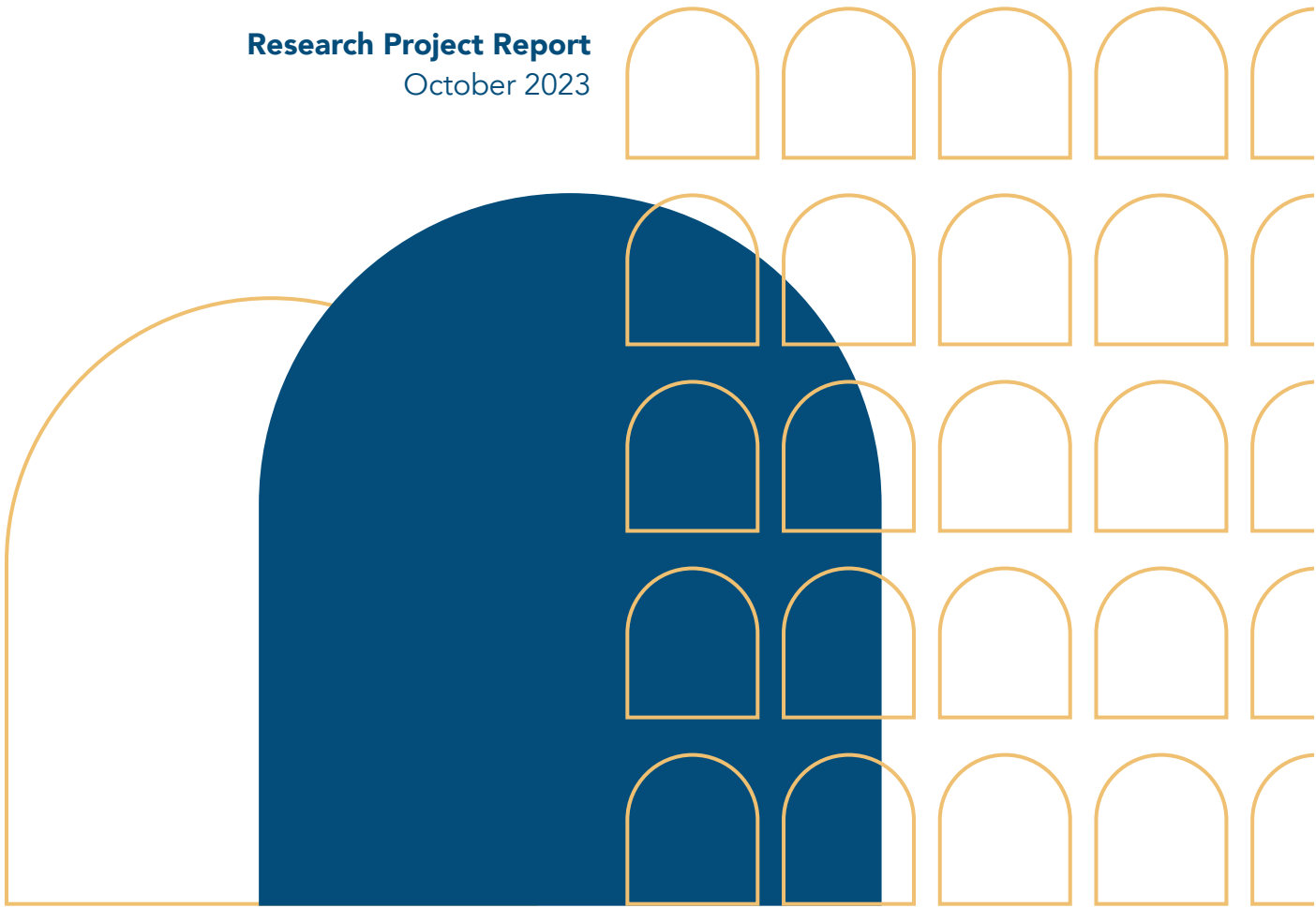# BLOCKCHAIN CONSTITUTIONALISM: THE ROLE OF LEGITIMACY IN POLYCENTRIC SYSTEMS

Authors: Primavera de Filippi, Morshed Mannan, Kelsie Nabben, Sofia Cossar, Jamilya Kamalova, Tara Merk

Table of Content

Introduction

Between 5 and 7 June 2023, the BlockchainGov ERC Project (Grant No. 865856) organized a conference on "Blockchain Constitutionalism: The Role of Legitimacy in Polycentric Systems" at the Robert Schuman Centre for Advanced Studies, European University Institute in Florence, Italy.

Blockchain networks and Decentralized Autonomous Organizations (DAOs) have seen a surge in adoption in recent years. To meaningfully fulfill their promise of widespread structural innovation and change, they require governance that maintains legitimacy for internal and external stakeholders. As permissionless, globe-spanning technologies with significant effects on the general public, there has been a growing interest in viewing these blockchain-based systems in constitutional terms.

Early analysis regarded the rules expressed through software code as a form of 'on-chain constitution.' At the same time, more recently, these have been supplemented with written documents that articulate additional rules and principles regarding the governance of the blockchain-based system ('off-chain constitutions'). The common thread among the various examples of blockchain "constitutions" seems to be that they define aspects of a system's decision-making process and make them relatively difficult to change. However, both blockchain practitioners and legal scholars do not agree on whether we should consider these as 'constitutions' or 'constitutionalisation' processes in a strict sense, nor to what extent these efforts can render blockchain systems more legitimate

The conference brought together developers and industry insiders, lawyers, and academics to discuss constitutionalism, polycentricity, legitimacy, the interplay between these concepts, and their connection to blockchain networks. The report below briefly presents the research method we used, before summarizing the discussions that took place over the three days and key insights/points of discussion from each of the sessions. The report's structure follows the agenda of the event, starting with an internal workshop, followed by two days of the conference. As the report is based on written notes rather than recordings, and we wished to keep the report as concise as possible, some content had to be omitted or condensed. The report's results and conclusion provides a short summary and key takeaways of the workshop and conference.

Research Method

Workshops are a well-established research method for collective, creative problem-solving as well as for developing innovative solutions to a specific issue (Ørngreen & Levinsen, 2017). Workshops enable the collection of real-time, reliable data about how actors in a given domain view emergent changes taking place in said domain. We were of the view that this would be a suitable method to study the emergent topic of 'blockchain constitutionalism'—one that is contested and elicits strong views—by bringing together stakeholders knowledgeable about various aspects of this domain (i.e., blockchain practitioners, academics, lawyers). We followed a 'collaborative' participation model, where researchers from our team and participants co-created knowledge, but with researchers ultimately guiding and moderating the discussions (Cornwall & Jewkes, 1995). We applied this research method to both the workshop and the two-day conference.

In terms of research design, during the workshop, the BlockchainGov researchers first presented a 'state of the art' overview on blockchain constitutionalism. The researchers presented a draft paper on blockchain constitutionalism, a literature review on the topic, and three case studies of blockchain systems that are undergoing a process of "constitutionalization". This brought all the participants onto the same page about the subject. The participants were then presented a 'problem' to collectively consider and 'solve' and, in so doing, were asked to develop broader normative recommendations on blockchain constitutions. During the morning session, the participants critiqued the 'off-chain' constitution of a fictitious DeFi DAO, using some of the knowledge that was presented in the early part of the session, while the afternoon session was devoted to making normative recommendations. The primary data collected from these sessions not only includes extensive ('thick') notes regarding the discussions held across the three days, but also photographs and other artifacts (e.g., hand-drawn illustrations). The discussion was vibrant across both sessions, and next steps and key takeaways were identified by the end of the first day. These early results indicate how contested this topic continues to be in the domain, but also yielded valuable insights into how progress can be made in both studying the topic and practically designing blockchain constitutions.

The public conference was larger than the workshop but involved all of the workshop participants. Our approach was to have the first day devoted to blockchain practitioners and community members speaking to academics, lawyers, and other stakeholders about topics relevant to blockchain constitutionalism—network governance, dApps governance, constitutionalization, exit to community, alegality, and rule of code—before the second day in which the roles were reversed. In addition, there were fireside chats with distinguished speakers drawn from across all stakeholder groups. The goal was not only to facilitate discussions between speakers, but to have provocative discussions between speakers and the audience. These discussions were also captured in detailed notes, photographs, and other artifacts (e.g., hand-drawn illustrations). The report below summarizes these discussions and presents key takeaways from each session of the conference. The final section of the report provides some key results and a summary to conclude.

