
Rhizome and Progress in Public Policy: The Curious Case of Cannabis

Mateusz Klinowski

Jagiellonian University, Faculty of Law and Administration
ORCID: 0000-0003-4650-5234

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ABSTRACT

This paper examines the role of the rhizome as a framework for the analysis of public policy and argues that it offers a more adequate way of understanding cannabis regulation than the widely used pendulum metaphor. The pendulum image suggests cyclical movement between prohibition and liberalization and is often used to describe drug-policy change. However, the legal and social history of cannabis shows that such a model is overly simplistic. Cannabis regulation has developed through the interaction of multiple legal, medical, political, economic, and cultural factors operating across different domains and levels of governance. This multidimensional

and non-linear pattern is better captured by the rhizome metaphor, which does not presuppose a single axis of movement, a privileged explanatory order, or a deterministic trajectory. By showing that the rhizome provides a more accurate account of cannabis-policy development and a more fruitful basis for interpretation and prediction, the paper also defends the practical applicability of the concept in legal and socio-political analysis and suggests that the rhizome may contribute to progress in policy science.

KEYWORDS

rhizome, sociopolitical pendulum, public policy, drug policy, policy science, cannabis regulation, post-structuralism, legal evolution, medical marijuana

I. The concept of rhizome

“Rhizome” is a botanical term derived from the Ancient Greek word *rhízōma* (ρίζωμα), literally meaning “mass of roots” and commonly translated into English as “rootstalks”¹. The term refers to the functional underground parts of certain plants like lotus, ginger, or turmeric. However, in philosophy, its usage is not due to these plants’ well-known culinary applications, but rather because of its metaphorical potential. The concept of the rhizome is an example of a metaphor derived from the physical structure of a specific object (in this case, part of a plant). It is the physical form of a dense,

¹ Encyclopedia Britannica (2025).

maze-like network lacking a visible hierarchical order or central node that makes the rhizome an especially valuable metaphor for describing social phenomena.

The metaphor itself was proposed by two French thinkers, Gilles Deleuze and Félix Guattari, who were influential in European philosophy during the late 20th century². Their work explored alternatives to *structuralism*, which at the time was the dominant intellectual paradigm in philosophy and the social sciences, premised on the idea of organizing phenomena into systems and hierarchies that reflect logical or causal relationships. Inspired by their literary engagement with the writings of Franz Kafka, Deleuze and Guattari proposed non-hierarchical and decentralized modes of analyzing human experience and social reality³. According to them, a rhizomatic narrative does not follow a linear progression but rather evolves in a complex, decentralized, multifaceted, and non-directional manner. A rhizomatic narrative, when employed in social analysis, allows for multiple perspectives, none of which can claim to be the singular or authoritative interpretation of the whole.

What began as a study of Kafka's unconventional literary style and narrative structure evolved into a broader critique of hierarchical theories of social systems. This critique, in turn, led to the formulation of a framework for the philosophical analysis of social phenomena: one consisting of theories and interpretations of reality that are not bound by assumptions of unified structure, hierarchical order, or a privileged vantage point (*the post-structuralist program*). The central point of this critique is that the assumption of a hierarchical and linear order in social reality is both oversimplified and inaccurate.

The selection of the rhizome as a metaphor was also intended as a counterpoint to the image of the tree (or root), which has long been entrenched in classical and medieval philosophy and subsequently carried over into modern science and structuralist thought. The tree metaphor remains

² The term "rhizome" was first introduced in their 1975 book on Kafka (Deleuze & Guattari 1986) and was further developed in the 1980 essay *Mille Plateaux* (Deleuze & Guattari 1987). In the latter, based on the rhizome metaphor, the authors proposed a novel methodology for practicing philosophy and analyzing reality. Currently, the rhizome metaphor proposed by the authors is often characterized as a model for the unfolding of philosophical thought (Krtolica 2021).

³ This proposal was made plausible thanks to Kafka, who demonstrated that a non-linear, non-hierarchical narrative still constitutes a coherent story. Why, then, could one not construct a coherent social theory in a similar manner? Theory is, after all, a kind of narrative.

familiar in fields such as physics and logic, appearing in interpretations of quantum mechanics (e.g., the “possible histories” model; Belnap et al. 2022) and semantic models for temporal logic (e.g., “branching time” semantics; Prior 1967). For Deleuze and Guattari, the rhizome metaphor served as an imperative to challenge the tree metaphor and, by extension, the foundational assumptions of structuralism.

