental protection, and its standards served as a model for other U.S. states and international regulations (C2ES n.d.). California contributed to the development of federal vehicle emissions standards, using the outcomes of its climate and technological innovations as a model for national regulations. This serves as an example of how a subnational actor can indirectly influence federal policy through its own expertise (C2ES n.d.).

Given the political nature of policy and its competitive dimension, as well as the fact that the functioning of the 31 U.S. states often depends on whether Democrats or Republicans are in power, California has at times clashed with the federal government. Tensions were particularly pronounced between 2017 and 2021, during Donald Trump's first term, when the United States withdrew from the *Paris Climate Agreement*. In June 2017, the governors of California, New York, and Washington formed the *U.S. Climate Alliance* in response to President Trump's decision to withdraw the U.S. from the Paris Agreement (Office of Governor Edmund G. Brown Jr. 2017b). At the time, Governor Jerry Brown traveled to the United Nations headquarters in New York, attended the UN Climate Change Conference in Paris, visited the Vatican, and participated in the Climate Summit in Toronto, urging other leaders to join California in combating climate change. These efforts

built upon a series of other international climate agreements with leaders from Mexico, China, Japan, the Czech Republic, the Netherlands, Sweden, Israel, Peru, Chile, Australia, and Scotland. They aligned with Governor Brown's goal of bringing together world-renowned researchers and scientists around a groundbreaking call to action, the "*Consensus Statement,*" which translated key scientific climate findings from various fields into a single comprehensive document (Office of Governor Edmund G. Brown Jr. 2017b).

A statement from the European Union Commissioner for Climate Action and Energy at the time, Miguel Arias Cañete, aptly illustrates California's global role: "The EU and California are natural partners in the fight against climate change and were pioneers in the early years of carbon markets and clean mobility. Today, we have agreed to strengthen our cooperation to remain leaders in these areas – both of which will be key to achieving the goals of *the Paris Climate Agreement*" (Directorate-General for Climate Action 2017).

These findings confirm that subnational actors actively leverage the procedural dimension of power diffusion, employing *paradiplomacy* to circumvent federal policy constraints and, in this case, contribute to the preservation of the multilateral order, which was threatened by Trump's unilateral withdrawal from the Paris Agreement. Consistent with these observations, it is evident that California distinguishes itself through a combination of educational, technological, innovative, and climate capacities, enabling it to exert global influence that exceeds the usual scope of subnational actors.

Limitations and Scope of California's Subnational Action

California represents one of the clearest examples of a subnational actor whose activities illuminate the process of power diffusion, demonstrating how economic strength, innovation, and educational institutions contribute to shaping global influence independently of direct federal action. Through the development of high-tech hubs and climate initiatives, California serves as an example of how subnational actors can extend their influence beyond the traditional boundaries of state authority.

However, the process of power diffusion, even in this case, faces inherent limitations. Federal policies, international tensions, geopolitical risks, and competition from other technological centers can constrain

the reach of this process. The future trajectory of power diffusion within the most populous U.S. state will depend on California's ability to align its innovative potential with regulatory challenges, international partnerships, and domestic economic pressures.

This case study confirms the analytical value of power diffusion and provides rich empirical insight into the ways subnational actors, through interaction with global, national, and transnational structures, contribute to shaping a *new* pattern of complex interdependence. The use of the term *new*, in the context of interdependence is significant because, as noted earlier, American political scientist Nye did not focus on subnational actors. The inclusion of subnational actors within the framework of interdependence and the analysis of their role in the process of power diffusion, expand Nye's concept of complex/multidimensional interdependence.

OPENAI AS A TRANSNATIONAL ACTOR

OpenAI was founded in 2015 as a nonprofit organization with the goal of developing artificial intelligence (AI) in the public interest, explicitly aiming to avoid the concentration of power in the hands of individual states or corporations (*OpenAI* 2015). The Chief Scientist at *OpenAI* is Ilya Sutskever (*Toronto.edu* n.d.), one of the world's leading experts in machine learning. The founders, including Elon Musk, Sam Altman and Greg Brockman[5] emphasized a commitment to advancing artificial intelligence in a way that benefits humanity as a whole and ensures that its benefits are broadly and evenly distributed (*OpenAI* 2015). These findings indicate that *OpenAI* has pursued a global agenda and objectives from its inception.

Over the years, *OpenAI* has evolved into a hybrid model, combining nonprofit goals with commercial partnerships, most notably with *Microsoft*, which has invested billions of dollars in development and infrastructure (Endicott 2023). *Microsoft* is not formally considered a "minority owner," but rather an external partner with a "minority

[5] At the time of writing, more recent developments regarding the legal and corporate dispute between Elon Musk and *OpenAI* have also been reported, including escalating rhetoric ahead of trial proceedings (Howley 2026). However, due to the limited scope of this paper, it is not possible to fully account for all ongoing and rapidly evolving information.

economic interest," and its role within *OpenAI* remains only partially formalized (Endicott 2023). At the same time, *Microsoft* continues to develop its own AI models, partly in order to reduce dependency on *OpenAI* technologies (*CNN Business* 2025).