Internal Workshop on Blockchain Constitutionalism

On 5 June 2023, 38 selected participants gathered in Sala Europa at the European University Institute for a day-long intensive discussion about blockchain, constitutions, and constitutionalism. After a presentation by BlockchainGov members on the work done so far on the subject, members in attendance split into four groups. Each group addressed an aspect of blockchain and constitutions, first descriptively and then normatively. The day was finalized with deliberations about the potential next steps, including how feasible and desirable it would be to turn high-order principles about blockchain, constitutions, and constitutionalization into concrete, implementable recommendations for blockchain systems.

BlockchainGov Presentation

- <u>Blockchain Constitutionalism</u>

The internal workshop began with a presentation by BlockchainGov members on "blockchain constitutionalism," a new sub-field that draws on the discourse on digital constitutionalism and societal constitutionalism as well as fundamental concepts from "traditional" constitutional theory.

The main points of the presentation were:

1. *Constitutions*

   b. The purpose of a constitution is to establish governance institutions and define their corresponding affordances and constraints.

   c. Constitutions include primary rules (i.e., what can or cannot be done), secondary rules (i.e., how primary rules are established, amended, or repealed), and principles (i.e., guiding the interpretation of rules).

   d. Some constitutional rules are "entrenched," meaning they are hard to amend through regular legislative purposes.

   e. There is a distinction between a 'formal' constitution and a 'material' constitution. The formal, written constitution imperfectly codifies the material constitution, while the material constitution only partially reflects the formal constitution.

2. *Law vs. Code*

   c. The paradox of constitutional self-amendment is the idea that an amendment clause can change itself and thus abolish its own existence.

   d. It is hard for code to domesticate the paradox of constitutional self-amendment since, by definition, code cannot be internally inconsistent.

   e. In contrast, a legal system can be internally inconsistent and still valid. In other words, legal validity is not derived from internal logical consistency or correctness but from acceptance by legislators, judges, and the public.

3. *Constitutionalism and Legitimacy*

   d. Legitimacy and constitutionalism are intimately related.

   e. Following Weber, states vested with the monopoly of violence are centralized authorities with coercive powers that need legitimacy acquired through constitutionalism.

   f. According to the scholarship on societal constitutionalism, international institutions, and globalized ecosystems are polycentric systems with interdependencies, yet they also need to be considered legitimate, a perception acquired through constitutionalism.

   g. In line with the scholarship on digital constitutionalism, large online operators with technical coercion can either form centralized or polycentric systems but, in either case, they also need to be considered legitimate, a perception acquired through constitutionalism.

h. In theory, blockchain systems are decentralized with low exit costs. In practice, they are imperfectly decentralized and have high exit costs.

4. *Blockchain Constitutionalism 1.0*

   e. The first wave of blockchain constitutionalism was primarily descriptive. Blockchain Constitutionalism 1.0 comprised on-chain rules as components of the formal constitution. The amendment of the 'rules' of a blockchain protocol is an example of a constitutional rule.

   f. Blockchain Constitutionalism 1.0 is also comprised of off-chain rules as components of the material constitution, including primary rules (e.g., transaction processing), secondary rules (e.g., improvement proposals), and principles (e.g., irreversibility of transactions).

   g. Because the material constitution is not codified, it is unclear who makes decisions or how power holders are held accountable. This brings in the question of legitimacy.

5. *Blockchain Constitutionalism 2.0*

   f. This new wave of blockchain constitutionalism comprises not only on-chain formal constitutions and off-chain material constitutions but also off-chain formal constitutions.

   g. These off-chain formal constitutions define formal & procedural rules that must be respected at all costs, along with values and principles that help guide the interpretation of formal and procedural rules.

   h. Off-chain formal constitutions don't (only) focus on a formal separation of powers but on the distribution of powers through peer-to-peer disintermediated infrastructure and actual decentralization of powers.

   i. If off-chain rules can amend on-chain rules, the question is the extent to which the material constitution can enforce the formal constitution.

- Literature Review

After the presentation, BlockchainGov researchers shared with the audience a series of academic and technical texts selected to inspire and help enrich the conversations. The literature review was divided into three pillars: state constitutions and state constitutionalism, constitutions and constitutionalism beyond the state, and blockchain constitutions and constitutionalism.

1. **State constitutions and constitutionalism:** The first pillar was divided into sub-topics, such as substance or "constitutional design," process or "constitution-making," and "state-centric constitutionalism." The researchers picked writings from renowned legal scholars such as Zachary Elkins & Tom Ginsburg, Günter Frankenberg, Brendan O'Leary, Andrew Arato, Larry Catá Backer, and Jorge González-Jácome.

2. **Constitutions and constitutionalism beyond the state**: The second pillar included a collection of legal and interdisciplinary approaches to constitutionalism, including global constitutionalism, sociology and constitutionalism, societal constitutionalism, and digital constitutionalism. The selection included pieces authored by cross-disciplinary scholars such as Mattias Kumm, Paul Blokker, Angelo Golia & Gunther Teubner, Nicolas Suzor, and Giovanni De Gregorio.

3. **Blockchain constitutions and constitutionalism**: The last pillar comprised writings about decentralization, constitutional design, and constitution-making in blockchain systems. Content produced up to date on this topic comes mostly from blockchain practitioners and scholars with high-level expertise in the blockchain ecosystem, some of them also members and collaborators of the BlockchainGov project, such as Eric Alston, Michael Zargham, Joshua Tan, and Kelsie Nabben.

- <u>Case Studies</u>

Following the presentation of the literature review, BlockchainGov members introduced three case studies of blockchain systems undergoing "constitutionalization" processes.

1. **Filecoin:** Filecoin is a Layer 1 protocol facilitating a decentralized data storage marketplace. The Filecoin Foundation is tasked with stewarding the Filecoin community by providing "resources, guidance, and fair, equitable principles to help the ecosystem flourish" and is a primary coordinator of governance, using digital ethnographic methods. The case study sets out a blockchain governance example of public and private governance and what this means for its constitutionalism. The public-private nature or governance (or 'blended constitutionalism') arises from the nature of a project ecosystem with a private foundation, termed a 'Foundation model.'

2. **1Hive:** 1Hive is a decentralized autonomous organization (DAO) that issues and distributes a digital currency called Honey. This case study investigates an example of a "constitutional archetype" in blockchain governance. A 'constitution archetype' refers to establishing, articulating, and enforcing the higher rules of organization among a group of people in an 'ideal' manner. Zargham and Nabben (2022) identify the Decentralised Autonomous Organisation (DAO) called '1Hive' as a constitutional archetype because the tools and governance framework ('Gardens') allow for members to (i) a set of principles to guide the community (the Community Covenant); (ii) a procedure to change the software code (Decision Voting); (iii) a legislative function for proposals to be made by members of the community (Conviction Voting); and (iv) a judicial procedure for the interpretation of the principles founding the community's values (a dispute resolution court known as 'Celeste').

3. **SAFE:** The case study focuses on SafeDAO, a multi-signature wallet technology initially developed within a company (Gnosis Ltd.) that transitioned into a DAO before spinning out Safe as its own DAO. The theme of this case study is "DAO Constitutions: Anchors of Purpose, Alignment, and Legitimacy during Progressive Decentralization." The SafeDAO constitution thus comes within an ongoing, multi-level process of progressively decentralizing an ecosystem of tools and infrastructures previously managed by a single company. Given this context, a core question that emerges throughout this case study is: Why did the core team decide to put forward a formal constitution in the overall process of progressive decentralization, and how does it complement other constitutional documents such as SafeDAO's participation agreement? The discussion was closed by inquiring about the effects of choosing to constitute in this manner on the broader Web3 ecosystem and the legitimacy invoked by constitutions.

Fictional DeFI DAO Constitution Case Study

Following the talks and presentations held by the organizers and members of BlockchainGov, the participants split themselves into four working groups. Each group was handed a draft constitution from an imaginary DeFi (decentralized finance) protocol DAO as an exercise. The working groups were expected to analyze the draft from a specific lens assigned to them, identifying positive and negative parts and potential missing points that should have been accounted for. The fictional case study is meant to catalyze broader descriptive and normative conversations on constitutions, endogenous and exogenous legitimacy, and polycentricity.