The rhizome has also been interpreted as a metaphorical description of systems (*assemblages*) that are complex, non-hierarchical, and interconnected across scales and domains. Its development into the broader concept of *assemblage* (Delanda 2006) has influenced a range of post-structuralist scholarship – from literary theory and psychology (Sermijn et al. 2008) to organizational studies (Lawley 2005), and even, perhaps unexpectedly, to microbiology (Landa et al. 2024) and defense studies (Weizman 2006). The concept has been directly applied, for example, to explain social movements (e.g., Funke 2012) and the processes of knowledge production in the social sciences (e.g., Seijo 2005). In all of these domains, the rhizome and assemblage frameworks have proven useful for exploring the non-linearity and self-organization inherent in systems of a certain type.

As a method of philosophical inquiry and a general principle of understanding social reality, *the rhizome* can also be understood as an epistemic tool that enables researchers to resist reductionist explanations of social systems and their dynamics. From the perspective of post-structuralist theorists, replacing the tree/root metaphor with that of the rhizome represents a conceptual innovation (or, more specifically, a conceptual invention) – an intellectual shift that liberates social science from the presupposition of hierarchy, direction, or any predefined structure in constructing knowledge. However, it is important to note that since its inception, the rhizome concept has been criticized by some authors as a setback in social theory. Specifically, the program and methods of post-structuralism have been accused of fostering pseudo-science in the controversial critique by Sokal and Bricmont (1999).

Despite such controversies, the post-structuralist paradigm has found its way into legal studies (e.g., Cornell et al. 2006), including applications of rhizome-like or assemblage-like concepts (e.g., Riles 2000). Both concepts are particularly relevant to understanding legal systems and their evolution, especially given the persistent uncertainty surrounding how legal systems function and are structured. For decades, the dominant view depicted legal

systems as hierarchically organized networks of norms – arranged vertically and horizontally according to their origin, content, or function – with legal dynamics understood as the top-down propagation of information. Such a model naturally assumes the existence of a single source of authority. Although this view may appear compelling at first glance, scholars in jurisprudence have increasingly acknowledged that law operates as a complex system, whose evolution is neither linear nor predictable. Legal norms are not reducible to mere logical derivations; instead, legal dynamics are shaped by a multitude of interconnected factors that extend into ethics, politics, and broader social contexts. These forces operate within network-like matrices lacking strict hierarchies or confinement to specific domains. Hence, an approach that does not presuppose linearity, hierarchy, or homogeneity may better align with the reality of how law functions⁴. In particular, the concept of the rhizome may be relevant to modelling progress in public policy and transformations in the underlying regulations.

II. Evolution of public policies and the idea of progress

Intuitively, public policy is often portrayed as subject to a monotonic process of improvement. For example, Lindblom (1959) presents public policymaking as a series of small, logical steps that gradually lead to improvement – hence the term “incrementalism.” Hall (1993), by contrast, views public policy as a product of knowledge-based adaptation, which results in consecutive, cumulative transformations rather than in continuous growth. However, in many cases, policies and legal reforms cannot be characterized by either linear progression – incremental or cumulative. Numerous examples show that public policy often “oscillates” in response to political and societal pressures, as regulatory focus shifts between mutually exclusive values or priorities (e.g., efficiency versus safety). It is therefore reasonable to argue that, in the domain of public policy, periods of improvement are frequently followed by phases of crisis, retraction, or even decline. Consequently, several scholars have proposed alternative

⁴ The usefulness of the rhizome concept is further amplified by criticisms of alternative analytical approaches – for example, unsuccessful attempts to describe the legal system in terms of complex systems theory; see Klinowski 2009.

models of policy change that challenge the notion of monotonic progress (e.g., Baumgartner & Jones 1993).

Drug policy, encompassing the regulation of production, trade, and use of potentially intoxicating and addictive substances, is one area where this cyclical nature of public policy is particularly pronounced. The historical trajectory of cannabis regulation is especially illustrative, as societal perceptions of the plant have shifted dramatically across centuries – leading to the implementation of seemingly contradictory policies at different points in time. Even throughout the 20th century, cannabis laws oscillated between criminalization and legalization. As a result, this dynamic is frequently captured in the literature using the metaphor of a pendulum, which draws attention to the swings between opposing regulatory poles (Hartnett, 2000; Vivian 2012; Bewley-Taylor et al. 2014).