Sources of Influence, Regulatory Mechanisms, and Actor Interactions

OpenAI participates in the process of *power diffusion* through its technological expertise and innovations in AI. Its influence stems from informal authority within the industry, ownership of patents, research outcomes, and control over access to "advanced" AI models. Unlike subnational actors, *OpenAI* does not possess formal legal power, but operates through self-regulation and internal standards. An example is the restricted access to its *Application Programming Interface (API)* models and the introduction of "safety responsibility" principles for partners and researchers, thereby contributing to the formation of global norms and ethical frameworks in AI development (*OpenAI Developers* 2023). In the context of *OpenAI*, API models are AI systems accessible via a software interface, where users can send data to the model and receive responses without needing to deploy or *host* the model on their own servers.

Access restrictions to API models protect the system from misuse and overload. *OpenAI* implements *rate limits* to prevent individual users from overwhelming the API with requests, ensuring fair access and maintaining stable and reliable service operation (*OpenAI Developers* 2023). In its policy "Our Approach to AI Safety", *OpenAI* describes rigorous testing, engagement with external experts, and a staged, controlled rollout before releasing any new system to broader use (*OpenAI* 2023). Historically, however, the concept of "superintelligence" and its associated ethical dilemmas are not new. Irving John Good, who served as chief statistician in Alan Turing's team during World War II, may have been the first to outline essential aspects of potential AI scenarios. As he noted in 1965, "Let an *ultraintelligent* machine be defined as a machine that can far surpass all the intellectual activities of any human being, however clever. Since designing machines is itself an intellectual activity, an *ultraintelligent* machine could design even better machines; there would then unquestionably occur an 'intelligence explosion' and the human intellect would be left far behind. Thus, the

first *ultraintelligent* machine is the last invention that man need ever make." (Bostrom 2014, 5).

OpenAI operates within a transnational framework, indirectly influencing state regulations and decisions, thereby participating in the process of power diffusion. Its partnership with *Microsoft*, despite the aforementioned normative disagreements, provides access to global infrastructure and financial resources, but simultaneously creates dependence on economic interests and market dynamics (Novet 2023).

As one of the leading AI research centers, *OpenAI* engages in consultations with the European Union on the ethical application of AI, contributing to the Code of Practice for *General-Purpose AI*, providing feedback on draft versions of the EU AI Act, and participating in public consultations conducted by the EU AI Office (*OpenAI* 2025b). This involvement demonstrates how *OpenAI* participates in power diffusion, shaping norms that are reflected in international regulations.

More broadly, maintaining analytical distance is necessary. While *OpenAI* emphasizes openness and safety (*OpenAI* 2023), scholarly debates point to potential risks, including concentration of power, unequal access, and regulatory uncertainty (Bostrom 2014; OECD 2019). These considerations suggest that power diffusion in the technological domain may coexist with emerging forms of power concentration, highlighting the complex and uneven nature of this process.

Results and Normative Influence

OpenAI has contributed to the establishment of emerging global standards in AI ethics, safe development, and technology distribution. Its practice of "controlled model release," where advanced models are gradually deployed, influences how the industry and researchers approach AI systems and their applications. A recent publication on *OpenAI*'s website highlights the company's interaction with governments and its global objectives: "*OpenAI for Countries* helps our allies and partners build AI infrastructure based on democratic values. By providing these models to governments, we support the global construction of AI on rails led by the United States – enabling nations to harness AI-driven economic growth, innovation, and opportunities. For unstable or *swing states*, access to powerful open-weight models will encourage the development of democratic AI rather than autocratic AI" (*OpenAI* 2025a).

This example demonstrates how *OpenAI*, through the gradual opening of its innovative models and collaboration with States, influences how AI is developed and used, participating in a *complex transnational process* where technology, policy, and economic opportunities intersect to shape new patterns of AI application. At the same time, *OpenAI*'s increasing role in shaping global AI governance raises concerns in the broader literature regarding the concentration of advanced technological capabilities, computational resources, and access to frontier AI systems, as well as resulting asymmetries in global access.

Limitations and Constraints

Despite its influence, *OpenAI* faces several limitations:

- *Regulatory uncertainty*: internal guidelines do not guarantee global adoption or *a priori* acceptance by states or international bodies.
- *Dependence on partners and investments:* strategic partnerships (e.g., *Microsoft*) provide resources but also create economic dependence.
- *Ethics and control:* challenges related to *AI alignment*, potential misuse, biases, and safety concerns demonstrate that normative power does not equate to full control over global technological outcomes.

OpenAI represents a clear example of how transnational actors, even without formal negotiating status, can shape norms, markets, and technological development on a global scale. Its influence is dynamic and transformative, shaping technological and policy flows, yet it remains conditioned by economic, regulatory, and ethical frameworks (MIT Technology Review Insights 2024).