Descriptive Analysis of Blockchain 'Constitutions'

•   Working Group on Blockchain & Constitutions: On-chain and Off-chain Solutions to Blockchain Constitutionalization

The working group on blockchain and constitutions brought together scholars from Harvard University, Colorado Boulder, Université Paris II, and EUI, and practitioners from MetaGov, dOrg, apiary, Other Internet, and HER DAO LATAM. Participants discussed the tensions that arise from integrating on-chain and off-chain governance mechanisms inspired by the example of the DeFi protocol constitution.

The key takeaways were:

1. **Blockchain constitutions inherit some of the challenges of traditional constitutions and constitutionalization processes but also present novel aspects** based on the features of the underlying blockchain technology and the socio-technical collectives formed around them.

2. **A novel challenge emerges from the link between on-chain and off-chain governance mechanisms.** *On-chain approaches* heavily rely on "code" and are specific and deterministic, whereas *off-chain approaches* rely on "law" or rules expressed in natural language and are ambiguous and flexible, yet also corruptible.

3. **This tension permeates a whole set of questions regarding constitutions**, constitutionalization, and legitimacy, including

    a. Different motivations for constitutionalizing: seen in constitutionalization as a "transformative" vs. containing force; constitutionalization as a "centralizing" versus "decentralizing" force.

    b. Different constitutional archetypes expressed in constitutions as "contracts," "manifestos," "programs," and "law."

    c. Ambiguity as constitutional content: understood as ambiguity with vs. without precise enforceability mechanisms

    d. The gap between the material and formal constitution: particularly sustainable vs. unsustainable gap vis-a-vis the composition of the constituency

    e. Constitutional entrenchment and capacity for change: expressed as contextualized flexibility vs. stability of constitutions.

- Working Group Blockchain & Endogenous Legitimacy: How constitutionalism reinforces legitimacy in blockchain systems?

The working group on blockchain and endogenous legitimacy comprised practitioners from Maker-DAO, Gitcoin, Internet Identity Workshop, Other Internet, and Kleros, as well as scholars from RMIT, the University of Vienna, and Université Paris II. The participants debated the nature of the draft constitution document and whether it should be regarded as a "constitution, a rhetoric or a statement of values," questioning its ability to reinforce the legitimacy of the DeFi protocol DAO.

The key takeaways were:

1. **Enforcement mechanisms are key**. There was concern over the lack of defined enforcement in the DeFi DAO constitution, arguing that a constitution should clearly outline how it will be enforced to ensure legitimacy.

2. **The concept of "code is law" has a particular impact on legitimacy.** While this approach can instill certainty and trust, it also comes with limitations and challenges, mainly when unobserved changes or human errors occur. A balance is required between relying on the code as the ultimate authority and acknowledging the role of human judgment in ensuring legitimacy.

3. **Constitutions need to articulate a clear purpose**. This would prevent the system from devolving into a mere "vibe" and establish a core community-holding element, bolstering legitimacy.

4. **Constitutions should also articulate values and rules** within the constitutional framework to reinforce legitimacy.

5. **Community participation in the constitution-making process is essential** to ensure representation and enhance legitimacy.

6. **Liability considerations also need to be addressed** within the constitution as this has implications for legitimacy and accountability.

7. **Constitutions must have a clear scope of applicability**, including the groups or members it applies to, and listing provisions for its potential dissolution, ensuring clarity and legitimizing its authority.

- Working Group Blockchain & Exogenous Legitimacy: The Rule of Code vs. The Rule of Law: How to make them compatible?

The working group on blockchain and exogenous legitimacy was formed by scholars from the University of Neuchâtel, The University of Hong Kong, King's College London, the National University of Singapore, and Université Paris II, as well as practitioners from BADASL and Kleros. Participants discussed the role of blockchain constitutionalism in external or exogenous legitimacy perceptions.

The critical points of the discussion included:

1. **The role of constitutions for exogenous legitimacy is secondary.** Whether exogenous stakeholders would care about internally written constitutions is questionable unless they specified robust accountability mechanisms and technical guarantees to ensure regulatory equivalence. Instead, external stakeholders such as regulators are more interested in assessing artifacts such as regular transparency reports similar to publicly listed companies and having a variety of precise accountability mechanisms.

- Working Group Blockchain & Polycentricity: How do commonly agreed-upon social norms establish themselves?

The working group on blockchain and polycentricity gathered scholars from RMIT, EUI, University of Amsterdam, University of Neuchâtel, Panteion University, University of Amsterdam, and the London School of Economics, and practitioners from Legra. The group discussed why they are interested in polycentricity and polycentric governance, how social norms establish themselves in systems like the one described in the fictional DeFi DAO, and if this DAO's constitution was conducive to polycentric governance.

The key takeaways from this session were:

1. **There are a variety of motivations for scholars to be interested in polycentricity and polycentric governance**. Some participants were drawn to the concepts due to their prior familiarity with Elinor Ostrom's work on commons or their interest in systems theory, while for others, this interest emerged from experience with bottom-up organizing, federal democratic structures, and a commitment to challenging hegemonic powers.

2. **There are certain benefits associated with polycentricity and polycentric governance**. The benefits discussed were the capacity of such governance systems to distribute power, to use distributed knowledge well, and to administer complex societies.

3. **There are several limitations and challenges associated with polycentricity and polycentric governance**. Polycentric governance systems are prone to become complex and unwieldy, leading to potentially inadequate accountability relationships between actors in the system. In practice, such systems can be subject to fragmented governance with vague or unspecified shared values. For at least some participants, more substantial community values should emanate from polycentric governance systems. Ideally, non-neoliberal values that center value (re)distribution and the environment, among other things. Polycentricity is too nebulous a concept to be a goal in and of itself. Indeed, the messiness of polycentric governance, in the absence of shared values, can lead to co-optation by dominant, prevailing ideologies.

4. **The fictional DeFi DAO is not polycentric in any meaningful sense and commonly agreed social norms have not been allowed to develop**. Token-weighted majoritarian governance is not polycentric but is plutocratic. The constitution leads to a conflict between direct and representative democracy. The fictitious DAO protects rogue minorities, but not vulnerable minorities, and, indeed, there are very few limits on power constraints or checks and balances of organs and overlapping authorities. This is particularly concerning as the Foundation has a robust centralizing influence and power, which can more-or-less do what it wants with a treasury even if token-holders are against a decision (i.e., "rug pulls as governance"). There are no feedback mechanisms and domain experts in the fictitious DAO, with complex information processing occurring in just one body. There is also a contradiction between the avowed openness of the DAO and the unamendability of the principles of the constitution. It is also possible that the ability to fork the DAO is contrary to the resilience principle mentioned in the constitution, as it can affect the value of the DAO's stablecoin. There is no value proposition on how the finances of the DAO are governed, with it appearing that building a community is simply a "shitty corporate" public relations exercise. As such, by having no overlapping authorities, no checks and balances, no limits, and not being bottom-up, this DAO does not meet [McGinnis's definition](#) of a polycentric governance system.

5. **In some ways, corporations are better examples of polycentric governance systems than (some) DAOs.** DAOs (even an ideal type with engaged token holder participation) are functionally centralized because it is one body that has to execute a decision; corporate hierarchy is instead more distributed with more decision-making and execution functions made by teams. For there to be 'true' polycentric governance in DAOs, we want bottom-up, decentralized decision-making that has complex information processing at different nodes and feedback between these nodes. In an ideal situation, DAOs could become superior to corporations by being radically transparent and censorship-resistant. There will be decision-makers with power in such DAOs, but we can use social pressures to softly coerce legitimate power exercises.

Normative Recommendations for blockchain 'constitutions'

- <u>Working Group Blockchain & Constitutions: How to integrate off-chain constitutions into on-chain systems?</u>

In the afternoon session, the working group elaborated a table to describe the different types of governance mechanisms adopted by many blockchain communities, subdividing them into the following categories: formal on-chain constitution, material off-chain constitution, and formal off-chain constitution. The table was used to reflect on the extent to which these different mechanisms are interrelated and to understand their respective degree of entrenchment.

The main points of discussion were the following:

1. **The formal on-chain constitution (i.e., on-chain code) may comprise:**

   b. A decision-making system, including

   - Token-based governance including plutocratic systems based on the number of tokens purchased, reputation systems based on soulbound tokens, or democratic systems based on proof of personhood.

   - Multisignature wallet with the power granted to predefined addresses independently of token holding, often responsible for enacting on-chain a decision made off-chain (e.g., via Snapshot).