At first glance, the pendulum appears to be an effective conceptual device for analyzing changes in drug policies. It seems to clarify the evolution of policy and even to predict future developments. In this respect, the pendulum functions similarly to logical negation: during more tolerant periods, it suggests the likelihood of impending restriction, and during restrictive phases, it points toward likely liberalization. Therefore, the pendulum metaphor may seem to correspond well with historical patterns and to possess a degree of predictive power. One might thus conclude that the pendulum metaphor provides a meaningful framework for analyzing legal dynamics in the domain of drug policy – and, by extension, its introduction into policy science as an analytical tool represents an example of conceptual progress in policy studies. However, I will argue that such an appearance is misleading.

Scientific progress and the role of metaphors remain insufficiently examined in the field of policy studies. Intuitively, the former can be understood as achieving a deeper and more accurate understanding of policies and their evolution. If metaphors are viewed as potential sources of insights, then improved analysis (progress) may involve replacing one metaphor with another. Accordingly, it is legitimate to ask whether substituting the image of linear progression with the pendulum metaphor yields a better grasp of public policy – and whether a subsequent metaphor might further refine that understanding. It is also crucial to acknowledge that metaphors, while potentially illuminating, can mislead and obstruct insight (Lakoff & Johnson 2003). Thus, critical analysis of metaphorical

thinking should be regarded as an essential part of theoretical work aimed at conceptual progress.

As I will demonstrate in the following sections, the pendulum metaphor ultimately distorts our understanding of cannabis policy, while the rhizome metaphor offers a more accurate framework – one that even allows for better-informed predictions. If this claim holds, then replacing the pendulum metaphor with that of the rhizome may serve to stimulate scientific progress in the study of drug policy, offering valuable insights into the transformation of actual cannabis policies over time. Additionally, my argument may be understood as an independent assessment of the utility of a particular application of the rhizome concept – specifically, as a model for analyzing the dynamics of cannabis regulations. This, in turn, would strongly support the practical applicability of the concept in socio-political and legal analysis.

III. The brief history of cannabis regulations

Cannabis (*Cannabis sativa*) is an annual plant species belonging to the *Cannabaceae* family and contains approximately 60 chemical compounds known as cannabinoids, among which one – Δ^9 -tetrahydrocannabinol (THC) – is responsible for its intoxicating effects and some of its medicinal properties (Atakan 2012). The legal status of cannabis is a consequence of international agreements from the early 20th century, which introduced strict controls over the trade, and subsequently the production and use, of various medicinal substances, initially those classified as narcotics – such as opium, morphine, and heroin. This status was ultimately defined by the 1961 Single Convention on Narcotic Drugs, which, with minor amendments, remains in force to this day. Despite prohibitions and severe penalties associated with the cultivation, trade, and possession of cannabis, the plant became one of the most widely used recreational substances in the second half of the 20th century – a trend that continues today⁵.

The history of cannabis is remarkably complex. The plant originated in Central Asia and was initially cultivated for food and fiber. Its medicinal properties, however, were soon recognized. The earliest written records of

⁵ It is estimated that cannabis was used in the EU by 8.4% of the adult population (aged 15 to 64) during the previous year; see EUDA 2025.

cannabis's medicinal use date back to 3750 BCE in China (Fleming 1998). Evidence also suggests its use in ancient Indian medicine around 1600 BCE and in Egypt as early as 1700 BCE. Knowledge of the properties of cannabis spread from Egypt to physicians in ancient Greece and Rome. During the Middle Ages, cannabis-based remedies from Egypt entered the Middle East and began appearing in the works of Arab physicians from the 9th century CE onward. Cannabis was widely used as a soporific, analgesic (including during surgical procedures), and anticonvulsant. At that time, it was not smoked but administered orally (Russo 2007).

From the outset, cannabis was subject to regulation due to its inclusion in medicinal preparations. The standardization of such remedies was a significant concern even in antiquity. The composition of widely used remedies – such as theriac (Lat. *Theriac*) and its precursor mithridate (Lat. *Mithridatium*) – was often established by medical treatises or herbals that were granted official authority (Rago & Santoso 2008). Regulatory practices resembling modern pharmaceutical oversight first appeared in the Arab world in the 9th century CE and were later adopted in Europe. The first European pharmacopoeia was the Edict of Salerno, issued in 1240 CE (Penn 1979).