CONCLUSION

California and *OpenAI* represent two distinct types of actors exemplifying the concept of power diffusion, but through different mechanisms and contexts. California, as a subnational government, utilizes formal instruments of power through laws, regulations, and political initiatives, which often "spill over" to other states and regions. Its *Cap-and-Trade* program for reducing carbon emissions and *Low Emission Vehicle* (*LEV*) standards not only regulate the domestic

market but also serve as reference frameworks for other actors, such as the European Union and Canada, in formulating their own climate policies. Its *Cap-and-Trade* program for reducing carbon emissions and *LEV* standards not only regulate the domestic market but also serve as reference frameworks for other actors, such as the European Union and Canada, in formulating their own climate policies. The EU considered California's models when defining CO_2 testing standards and limits, while China's *pilot* emissions trading programs incorporate elements of California's approach at the provincial level.

California also develops renewable energy standards that influence global technology companies and foster innovation in environmentally sustainable technologies. Its subnational character allows regulatory experimentation, but its normative power is partially constrained by federal policy, economic conditions, and social challenges, particularly in low-income and minority communities.

OpenAI, as a transnational private actor, operates differently. Its normative power, which can also be understood as attractiveness, is not institutional but stems from technological expertise, innovation, and business partnerships (e.g., *Microsoft*). *OpenAI* shapes internal standards for AI development, including access to its models, in ways that establish global norms in the tech sector before states can react. Its normative power is *informal*, relying on reputation and innovation capacity.

Differences in sources of influence lead to distinct challenges and limitations. California must balance ambitious climate goals with economic sustainability, with its normative power partially dependent on federal policy and international cooperation. *OpenAI* has the agility to set standards rapidly, but is exposed to regulatory uncertainty, reliance on market partners, and ethical concerns, including bias and potential misuse. While California applies formal mechanisms to negotiate and collaborate with *nation-states* and other international actors and institutions, *OpenAI* influences state decisions indirectly, through technological impact and *normative spillover* in the industry.

Similarities also exist. Both demonstrate that power can be diffused, decentralized and that its effectiveness arises from interactions rather than exclusively from state authority. Both subnational and transnational actors can shape global norms, promote innovation, and influence markets. Limitations of power diffusion include technical, administrative, regulatory, and ethical barriers, illustrating that power is not static.

However, no matter how diffuse, power may be, it is not absolute. California shows how subnational actors can extend influence through legal mechanisms and international cooperation, whereas *OpenAI* illustrates how technologically innovative actors can shape global norms "from the bottom up." Both possess forms of economic, technological, and normative power that allow them to influence flows and norms in the global system.

Yet, diffused power cannot be "possessed"; it represents a process of redistribution through interactions between subnational, transnational, and state actors. In this sense, the role of these actors lies in participating in and shaping the process, rather than controlling the phenomenon of power diffusion itself. Ultimately, these findings reinforce the argument that power diffusion is not a static condition, but a dynamic and context-dependent process, shaped by interactions, constraints, and the evolving roles of diverse actors in the global system.

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ДИФУЗИЈА МОЋИ КАО ТРЕЋА ДИМЕНЗИЈА КОНЦЕПТА КОМПЛЕКСНЕ МЕЂУЗАВИСНОСТИ: КАЛИФОРНИЈА И ОпенАИ КАО СТУДИЈЕ СЛУЧАЈА

Резиме

Овај рад испитује дифузију моћи као трећу димензију комплексне међузависности (прва димензија је војна, а друга економска), концепт који су развили, а касније унапредили амерички научници Роберт Кохејн и Џозеф Нај. Посматрајући дифузију моћи, као једну од кључних феномена у међународним односима, истраживање се фокусира на субнационалне и транснационалне актере. Кроз две студије случаја, савезну државу Калифорнију и организацију ОпенАИ, рад анализира како економски, технолошки и образовни ресурси омогућавају овим актерима да утичу на глобалну динамику моћи независно од националних држава. Пример Калифорније показује како један субнационални ентитет може да осмишљава иновативне политике и поставља глобалне стандарде у областима технологије, образовања и климатских промена. ОпенАИ, као транснационални приватни актер, илуструје како иновације у области вештачке интелигенције могу да редефинишу расподелу моћи и обликују међународне односе изван државних структура. Рад показује да је дифузија моћи динамичан процес који настаје кроз интеракцију различитих актера, а не стање које се може „присвојити". Међутим, овај процес је повремено ограничен етичким, а готово увек политичким и комерцијалним лимитима. Истовремено, улога субнационалних и транснационалних актера у овој интеракцији указује на трансформацију саме природе моћи

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и утицаја у савременом глобалном поретку. Налази овог рада осветљавају аналитичку вредност и значај концепта дифузије моћи. Такође, уочава се да субнационални актери, делујући на пресеку глобалних, државних и транснационалних структура, постају важни чиниоци савремених облика међузависности. Њихово деловање упућује на *структурне промене* унутар међународног система и ограничења *државноцентричних приступа*. С обзиром на то да Џозеф Нај, у изворном концепту сложене међузависности, није разматрао субнационални ниво – укључивање у рад и анализа улоге субнационалног актера у процесима дифузије моћи – доприносе теоријском проширењу појма комплексне (вишедимензионалне/сложене) међузависности и, тим путем, обогаћују научну дебату; постављајући нови основ за даља, интердисциплинарна истраживања.

Кључне речи: дифузија моћи, процес, комплексна међузависност, субнационални актери, транснационални актери, Калифорнија, ОпенАИ

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