   - Alternative dispute resolution systems (e.g., Kleros) that can affect the execution of smart contracts or appeal existing governance decisions.

   c. On-chain checks and balances, including

   - Use of a dual chamber for decision-making to counterbalance different governance mechanisms operating according to different rules (e.g., market-driven chamber and reputation-based chamber).

   d. A series of voting mechanisms informing the decision-making system, including

   - Quorum requirements.

   - Vote casting types, including direct voting or delegated voting.

   - Temporal threshold before automated implementation.

   - Majority rules, including simple majority, supra majority, and unanimity.

   e. A system to deal with emergency situations, including

   - A multi-signature wallet, with the power to declare a "state of exception."

2. **The off-chain material constitution (i.e., social norms and practices) may comprise:**

   c. The system's animating purpose and principles recognized by the blockchain community.

   d. Improvement Proposals (DIPs) and their associated procedures and roles.

e. Snapshots voting.

3. **The off-chain formal constitution (i.e., institutional rules formalized into a specific document) may comprise:**

    d. Formalization of the animating purpose of the blockchain system to increase its degree of entrenchment, making it hard to change even if or when the community values evolve over time.

    e. Formalization of the procedures and roles involved in the Improvement Proposal procedure.

    f. Definition and formalization of fiduciary duties for multi-signature controllers to delineate precisely the extent to which they are responsible and when they can be held liable for the negligence of malicious actions.

    g. Definition and formalization of when and why can the 'state of exception' be declared and under which circumstances is it to be regarded as a legitimate intervention.

4. **A blockchain constitution can increase connectivity between the on-chain and off-chain worlds.** Alternative propositions include

e. Dispute resolution systems instructed to interpret the cases in light of the formal off-chain constitution elaborated and adopted by the DAO.

f. Stacking tokens or using collaterals as a way of committing to a particular course of action. Those who behave in line with the constitutional principles can thus earn more tokens by staking or lose their collaterals by slashing.

    g. Social norms and social pressure of DAO members who can exert influence on other DAO members if they do not abide by the constitution.

    h. Market dynamics might impact the market price of the DAO tokens if it was known that they did not abide by the constitutional principles.

    i. Law and regulations bring legal liability if DAO members do not abide by the constitutional rules and constraints.

All these mechanisms require internal monitoring functions within or outside the DAO to verify alignment and identify defective or undesirable behaviors.

- <u>Working Group Blockchain & Endogenous Legitimacy: Recommendations for Improving Legitimacy from Within the Community</u>

In the same vein, during the afternoon session, the second working group delved into the nuanced understanding of legitimacy within DAOs, shedding light on different dimensions of legitimacy and the differentiation between normative and regulatory legitimacy. Vitalik Buterin's conceptualization of <u>legitimacy</u> as the "realization of expected outcomes" was a guiding framework encompassing power dynamics, procedural integrity, favorable outcomes, and participatory engagement.

Key insights that emerged from the discussion encompassed:

1. **Participatory engagement enhances legitimacy.** The role of community members in proposing and voting on decisions is crucial for enhancing legitimacy.

2. **Community empowerment and involvement should be prioritized**. DAOs can be compared with autonomous groups such as indigenous communities insofar as legitimacy around decision-making is influenced by the extent ot which community members themselves can develop decision-making tools rather than relying on ones imposed externally.

3. **Amendability processes are challenging**. The potential for frequent changes in the content of a constitution can undermine its legitimacy. It is essential to promote an equilibrium between the flexibility to adapt and the rigidity to avoid arbitrary changes while preserving the fundamental values and principles that underpin the constitutional text. Whether amendability processes are established on-chain or off-chain also influences perceptions of legitimacy.

4. **DAOs are permeated by power dynamics**. Complex and multilayered collective interests need to be taken into nuanced consideration when undergoing a constitutionalization process to cultivate a sense of legitimacy within the blockchain community.

- <u>Working GroupBlockchain & Exogenous Legitimacy: Recommendations for improving legitimacy beyond the blockchain community</u>

After analyzing the extent to which constitutionalization processes successfully enhance the perception of blockchain systems as legitimate by external actors—such as governments and companies—the third working group dedicated the afternoon session to proposing concrete recommendations.

The main points of discussion included:

1. **Legitimate use cases and regulatory equivalence are a means to building exogenous legitimacy**. Showcasing meaningful use cases of blockchain technology and DAOs, such as digitized trade documentation, anchoring ZK proofs, international remittances, escrow accounts, COVID-19 and other vaccination certifications, carbon credit markets, and alternative dispute resolution, are essential to build exogenous legitimacy. In these contexts, the use cases need to demonstrate regulatory equivalence, meaning the ability to achieve policy goals by extra-legal mechanisms.

2. **Credible automation is also a tool for exogenous legitimacy**. Technical guarantees, or "credible automation," provide another way to build exogenous legitimacy. By automating as much as possible, including enforcing constitutional principles, blockchain systems, and communities can build confidence in external stakeholders that the system will behave a certain way. However, there are challenges to automating everything, including the need to ensure the credibility of the automation itself (does it work the way it claims to work?.) Personal guarantees from founders and developers, despite being highly unlikely, may help to build trust in automation.

3. **Exogenous legitimacy can be a trade-off to endogenous legitimacy**. Many factors that could be employed to increase exogenous legitimacy directly led to a decrease in the expected endogenous legitimacy. For example, while using private and permissioned blockchains may render use cases more trustworthy and accountable to some external stakeholders, this technology directly contradicts internal legitimacy beliefs. This trade-off points to the need to be very specific about whom a constitution is written for and by when discussing a constitution's effects on legitimacy perceptions.

- <u>Working Group Blockchain & Polycentricity: How to get cohesive & pluralistic governance in blockchain systems?</u>

After a morning session considering a (poor) attempt at constitutionalizing a polycentric governance system, the afternoon session discussed broader normative questions about how commonly agreed-upon social norms establish themselves and how cohesive, pluralistic governance can be established in blockchain systems.

The main points discussed were:

1. **The decoupling of DAOs and their legal wrappers.** While several DAOs could also be described as companies and communities, there are several types of DAOs (i.e., from non-profit commons-oriented DAOs to for-profit corporate DAOs), and the organizational rule-set of these DAOs do not necessarily match that of, for example, an LLC or Foundation that they may use to 'wrap' themselves.

2. **Motivations for creating governance taxonomies.** According to some participants, the reason for categorizing DAOs—and even governance systems—according to specific criteria is to render them objects of regulation.

3. **Disagreement over the conditions that are conducive to pluralism**. For some, pluralism in blockchain systems is enabled by considering such systems as coordination mechanisms and content agnostic—thereby allowing a lot of emergent behavior and competition. However, for others, pluralism is only possible if we understand the embeddedness of these blockchain systems in certain material conditions (e.g., plutocratic governance, cost of participation).

4. **The distinction between exogenous and endogenous polycentricity.** Exogenous polycentricity refers to interacting DAOs (DAO ecosystem) that will create competition, while endogenous polycentricity exists between sub-DAOs and teams, among others, each with different interests.

5. **Ostrom Complete Governance**. One of the participants presented the idea of 'Ostrom Complete Governance,' where any kind of governance system can be designed by 'xyz' modules. If Ostrom Complete Governance can be developed, then any governance model we can imagine can be constructed with these modules, and it should be possible to apply these modules to any organization, not just DAOs. A pull request could be made to create constitutions that use these modules based on Elinor Ostrom's design principles. The issue with developing Ostrom Complete Governance is that there is a problem with representing everything that matters in a truly complete manner. For some participants, this was not a problem since decentralized, polycentric systems are, as discussed above, good at revealing tacit knowledge and acting upon it.

6. **Constitutional Design for Polycentric Governance**. Most participants agreed that constitutions were useful for polycentric governance, even if they were not strictly necessary for blockchain systems. Constitutions can help decide tradeoffs between competing purposes, determine high-level purposes, initial structures, amendment processes, delegation of powers and responsibilities, etc. In short, a well-designed constitution will handle the complexity of polycentric governance arrangements and make them even more complex. In the context of DAOs, an important constitutional right is to freely and fully exit, as competitive governance can have significant disciplining effects. Participants shared their views on the roles that various DAO participants have (e.g., founders, investors, workers, users/consumers), with founders being central to the mission orientation of a DAO from the outset, but the functions of investors, workers, and users/

consumers were inadequately disentangled (e.g., capital contributors also work by shilling, users are also investors). There was concern that due to organizational isomorphism, DAOs will resemble existing entities and institutional diversity will be diminished. Finally, there was a discussion about whether representative positions in DAOs should have term limits.