The earliest legal prohibitions on cannabis use were politically motivated, although they were often accompanied by religious rationales. In ancient China, intoxication from cannabis was prohibited as Confucianism gained influence over Taoism (Li 1974). Ibn Taymiyyah, a jurist and conservative Sunni theologian of the 13th-14th centuries, condemned the use of cannabis for intoxication (Nahas 1985). State regulations prohibiting the cultivation of cannabis in royal gardens in Cairo were issued during the reign of Sultan As-Salih Ayyub (1240-1249). By the late 14th century, in territories under Ayyubid influence, the consumption of cannabis preparations was punishable by tooth extraction, and cannabis crops were systematically destroyed (Khalifa 2011). In early modern Europe, cannabis was associated with heresy and witchcraft. The plant – alongside opium and belladonna – was believed to be an ingredient in a magical ointment allegedly used by witches for flying. This belief appears in the 1615 writings of the Italian physician and demonologist Giovanni De Ninault (Abel 1980).

Religious condemnation of cannabis often served as a pretext for suppressing particular social groups and ideologies. In China, Confucian doctrine was instrumental in consolidating the emperor's central authority. In the Middle East, cannabis prohibition was used to undermine the

influence of Sufism, an ascetic form of Islam that gained popularity among the lower classes (Rosenthal 2014). In Europe, accusations of witchcraft were employed by the Catholic Church to combat pagan traditions and reinforce its monopoly over healing practices, particularly among the upper classes.

The decline of medicinal cannabis use in Europe was likely driven by the Catholic Church's monopolization of official medicine and the cultural association of cannabis with superstition, witchcraft, and paganism. However, this decline would not have occurred so readily had European cannabis varieties not been selectively bred for fiber production, thereby significantly reducing their THC content. As a result, European hemp largely lost its intoxicating properties (Cappelletto et al. 2001). Despite stringent prohibitions, cannabis continued to be used widely in the Middle and Far East and in Africa.

The return of cannabis to Western medicine occurred only in the 19th century, yet this resurgence was driven not by changes in law but by medical advancements, which sought new therapeutic substances in the healing traditions and folklore of the Orient. Pioneers in the study of the properties of Oriental cannabis varieties (*Indian hemp*) included the French physician Aubert-Roche (1843), who described the effectiveness of cannabis resin during plague and typhoid epidemics in Egypt, and the French psychiatrist Moreau (1845), author of a pioneering work scientifically examining the effects of cannabis on the central nervous system. However, perhaps the most significant milestone was the work of Irish physician O'Shaughnessy (1843), based on clinical observations conducted at a hospital in Calcutta. As a result, between 1840 and 1900, more than one hundred scientific papers on the medical applications of cannabis were published in European and American medical journals, and cannabis became a popular ingredient in analgesic and soporific medications (Grinspoon & Bakalar 1995).

This historical development illustrates that the pendulum metaphor presents a highly simplified image of drug policy. Patterns of cannabis use and regulatory responses from the authorities were shaped by a diverse array of ideological, political, and economic factors. Moreover, the popularity of cannabis use often coincided with its prohibition. In such a case, the pendulum metaphor clearly misrepresents reality. For example, it does not account for how the sudden popularization of cannabis in medicine occurred in the 19th century despite the culturally entrenched negative

image of the plant and the absence of any revocation of its condemnation by social and political authorities. If the opposite positions of a swinging pendulum were meant to represent opposing positions in cannabis policy, the metaphor breaks because no physical pendulum can occupy two opposite positions simultaneously. And yet cannabis was often condemned and praised at the same time.

The pendulum metaphor implies movement within a strictly defined range and space, whereas the dynamics of drug policy follow a more complex trajectory. Moreover, historical evidence clearly suggests that drug policy operates across multiple domains, not limited to law. For example, when, in the first decades of the 20th century, the use of cannabis in medicine again began to decline, this shift was not initially accompanied by legal changes either. Cannabis disappeared from medical practice not because its use was prohibited, but primarily due to competition from synthetic medicinal products. With access to medications that were more potent and easier to dose, physicians began to treat cannabis – still prepared as a traditional herbal remedy – as an obsolete and cumbersome option (Fankhauser & Witton 2008).

Despite its declining role in formal medical practice, cannabis remained an ingredient in many popular so-called “patent medicines” (proprietary mixtures prepared by pharmacists on both sides of the Atlantic). Paradoxically, the continued presence of cannabis in these products, alongside other intoxicating and addictive substances, contributed to the growing perception among physicians that cannabis was harmful. With the introduction of legal restrictions on patent medicines in the early 20th century and their gradual elimination from the market as hazardous products, cannabis also began to disappear from commercial circulation.

We see, therefore, that the elimination of cannabis from Western medicine resulted from specific conditions within medical practice and pharmaceutical regulation concerning drug safety. In fact, prohibition, defined as legal measures forbidding cultivation, trade, and possession of cannabis, emerged later and somewhat incidentally, as a consequence of international agreements targeting other narcotics, primarily opium and morphine. Global cannabis prohibition was codified at the Geneva Conference in 1925 through the treaty signed there (*the International Convention on Narcotic Control*), whose signatories committed to adopting regulations restricting the production, export, import, sale, distribution, and use of intoxicating

substances exclusively to “medical and scientific purposes.” Among these substances – alongside opium, morphine, coca leaves, and cocaine – were the dried flowers of *Cannabis sativa* added there on the initiative of Egypt, whose authorities had long been unable to control the use and popularity of the drug among the local population.

The signing of the Geneva Convention initiated a feedback loop between national and international drug policy: national legislation drew on the convention to justify stricter domestic controls, while international regulations intensified in response to increasingly severe national policies. Within a few years, the legal distinction between cannabis and other narcotics was effectively erased, and cannabis came to be treated as equally harmful as opiates (Fijnaut & de Ruyver 2015). In the United States, with the adoption of the *Marihuana Tax Act* in 1937, cannabis was removed from the official pharmacopeia, where it had been listed since 1854 (McKenna 2014).

At both the international and national levels, early 20th-century cannabis prohibition was often justified by popular cultural narratives surrounding the plant. Particularly influential was the tale of the Order of Assassins, as described in the memoirs of the Venetian merchant and traveler Marco Polo (ca. 1254-1324) – fanatical killers who allegedly consumed cannabis to induce a murderous frenzy. This partially fabricated narrative perpetuated, for centuries, a cultural association between cannabis, mental illness, and violence. Even in the early 20th century, the story was invoked by the American popular press and by influential federal officials as justification for cannabis prohibition (Anslinger 1937). Thus, when the U.S. Congress first debated narcotic prohibition in 1911, representatives of the pharmaceutical community warned that lawmakers’ and officials’ knowledge about cannabis properties was rooted more in literary fiction than in empirical evidence (Musto 1972).

Besides international law, cannabis prohibition also originated from the activities of anti-immigration movements, which identified cannabis use with culturally foreign labor immigrants – initially from India, and later from Mexico. At one point to emphasize the alleged danger posed by cannabis smoking, the plant was even referred to as “Mexican opium” (Armstrong & Parascandola 1972). State prohibitions on smoking and possessing cannabis were designed to make life difficult for immigrants and to encourage their departure from the country. Cannabis regulations were also implemented in Brazil, the Union of South Africa, and the West

Indies, where they likewise stemmed from cultural biases and served as tools of social control in the hands of white elites (Bewley-Taylor et al. 2014).

Yet another hypothesis concerning the origins of prohibition was popularized by American cannabis activist Jack Herer (1992), who argued that a coalition of industrialists – led by press magnate William R. Hearst, who had invested heavily in wood-based paper production – sought to eliminate cannabis as a potential competitor.

As this overview shows, the nature of cannabis-related regulation was far from homogeneous. Under the umbrella term of “prohibition” may lie pharmaceutical regulations concerning drug safety, tax provisions aimed at restricting trade in certain substances (e.g., plant material), and criminal statutes directed at repressing specific social or ethnic groups associated with cannabis use. There may also be multiple, competing hypotheses regarding the genesis and purposes of cannabis prohibition. Therefore, cannabis regulation should be analyzed not only within the framework of distinct branches of law (criminal, tax, commercial, pharmaceutical), but also in relation to different domains of social life – such as law, medicine, economics, and art⁶. Hence, the rhizome metaphor, which conceptualizes social phenomena as having multiple causes and as forming part of a network of complex relationships that transcend any single domain, appears even at first glance to offer a more appropriate research perspective than the simplified pendulum metaphor typically applied to drug policy.

Moreover, the current transition from prohibition to the legalization of therapeutic cannabis use (medical marijuana) can be interpreted not merely as a consequence of shifting political will, but rather as the outcome of a paradigm shift within the medical sciences over the course of the 20th century. As it turned out, prohibitive cannabis laws were supported by physicians’ publications and official statistics. German pharmacologists Rudolf Kobert and Adam Joseph Kunkel warned of the consequences of chronic cannabis use, which they claimed led to degeneration and mental disorders, particularly in Asian and African populations. Similar assessments came from British doctors and colonial officials in Egypt and India. Although such evaluations were later discredited, they were cited in support of cannabis prohibition well into the mid-20th century (Kendell 2003).