Next Steps

At the end of the internal workshop, all participants debated whether the high-order principles discussed that day could be converted into "technical specs" for DAOs to implement.

1. **Some participants proposed having "libraries" for DAO constitutions or a cookbook on blockchain constitutions and constitutionalization**. One could propose recommendations for on-chain and off-chain mechanisms and find ways in which those could match and be presented as equivalent. One could also prescribe best practices by observing common patterns in failed constitutionalization processes of DAOs.

2. **Other participants were against these standardizations:**

    a. Adopting a particular standard is never easy. It is only through ongoing trial and error practices that one realizes what legitimacy means within their own DAOs.

    b. Issuing recommendations on blockchain constitutions and constitutionalization processes seems premature if we don't have a clear idea of what we are trying to maximize.

The conversation also turned towards whether it makes sense to talk about "blockchain constitutions and constitutionalization processes" to begin with.

1. **For some attendees, it is only appropriate to talk about "constitutions" when referring to a state's fundamental or higher law**. Talking about blockchain constitutions links a phenomenon with the wrong analogy and prevents us from experimenting natively with these new systems.

2. **For others, there is value in referring to these phenomena as "blockchain constitutions and constitutionalization processes:"**

a. These initiatives refer to rules made and adopted that are harder to amend or somewhat entrenched.

b. The "constitutional infrastructure" of a blockchain system (e.g., a DAO) comprehends on-chain (code) and off-chain (natural language) specifications on how to deal with economic, technical, and legal contingencies.

Public Conference on Blockchain Constitutionalism

The public conference occurred on 6 and 7 July 2023 and congregated almost 70 participants, including blockchain academics, lawyers, and practitioners. Reunited in Sala Europa at the European University Institute, the conference followed a "mirror" structure: On day 1, blockchain practitioners talked to academics, while on day 2, blockchain academics talked to practitioners. The participants debated in fireside chats and panel discussions, followed by fishbowls for voluntary speakers to share their opinions and insights. The discussion topics addressed the intersection between blockchain, constitutions, legitimacy, and polycentricity through the different layers of the "tech stack," including blockchain networks, dApps, and DAOs.

Day 1: Blockchain Communities Talk to Academics

Fireside Chat: The role of governance for the legitimacy of blockchain systems

Day 1 of the public conference began with a fireside chat moderated by BlockchainGov member Morshed Mannan between Puja Ohlhaver (GETTING-Plurality, Safra Center for Ethics, co-author of the DeSoc paper) and Joshua Tan (ex-Director of MetaGov, director of DAOstar, author of the Constitutions of Web3 paper.) The participants discussed the extent to which governance, including constitutionalization processes, enhances the legitimacy of blockchain systems.

The critical insights included:

1. **Blockchain systems are between "markets" and "states."** Both state and corporate governance involve a specific distribution of powers. Governance and governance systems emerge from problems when dealing with power and trying to limit it while enshrining certain rights and freedoms.

2. **Legitimacy is related to power and information**. If you have power, you control information. If you control information, you have power. Legitimacy requires that we decentralize both power and information. We must consider how information flows and work towards producing anti-collusion mechanisms that will force us into information disclosure and having different parties engage in conversation. Anti-collusion mechanisms may include the creation of data infrastructures that deal with the question of how we access data.

3. **Legitimacy is related to solving specific coordination problems at their pertinent scale**. For example, a one-person-one-vote might be the best approach for specific problems at certain scales versus a one-token-one-vote.

4. **Legitimacy requires iteration and the possibility of amendability in governance design**. On-chain governance or the codification of governance alone does not increase governance legitimacy—the possibility of trial and error or testing and amending does.

Topic: Governance

- <u>Panel on Network Governance</u>

The panel on network governance brought together Puja Ohlhaver (Harvard Getting Plurality), Benjamin Senn (Valhalla Network), and Mya Shofany (NEAR), and was moderated by Jamilya Kamalova

(Blockchaingov and Kleros member). The discussion concerned the challenges faced in network protocols from the practitioners' perspectives, including scalability issues, governance coordination, and security attacks. Regulatory challenges and "alegality" were also highlighted, emphasizing the need for solutions and effective communication with regulators.

The key highlights included:

1. **"Alegality" poses regulatory challenges**. "Alegality" refers to the phenomenon of distributed governance remaining elusive in regulatory frameworks due to the technical features of the underlying blockchain technology. While the European Union offers guidance through the Markets in Crypto Assets Regulation (MiCA,) the United States predominantly relies on the so-called "regulation by enforcement." Finding solutions to these challenges and effectively communicating them to regulators is essential for navigating the path toward a decentralized governance system.

2. **It is hard to ensure decentralization and efficiency. In governance** design, inherent challenges arise from the interplay between decentralization and efficiency. Conventional models, such as one-person-one-vote and one-token-one-vote, should be considered less preferred, prompting a deeper exploration of quadratic voting as a nuanced alternative. It is crucial to incentivize active participation while safeguarding against the concentration of power within specific entities.

3. **Constitutions serve a purpose in network governance**. Clear governance structures are paramount. Constitutions should include the capacity for self-amendment to accommodate evolving needs while remaining anchored in normative objectives.

4. **Community participation and member awareness are crucial**. Encouraging participation and avoiding the concentration of power within a few actors in governance processes is equally important. Corporate governance in public equity companies and large DAOs could result in self-interested behavior, as high quorums are often required for decision-making. It is vital to create an engaging ecosystem that naturally motivates users to participate while addressing conflicts of interest through effective reward systems and transparency.

5. **Crypto communities are not always democratic**. Crypto communities can exhibit characteristics akin to non-democratic cults, where the appeal lies not in democracy but in the community's intrinsic value. Nevertheless, there is value in the potential of blockchain technology to unlock collective intelligence and enhance coordination.

- <u>Panel on DApps governance</u>

The panel discussion on DApps governance, moderated by BlockchainGov Director Primavera De Filippi, provided insights into the challenges and approaches to developing constitutions for decentralized autonomous organizations (DAOs). The panel featured Scott Moore, cofounder of Gitcoin, Abeer Sharma, a blockchain lawyer with expertise in constitutional matters; Juan representing Maker-DAO; Kaliya Young, an expert on self-sovereign identity, and Joshua Tan, who coordinates the DAO-Star initiative at Metagov. The main points of discussion included the relationship between material and formal constitutions in the context of DAOs, the process of drafting and enacting constitutions, including the mechanisms for enforcement and compliance, and the role of off-chain and on-chain dispute resolution.

The key insights from the panel were:

1. **Most DAOs lack clarity regarding their goals and stakeholders,** unlike traditional constitutional spaces with more shared assumptions. While constitutions in the crypto space do not serve the same regulatory purpose as traditional constitutions, they play an essential role in formalizing and making explicit the hidden rules and frameworks that DAOs rely on. In that regard, Scott emphasized the importance of a top-down phase to align and stabilize a DAO initially. Juan shared the challenges faced by MakerDAO in the process of drafting its constitution. Initially, they assumed that the market would self-correct any issues. However, this approach did not yield the desired results, and they had to introduce significant changes through centralization, to re-decentralize later. The drafting process involved committees with domain experts, and delegates voted on proposals.

2. **A formalized off-chain constitution is helpful in codifying practices that are already present in the material constitution of a blockchain community.** Although Abeer expressed skepticism about formal constitutions being the single source of authority, as the effectiveness of a constitution depends on the quality of governance outcomes.

3. **Arbitration systems can be instrumental to enforce and incentivize compliance with the enacted constitution**, creating a link between on-chain and off-chain constitutional rules. Indeed, on-chain mechanisms ensure strict compliance, while off-chain dispute resolution may be more appropriate for disputes involving good-faith disagreements. Considerations of independence, checks, and balances, and the efficiency of the arbitration systems are also important.

4. **Identity plays a crucial role in DAO governance**. It is essential to define governance frameworks based on trust rather than trustless ideals. This requires credential verification and an identity system. The idea of feeding credentials into a privacy-preserving oracle for decision-making was mentioned, along with the significance of community facilitation tools and animator roles for long-term human relationships

5. **There is potential for incorporating interactive elements and gamification into constitution drafting**.