⁶ Nineteenth-century French literature and twentieth-century American jazz, to mention only two examples, were both significantly shaped by cannabis use.

However, over the past century, medicine has increasingly aligned itself with the natural sciences – a transformation that has profoundly influenced perceptions of what constitutes valid scientific evidence regarding the harmfulness or efficacy of a given substance, and the criteria under which it may be recognized as a legitimate medication. Anecdotal accounts and the authority of practicing physicians have been supplanted by population studies and clinical trials. The evolution of cannabis’s therapeutic use – from its disappearance in early 20th-century medical practice to its widespread reacceptance in the 21st century – reflects this transformation. Cannabis has become the subject of extensive laboratory research, constituting the initial stage in the development of new pharmaceutical products. One of the leading medical research databases, PubMed, contains nearly 750 papers reporting on preclinical studies of cannabis. The total number of research articles examining cannabis properties is estimated to exceed 20,000 (Maule 2015). It was these laboratory and clinical findings that proponents of the first successful medical marijuana legalization efforts cited. In 1996, the therapeutic use of cannabis was legalized in California, followed by Oregon, Alaska, and Washington in 1998. Today, similar medical marijuana laws exist in most U.S. states and in numerous European countries.

As we see, both the decline of medicinal use of cannabis in the first decades of the 20th century, and the recent retreat from prohibition were justified by scientific evidence. What changed was the nature of that evidence – anecdotal accounts and personal authority were replaced by laboratory research and population studies in the role of sufficient condition for qualifying a substance as legitimate remedy or poison. Most importantly, this shift occurred independently of prohibition. Medical marijuana legislation in the United States, for instance, was introduced in defiance of ongoing federal prohibition. And the same dynamic can be observed in many European countries, where medicinal cannabis use is legally permitted despite general prohibition. For this reason as well, it is difficult to interpret the history and present configuration of cannabis regulation as a series of pendular swings, while remaining faithful to the historical record.

IV. Inadequacy of the pendulum metaphor

The pendulum metaphor is often employed in the context of drug policy to understand historical regulatory trends or even to predict the future. Authors use the term “sociopolitical pendulum” (e.g., Hurd 2017) to underscore the significance of the metaphor in revealing the complex, multidimensional causes of legal evolution. However, the history of cannabis regulations sketched above suggests that the pendulum metaphor is far too simple to capture their dynamics with adequate depth and complexity.

As demonstrated in the previous section, changes in cannabis policies are much more subtle than the pendulum model can adequately express. Specifically, the regulatory extremes assumed by the metaphor are not the same across successive prohibition–legalization cycles. For instance, prohibition in medieval Egypt under Arab rule was not the same as prohibition in nineteenth-century Egypt under Ottoman rule. It differed in the nature of particular acts introducing it, their content (details of regulation), as well as its efficiency and consequences. As a matter of fact, it is never possible to return to the same regulation, as the pendulum model tacitly assumes, because of the constantly changing social and cultural context of regulations and the fact, often omitted in drug policy analyses, that policy change is often path-dependent. New regulations leave residues, i.e. social institutions, expectations, new categories, commercial infrastructures, court precedents, cultural practices and prejudices. As history progresses, the pendulum is never able to return to the same point in the regulatory space in which it presumably operates because of that “sedimentation”.

Moreover, the actual history of cannabis does not consist of mere oscillations between two extremes – legalization (decriminalization) and prohibition (criminalization). In fact, cannabis was considered a valuable medicine and a condemned substance at the same time over the same area on numerous occasions throughout the centuries. Hence, to analyze the trajectory of cannabis regulations with the help of the pendulum metaphor is certainly to oversimplify it – to say the least.

Additionally, adopting the pendulum metaphor could even lend support to some false theoretical claims, for instance, that there is no real progress in the field of cannabis policy. The metaphor suggests, though, that although cannabis regulations change, their trajectory is merely circular, as they bounce back and forth in time without any advancement or refinements.

Such a conclusion is obviously false, since current regulations regarding medicinal or even recreational use of cannabis are much more developed and complex than the previous ones. For instance, they take into consideration our quite extensive knowledge on the prolonged cannabis use and its potential harmful consequences, introducing several specific requirements that cannabis products containing high doses of THC must fulfill, or limiting sales and marketing of those products. Therefore, as the history of cannabis illustrates, there is much more to the story than the image of an oscillating pendulum suggests.

It is also problematic that the pendulum metaphor leads to overly simplistic predictions about public policies that do not hold in longer timescales or a broader socio-economic perspective. Within the framework constituted by the pendulum metaphor, for instance, cannabis legalization necessarily leads to prohibition (and vice versa), since after a time of progress and liberalization (one extreme), there is a likely contraction of liberties and prohibition (another extreme). Unfortunately, such vague predictions, even if, at face value, they mean anything, seem not to have any practical importance, since one cannot deduce from them anything useful for actual policymaking. Yet, the capacity to formulate those trivial predictions seems to be one of the major reasons for the popularity of the pendulum model.

The metaphor of the pendulum is not only a filter limiting our attention and the scope of research, resulting in false beliefs and expectations. It also helps to create certain narratives that function as heuristic tools for interpreting current and future developments in drug policy regarding cannabis. For example, using the pendulum as a cognitive filter for understanding, studying, and reacting to the changing cultural image of cannabis and the regulations that follow from it, we tend to assume that they are the product of mere political or cultural forces, since the domains of politics and culture are subject to observable fluctuations that can be easily linked to changes in cannabis laws. Such an assumption may well lead to implementing ineffective public policies, as one might view cannabis policy as a field where regulatory choices are limited due to a vicious circle fueled by cultural and political struggles. In this way, the pendulum metaphor can encourage flawed scholarship and misguided policies.

Describing the evolution of drug policy through the pendulum metaphor is sometimes useful, however. If one assumes that history is the arena of struggles between opposing forces, it is easy to justify the claim that periods

of advance in any area of public policy are always followed by periods of regression. It may be sometimes intellectually convenient to describe public policies as the result of constant, repetitive struggles between progress and regress, liberal and conservative forces, or scientific and political considerations⁷, where real progress in the long run is deemed impossible. Such a picture could fit well within broader narratives about politics and the public sphere, especially when our analysis is limited to specific time, space and legal domain. The pendulum model seems to accommodate well the idea that changes in cannabis laws are driven by competing political interest groups gaining and losing political influence, or by certain fashions gaining and losing popularity. Yet, as we have seen already, the history of cannabis is an area in which numerous types of influence operate simultaneously, and it is impossible to isolate a major one. For example, in the domain of medicine, political interests, no matter their strength, may be overcome by the requirements of the scientific paradigm recognized by professionals as binding.

Consequently, it is unlikely that the pendulum metaphor, as it tends to favor oversimplistic picture of the dynamics of cannabis policies and regulations, provides a valuable tool for analyzing drug policy transformations. In that case, it is a legitimate question to ask whether any other metaphor could play a significant role in understanding this area. As I mentioned earlier, the concept of rhizome seems to provide us with a more adequate account.

V. Rhizomatic nature of cannabis policy

In the first section, I suggested that the rhizome can be understood as an epistemic tool for analyzing social reality without slipping back into simplistic explanations that assume a well-defined hierarchy or order (e.g., of causes or types of explanation), i.e. without succumbing to reductionist explanations. Cannabis regulations provide us with the case when such explanations may cloud our analysis instead of deepen understanding,

⁷ Or even as changes in the importance ascribed to evidence in the policymaking process. As the value of evidence-based policy increases, liberalization may advance, whereas prohibition tends to prevail during periods in which ideology and cultural factors dominate the public-policy domain.

simplifying the overall picture and creating false expectations. By contrast, the rhizome provides a framework for analyzing policy transformations that better accounts for the complexity of social issues. The rhizome metaphor leaves open the possibility of describing the evolution of public policies regarding cannabis in various equally important and legitimate contexts, where different types of factors could be presented as significant for explaining the actual content of regulations and their dynamics.

The rhizome neither presupposes a privileged way of describing the history of public policies nor justifies any definitive assumptions about their future trajectories. The rhizome metaphor does not allow for the determinism characteristic of pendulum swings, leaving room for far more fruitful reflection on public-policy dynamics, where causes from different domains often compete, interlink and nullify or amplify each other, resulting in largely unpredictable and unprecedented effects far from simple oscillations of a simple physical object. Therefore, the metaphor is not a source of trivial and vague predictions I mentioned in the previous section.