6. **The nature of DAO governance is ever-evolving, yet community participation and inclusivity remain vital aspects**. We must transition from conceptualizing DAOs as 'cult' to DAOs as 'culture.'

Topic: Governance processes

- <u>Panel on Constitutionalization</u>

This panel on constitutionalization consisted of blockchain practitioners and researchers, including Kelsie (BlockchainGov, moderator), Layer0 (MakerDAO), Laura Lotti (Other Internet), Federico Ast (Kleros), Clément Lesaege (Kleros). Participants discussed the motivations for creating a blockchain constitution, the legitimate constitutional process, and what a "blockchain constitution" should include.

Key insights included:

1. **The desire to formalize governance pre-exists discussions about blockchain constitutions**

and constitutionalism. It is linked with a desire to gain endogenous legitimacy. If you have a written constitution in place, you have a clear statement of the purpose of a DAO, promoting a shared understanding among community members.

2. **Founders and core team members can be a driving force in creating written (off-chain) constitutions**. The cases of MakerDAO and Kleros/Proof of Humanity DAO illustrate how these stakeholders can resort to off-chain constitutions as a means to deal with power dynamics, unmet expectations, and interest misalignments among community members. A constitution enables the founder to make guarantees to the outside world with a degree of immutability.

3. **Enforceability of off-chain constitutions is paramount**. Blockchain systems must ponder what should be enforced ex-ante (through self-executing code) and ex-post (through some level of human discretion). Many of these ex-ante suggestions reveal an underlying bias to wanting to "remove complexity" through rules, smart contracts, and on-chain governance. However, these also add different layers of complexity to the process since rule sets need to be easily understood by community members, which may be solved by resorting to AI bots to help the community interpret rules. Ex-post solutions such as third-party dispute resolution systems or "courts" also come with additional challenges, such as allowing for "good" governance decisions to be made with predetermined rules but improving the governance system as a whole.

4. **Practitioners still face many interesting research questions regarding blockchain systems' constitutionalizations**. Some of them include understanding the different affordances of state-like constitutionalization vs. constitutionalization processes beyond the state; diving into the implications of different voting mechanisms in the political culture of a DAO; and analyzing the trade-offs behind highly specific vs. lose formal constitutions.

- <u>Panel on Exit to Community</u>

In the afternoon, Josh Davila (The Blockchain Socialist), Bea Ramoz (DADA), Camille Canon (Apiary), and Nick Houde (Other Internet) came together on a panel moderated by BlockchainGov researcher Tara Merk to discuss practical experiences and considerations associated with the concept and process of Exit to Community (E2C). E2C is an emerging strategy to transition founder- and investor-led startups (particularly in the digital platform economy) into community ownership and governance. Overall, the panel explored the challenges, potentials, and strategies related to the concept of Exit to Community, considering how it can contribute to systemic changes in the digital economy and foster more inclusive and equitable ownership and governance models.

Key takeaways included:

1. **Implementing E2C can be challenging**, especially regarding funding and deciding how to distribute ownership and control. Some proposed strategies include creating special purpose trusts, capitalizing companies smartly, and exploring alternative governance structures beyond the binary of corporate structures and co-ops.

2. **E2C intersects with the broader context of Web3 and the potential for blockchain technology to enable alternative systems and decentralization**. Blockchain can be seen as a bridge to address the shortcomings of the current legal system. However, there is a need to ensure that E2C and blockchain projects move beyond speculative markets and deliver concrete outcomes.

3. **Timing and legitimacy are interrelated**. It is essential to consider when an E2C process will be seen as more or less legitimate. Some participants emphasized the need first to build a valuable product and establish a community before transitioning to E2C. Timing and competency were considered crucial in the transition to E2C.

4. **Ensuring continued desire for E2C is important**: Guardrails and mechanisms to ensure the continuous desire for E2C should be implemented. Careful selection of investors, smart distribution of ownership, and ongoing community engagement were considered factors to consider in sustaining E2C initiatives.

Fireside Chat: Can the Rule of Code overtake the Rule of Law?

In this fireside chat, moderated by BlockchainGov researcher Tara Merk, Marina Markezic (EUCI) and Camille Canon (Apiary) delved into the complexities of the rule of law vs. the rule of code, the implications for legitimacy and regulation, and the challenges in finding a balance between innovation and compliance in the evolving blockchain space.

The most important discussion points were:

1. **The incentive structures driving the development of the rule of code and the rule of law are different.** The rule of code is incentivized by capital and financial interests, growing at production speed. In turn, the rule of law is incentivized by taxation.

2. **Both regulators and coders share a common interest in code quality and security**, which contributes to the legitimacy of blockchain projects. There is a desire to allow protocols and code to innovate freely while navigating different levels of legitimacy with different governments and mandates.

3. **The interface between the rule of law and the rule of code is a complex issue**. Organizations in the blockchain industry often consider practical and ideological factors when deciding how to interface with the rule of law, leading to significant confusion and uncertainty, especially regarding regulating across jurisdictions.

Throughout the discussion, three key tensions surfaced:

1. **Design Constraints**: The tension between using traditional design practices and adopting new ones in the blockchain space was mentioned, particularly regarding regulatory compliance and interface with the rule of law.

2. **Scope of the Rule of Code**: There was a question about the scope of the rule of code and where it can challenge or complement the rule of law. The discussion explored whether the rule of code may be more applicable in "alegal" spaces.

3. **Legitimacy and Regulation**: The tension between the desire for code to be innovative and unregulated and the increasing regulatory interest and scrutiny in the blockchain space was highlighted.

Topic: Law & Regulation

- <u>Panel on Alegality</u>

The panel on alegality included Joni Pirovich (LawFi DAO), Ori Shimony (dOrg), and Silke Noa Elrifai (BlockchainGov), and was moderated by Morshed Mannan (BlockchainGov). The moderator explained how the term "alegality" has been used in industry and academia. Gavin Wood, for instance, described alegality in terms of code not being able to "care" whether actions are interpreted as legal or illegal; amounting to an unregulable force of nature. Academics, in contrast, have defined alegality in various ways, from denoting a particular type of strangeness to describing the capacity to exist and act at the interstices of the dominant modes of legal production. Following this brief overview, the panelists discussed their perceptions about whether crypto projects are alegal and how this purported alegality affects their work. The panelists discussed the following points:

1. **Surviving between the cracks of legal and regulatory systems**. Crypto-projects have depended on these cracks, and more intense building efforts have led to new categories of coordination technologies being developed, faster than the law can catch up. Lawyers use the flexibility and loopholes in the law to help projects design their technology, but the freedom to do this is becoming more limited as loopholes are closed, and regulatory enforcement increases. For instance, it was not technically very difficult to 'DAO-ify' Gnosis, but it took years and several lawyers to implement this legally as there were a lot of tax considerations in moving financial assets to an unregistered DAO. One of the most central aspects of a lawyer's work is to interpret the law, and the regulatory uncertainty in this area creates doubt over how broadly or narrowly a legal provision should be interpreted. Lawyers can sometimes be apprehensive about writing legal opinions because of the high degree of regulatory uncertainty and the professional liability risks that may arise.

2. **Alegality as regulatory arbitrage.** At present, the legal frameworks developed for the crypto industry are highly fragmented: What is legal in one jurisdiction is illegal in another. This presents considerable difficulties for blockchain networks and DAOs that are inherently transnational and multi-jurisdictional in nature. At the same time, legal clarity in certain jurisdictions can drive economic activity there, to the detriment of jurisdictions where authoritative guidance is not forthcoming.

3. **Some DAOs wish to remain alegal**. There is an awkward administrative "dance" between what really happens on the 'inside' of a DAO and what the law sees as happening. While many DAOs have had to become legible to the state and the legal system so as to interact with off-chain persons and assets, this has generated considerable administrative hurdles and confusion. For instance, it is not a straightforward task to classify a DAO as being for-profit or not-for-profit from a tax perspective, a classification that is done with many organizations, because of how they operate (e.g., due to how and why these use tokens). As such, it is often preferable to remain alegal, so that innovation can occur—unless there is evidence of actual harm to people.

- <u>Panel on Rule of Code</u>

This panel on the rule of code featured Rodrigo Seira (Special Counsel, Paradigm), Chris Wray (Legra), and Florian Glatz (Common Ground), and was moderated by Silke Noa Elrifai (Blockchaingov). Discus-

sants provided insights as to how the statement "rule of code" and "code is law" is interpreted by practitioners in the blockchain ecosystem, in contrast to how the phrase "code is law" was coined by Lawrence Lessig, who was also in attendance at the Conference.