On the other hand, the concept of rhizome not only enables us to seek deeper explanations beyond a single area of description, but also strongly suggests that such an endeavor is necessary. This, in turn, encourages interdisciplinary inquiry addressing the complex structures of multi-domain relations entwining each of the social, political or legal issues, including cannabis regulations. The superiority of the rhizome metaphor over that of the pendulum becomes even clearer once cannabis policy is understood as a multidimensional regulatory field. Cannabis law develops simultaneously across several partly independent “axes”, including criminal law (criminalization), medical law (medical authorization), consumer-protection law (product safety, marketing, advertising restrictions), and public law (taxation, administrative control, enforcement priorities). A legal system may liberalize in one of those areas while tightening regulation in another. Cannabis is at the same time condemned in certain contexts and cherished in others. The same substance can be a medicine and an illicit drug, or a symbol of deviance and of wellness culture. The pendulum is not able to express such contradictory social qualifications. Moreover, those phenomena occur across multiple scales: international, national, regional, and often do not move in synchrony. What emerges, however, is not a simple oscillation between two poles but a series of movements along multiple axes, in which

liberalization in one aspect of control is not necessarily accompanied by liberalization in another⁸.

Moreover, cannabis policy evolves simultaneously at international, national, regional, and municipal levels. Those levels do not always align, as we already saw in the case of federal prohibition and medical marijuana laws in U.S. states. And it is the case also in many other countries, where binding international law still prohibits cannabis use, despite different forms of legalization functioning on the national, regional or even municipal level. This provides strong empirical support for describing cannabis policy through the metaphor of a multi-scalar assemblage rather than that of a unified swing. Whereas a pendulum suggests one center of motion and one axis, the picture of rhizome accommodates several partially autonomous areas of regulation interacting across scales, in which liberalization may proceed or regress independently. Consequently, in the area of studies on cannabis policy the concept of rhizome encourages, far better than the pendulum, an understanding of cannabis regulation as a heterogeneous assemblage of interacting norms, institutions, expert discourses, and social actors, thereby providing a more accurate perspective, one that may translate into better theoretical and practical outcomes. Instead of generating a fatalistic view that whatever progress occurs will eventually be undone, which may discourage institutional learning and reform design, the rhizome metaphor frames policy as capable of recombination and reform. It encourages actors to intervene at multiple nodes relevant for regulation, rather than waiting for the next swing of the imagined sociopolitical pendulum.

This allows better-informed predictions, especially because the rhizome framework directs our attention to potential multi-domain processes and institutional sites at which change is likely to emerge, such as scientific research, court decisions, patient mobilization, subculture experimentation, treaty interpretation, and so on. In this sense, the rhizome not only offers a more accurate description of cannabis policy history, but also a better guide to its future development.

⁸ In fact, sometimes liberalization alongside one axis leads to prohibition alongside the other. For example, legalization of cannabis use typically leads to more strict regulations of marketing and taxation of cannabis products, no matter their previous legal status.

VI. Conclusion

This paper is motivated by the observation that certain linguistic constructions can lead their users into cognitive, or epistemic, error. The metaphor of the pendulum influences the way we interpret the history of cannabis policy and regulations. It works as a filter, bringing to our attention those circumstances that reinforce the picture of pendulum movements. The image of a swinging pendulum helps to create certain narratives that function as heuristic tools for interpreting current and future events that constitute a policy trajectory. As it turns out, this image actually limits our understanding of the complexity of the issue and narrows our responses to cannabis-related phenomena.

Cannabis policy is not determined by a single hierarchy of knowledge or power, whether expressed through evidentiary standards or political decision-making. On the contrary, both cannabis policy and its evolution are products of a complex network of factors, which are in a constant state of flux regarding their nature, meaning, weight, and interconnections. Accordingly, cannabis policy at any given moment is the product of a shifting field of cultural and socioeconomic influences mediated by a plurality of actors, including institutions, experts, patients, and other affected groups – a picture that certainly favors the image of the rhizome as a model for cannabis public policy.

Every metaphor is, of course, a simplification and therefore produces some distortion, but we should choose those metaphors that best fit the evidence already available to us and promise the most valuable insights. This is especially important because we use metaphors as cognitive filters through which we interpret social reality and make important predictions. In the case of cannabis, the rhizome not only offers a neat botanical metaphor but also presents a picture of the interconnected and entangled structure of factors and circumstances extended through various domains (axes) and responsible for past and present cannabis policies. The rhizome framework fits cannabis history better, offering more complex narratives about it. Therefore, the history of cannabis regulation should be regarded as a strong argument for the relevance of the rhizome as a model for legal and public policy dynamics. Additionally, replacing the pendulum metaphor with that of the rhizome may even stimulate scientific progress in the study of drug policy.

Consequently, the introduction of the concept of rhizome could be interpreted as a sign of progress in our understanding of the legal evolution of cannabis regulation, and perhaps even in policy science more generally.

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