The most salient discussion points included:

1. **The relationship between blockchain projects and legal systems and regulators has become increasingly difficult**. In light of the United States Securities Exchange Commission filing of a suit against Coinbase a few hours before the discussion, the panel delved into the difficulties of regulators in dealing with blockchain systems and the shortcomings of their regulatory actions, including the Coinbase enforcement action by the SEC.

2. **The shortcomings seem to have been caused by laws and regulations being premised on intermediaries of blockchain systems**. The panel considered whether conflicts of laws were created by both code and law "ruling" over digital assets. Reasonable rules to resolve such conflict of laws have not yet been promulgated or developed by case law.

3. **Current enforcement action showed the power of legal processes to rule over code** of blockchain systems by enforcing against centralized actors or attempted enforcement in a "kafkaesque" fashion against DAOs and participants, as shown in the case of Ooki DAO.

4. Given the lacuna and uncertainties created by the incongruity of code and law, **it is important to consider the extent to which code could limit liability for system participants within decentralized systems** from both a private and public/administrative law perspective. From a private law perspective, code-deference regimes for bylaws within some DAO constitutions manifested a congruence between the "rule of code" and the "rule of law". Attempts such as the COALA Model Law on DAOs to achieve similar congruence in corporate law through regulatory and functional equivalence were still in their infancy.

5. **The "rule of code" and the "rule of law" don't necessarily need to be at odds**. When looking past this dichotomy, both terms refer to mediums of presenting information. The actual issue is at what point public rule-making start and private rule-making start. What determines the legitimacy of any rule of prescription is, among others, who are passing it, and how likely it is to be respected. Additionally, ideally, the rule of code can, by providing strong technological guarantees, enhance and complement the rule of law. The rule of code isn't necessarily something to escape from the law. It's also something that can also help become more aligned with the law.

6. **The "rule of code" may function most smoothly when legal rules are mapped into codification**, meaning, in cases where the law is "code-feasible", a term coined by Stanford Prof. Strnad, the most efficiencies arise. It was noted that this was the case, for example, in securities tokenization.

Book Talk: "Blockchain Radicals: How Capitalism Ruined Crypto and How to Fix it"

Day 1 of the public conference ended with Joshua Dávila's talk about his upcoming book "Blockchain Radicals: How Capitalism Ruined Crypto and How to Fix It," published through Repeater Books. Josh explained the overarching structure and framework used for the book, based on Gilles Deleuze's critique of representational thinking. According to Joshua, representational thinking is endemic in crypto, and this is a problem. Through this framework, he proposes a new way to understand crypto beyond the most common representational models imposed onto it, including money, finance, and coordination.

Day 2: Academics Talks to Blockchain Communities

Fireside Chat: What Generates Legitimacy in Blockchain Systems: Crypto-economics or Crypto-politics?

After blockchain practitioners talked to academics, Day 2 of the public conference focused on academics talking to blockchain communities. Discussions commenced with a fireside chat between Lawrence Lessig (Harvard University) and Jason Potts (RMIT), moderated by BlockchainGov Director Primavera De Filippi. The scholars explored what generates legitimacy in blockchain systems: crypto-economics or crypto-politics. The discussion focused on the interplay between code and law, the role of regulation and markets in the governance of blockchain systems, the importance of trust and confidence in blockchain systems, and the challenges of information asymmetry.

The main points of the fireside chat were:

1. **The evolutionary economics perspective views blockchains as social coordination institutions that combine code, economic incentives, and social norms**. There is an important need to understand the institutional rules and how they are chosen when considering the design of blockchain systems. The legitimacy of economic systems in blockchain arises from both the incentives they create and how individuals collectively choose to participate in them.

2. **The concept of "code is law" is linked to a progressive displacement of legal mechanisms by technology**. Blockchain architecture can challenge traditional government regulations, such as currency and securities regulation, by decentralizing crucial policy functions to technological artifacts.

3. **Law and the market play a role in regulating blockchain technology**. The challenges of regulating blockchain systems include the potential for illicit uses and the difficulty of sanctioning the technology infrastructure without impeding its legitimate uses. It is important to strike a balance between regulation and innovation to protect against stifling regulation while addressing societal concerns.

4. **The role of confidence in blockchain systems should be considered**. Blockchain technology enhances confidence in a system behaving as it is meant to, enabling new economic and legal contraptions. However, **maintaining confidence requires minimizing human intervention** and leveraging on-chain formal constitutions. The challenge lies in reconciling the material constitution, which is subject to human agency, with the need for a secure confidence layer, which tries to restrict human agency.

5. **Information asymmetry and partial information play a significant role in blockchain systems**. Promoting information symmetry and identifying and blocking certain behaviors before regulators intervene is important. While information asymmetry is a real problem, it can be mitigated through tools that help address partial information and improve understanding of the rules.

6. **There is a need for more experimentation in blockchain systems**. To maintain the potential for blockchain technology to bring about significant value redistribution and societal change, **novel forms of regulatory intervention are required**, which are more likely to accommodate this emerging technology.

Topic: Governance

- <u>Panel on Network Governance</u>

The panel reflected on the term 'network governance', what it means in the context of Web3, and how it interplays with DApps governance. As all of the panellists—Kelsie Nabben, Chris Berg, Ellie Rennie, and Jason Potts—are affiliated with RMIT University, it provided them an opportunity to provide their distinct perspective on the topic.

The key points of discussion were:

1. **Production and Governance are linked, and constitutions are a new trend**. It is common to separate the governance of a project from the project itself. For example, a factory is first built, and then a governance system is implemented for it. The RMIT thesis is that there is no distinction between production and governance, they are the same. Therefore, it does not make sense to claim that governance is a separate 'thing' that becomes constitutionalized. Moreover, it is evident that blockchain communities have not been creating constitutions from the outset. Instead, they are retrofitting and reframing existing practices and principles as 'constitutions'.

2. **Fixed vs Dynamic Governance Systems**. Instead of the governance of these networks being static and fixed, what we actually see is constant choices on how value is created through, for example, identifying dependencies. What we also see is that when you have permissionless systems you have issues around extractivist behaviour. Ethereum doesn't exist except for the EVM that lives in the 'network workers' devices'—it is essentially a workers' collective. As in such collective, one needs to demonstrate membership and affiliation. Let's describe what it is that we value and locally create that, instead of creating fixed constitutional systems from above. People should, for instance, be able to have the ability to participate in defining the boundaries of a governance system.

3. **Continue patching, or build better computers?** For Hayek, markets are computers; they compute information. As we know, markets are amazing— except for when they are not. We could either continue patching and fixing this, through regulation and new laws, or we can develop better ways of computing information. That's what crypto-tokens are doing: they add more information. This lens of viewing blockchain networks as polycentric computational systems is helpful in analysing the constitutionalisation of these networks.

4. **Decentralization as an end worth pursuing**. It is important to remind ourselves why we pursue decentralization or permissionlessness? Why do we need it? We shouldn't see decentralization merely as aesthetic or as a philosophy, nor engage in decentralization theater, but actually use decentralization for something good or better than the status quo.

- <u>Panel on DApps Governance</u>

The panel discussed the role of constitutions in decentralized applications (DApps) and DAOs, and how these constitutions can or cannot guide the operations of these blockchain-based systems. The panel featured Michael Schilig (KCL,) Joshua Ellul (Malta University,) and Wessel Reijers (Vienna University.) The panelists explored the need for constitutions based on the level of political activity and societal impact of DApps and DAOs. They debated how code can enforce rules and the importance of off-chain interventions and dispute-resolution mechanisms. The panel also examined the normative power of code and its interaction with legal frameworks, focusing on the balance between code-based governance and the incorporation of external normative frameworks. Overall, the panel provided insights into the challenges and considerations of governance in DApps and the potential for constitutional structures to guide their operation.

The key insights were:

1. **Constitutionality is linked to predictability.** The need for a constitution in a DApp depends on the level of political activity or human agency involved. While constitutions provide predictability in decision-making, they may not be necessary for specific systems meant to be trustless, such

as blockchain gambling platforms. In such cases, on-chain governance mechanisms may suffice.

2. **Off-chain Interventions and dispute resolution are still relevant**. DApps often require off-chain interventions and dispute resolution mechanisms. These mechanisms can include auditing, verifications, and arbitration platforms like Kleros. Challenging decisions and seeking legal recourse when necessary is essential for maintaining trust and resolving conflicts.

3. **Code can act as an instrument of normativity**. The code in a DApp is objective and unambiguous, but its intention and impact on society are not. The code reflects the values and norms of its creators. Hence, it is crucial to consider how the code's architecture and design affect society and whether they align with desired normative outcomes.

4. **Code-based governance should be balanced against legal frameworks**. While it provides efficiency and automation, it may not capture all aspects of a governance system. Having a formal document or legal framework that complements the code and articulates the normative intentions behind the DApp is valuable. This can provide instructions, clarity, and support for the system's operation. Balancing code strengths by incorporating external normative frameworks is an important task.

5. **Legal frameworks can offer protection when pushing for scalability and adoption.** As DApps aim for broader adoption, there is a need to consider societal protection and the role of other forms of normativity beyond code. Legal frameworks and external normative structures become essential to protect individuals and communities and ensure the long-term viability and acceptance of DApps.

Topic: Law & Legitimacy

- Panel on Legitimacy

To start the afternoon work, the panel on legitimacy featured Prof. Julia Black (UCL), Prof. Florence Guillaume (University Neuchâtel), and Prof. Andrea Leitner (UVA) and was moderated by Marco Crepaldi. Discussants opened with an outline of legitimacy from a legal theory perspective, followed by a conception of legitimacy developed by Prof. Black, which borrows from sociology. The panel debated the notion of legitimacy and discussed to what extent it applies to blockchain systems and which insights can be distilled to inform the design of governance processes in blockchain systems, including constitutions.

The key insights from this panel included:

1. **Legitimacy can arise from accepting a regulatory system without needing formal rules or regulations**. In such cases, legitimacy can derive from (a) the alignment of values and goals of individuals and the system, (b) the functionality of the system, i.e., it does what it is supposed or designed to do, (c) the adherence of the system to the world views of its subjects or (d) the presence of some form of democratic process in the system.

2. **DAOs often rely on social relationships to operate, and such relationships build trust and legitimacy**. In this sense, DAOs must prove their legitimacy to outsiders via their users, technical properties, and other measures such as codebase auditing or a dispute resolution mechanism.

3. **The narrow definition of legitimacy as "legal validity" poses extra difficulties when applied to DAOs**. Identifying the relevant legal framework is challenging. There is tension between the notion of legal validity and legitimacy in a stricter sense. At times, practitioners and technologists conflate the legitimacy notion with legal validity. However, the latter encompasses more than the former since legal validity only describes compliance with existing laws.

4. **Blockchain systems might be required to increase their exogenous legitimacy to scale.** In-

dividuals are attracted by regulated and trusted markets. If we consider law as an autopoietic system (cognitively open but normatively closed), blockchain ideas and values are distorted to fit the law, which can create issues, for example, when regulating DeFi by analogy. Work is required to bridge autopoietic systems' normative closeness, such as the law and the blockchain space.

- Panel on the Rule of Code

This panel provided a novel opportunity for conference participants to learn about the origins of the famous term 'code is law' from the professor who coined the term, as well as vibrant discussions between panelists and audience members on the possibilities and limitations of the rule of code. The panel consisted of Primavera de Filippi (BlockchainGov), Kelvin Low (National University of Singapore), Lawrence Lessig (Harvard), and Mikolaj Barczentewicz (Surrey).

The key insights from this panel discussion were:

1. **Shaping the Pathetic Dot**. The law is one of the regulatory forces that act upon a pathetic dot, but it is not the only one. Norms, markets, and architecture or code are other important regulatory forces. There has been a tendency to misinterpret 'code is law' as code being the only form of regulation. Code is just a part of the story and perhaps not the most important one. When someone wishes to affect change, is necessary to think of how to influence each of these regulatory modalities.

2. **From "code is law" to the "rule of code."** In a rule of law system, even the sovereign is subject to the rule of law. The rule of code is supposed to be an analogy of the rule of law. In Web 2.0, platform operators stand above others and act as functional sovereigns: they rule by code. In Web 3.0, with autonomous code, there is no centralized operator, and thus everyone is subject to this rule. We therefore see the emergence of rule of code, rather than rule by code.

3. **The limitations of the rule of code**. For at least one of the participants, the analogy between the rule of law and the rule of code is limited (and relies on a very thin conception of the rule of law), as even the most rigid rule of law systems are mutable and can, for instance, accommodate the interests of a vulnerable party. For many average end users, immutability and censorship resistance are not as important as financial scams that can drain their entire wealth. A rule of code system—strictly understood—would rely on end users protecting themselves and not account for the possibility of individual vulnerability. This is embodied in the aphorism 'not your keys, not your coins', which would not happen in a rule of law system. The scaling of such systems may also hamper the rule of law. For instance, the blockchain is made up of pseudonymous transactions and even in the instances where transactions can be traced, they lead to an attacker in faraway jurisdictions, rendering them untouchable. As we know, the rate of recovery in the crypto space is very low. This can lead to the rule of code being unjust. Participating in designing a rule of code system is not a sufficient solution either, because while some software bugs are obvious, most people won't be able to spot a bug just by reading code unless you make everyone learn coding.

4. **Future opportunities of the rule of code**. For other participants, it was too radical a claim to say that the rule of code will never be adopted and perceived as legitimate. There are opportunities for improving the rule of code. In the case of theft, you could enhance confidence in a rule of code system by installing a dispute resolution system that cannot be unilaterally controlled by any single network actor. To take another example, in the physical world, when someone loses a key to their house, they don't lose their house altogether as they can call a locksmith to regain access and (socially) verify their ownership and possession so people do not think they are lying about it. There is an opportunity for blockchain systems to address problems like the loss of keys through social recovery. Technical guarantees will also be relevant for the governance of MEV. If some of these technical guarantees are successful—i.e., they are regulatorily equivalent—they could be used to replace current regulatory structures.

Fireside Chat: Blockchain Constitutionalization Processes and Legacy Systems

In the afternoon, BlockchainGov researcher Sofia Cossar moderated a fireside chat between Eric Alston (University of Colorado Boulder) and Chris Berg (RMIT). Instead of focusing on the revolutionary power of blockchain technology, the conversation concerned the extent to which blockchain systems and constitutionalization processes may reproduce vices similar to the ones in "legacy systems" understood as states or corporations.

The most salient discussion points included:

1. **As technology evolves, so do institutions**. Comparing blockchain systems to legacy systems requires considering that these are not siloed nor static but interrelated and ever-evolving.

2. **Innovation requires patience**. Analyzing the shortcomings of blockchain systems versus legacy systems should avoid falling into the fallacy of perfectionism thinking.

3. That being said, **blockchain technology and its systems have been promoted based on important value propositions** upheld by technological guarantees: decentralization, censorship resistance, borderlessness, transparency, and publicity, among others. However, we have recently witnessed many examples where blockchain systems have sacrificed one or several of these principles.

4. **While blockchain systems are technically disintermediated in storing data, they are not necessarily politically disintermediated**. Decisions on how these systems should govern themselves, including constitutionalization processes, usually rest in the hands of some powerful stakeholders, such as founders or core developers.

5. **Blockchain systems should protect the freedom of peers to transact with each other without them being arbitrarily prevented from doing so**. Still, compliance with rules and regulations imposed by legacy systems (such as states and corporations) has effectively resulted in different degrees of censorship of the participation of certain actors, at times without any reasonable basis.

Topic: Governance Processes

• Panel on Blockchain Constitutionalism

Blockchaingov researcher Jamilya Kamalova (Blockchaingov/Kleros) moderated the panel on blockchain constitutionalism with academics including Eric Alston (University of Colorado Boulder), Kelsie Nabben (RMIT and Blockchaingov), and Silke Noa Elrifai (Blockchaingov).

Key takeaways from the conversation included:

1. **Constitutions, whether termed charters or manifestos, are critical in establishing decision-making rules within a blockchain system**. They encompass vital elements such as amendment power, spending authority, and conflict management, contributing to the governance framework. **Conflict resolution is crucial in DAO constitutions**, in order to maintain a harmonious and effective governance structure.

2. **When discussing governance, "representative" may be preferred over "democratic."** The ideal governance structure strives to represent the beliefs and preferences of each individual. The material approach to constitutions acknowledges that they reflect a community's positive and negative aspects of a community.

3. **The term "constitutional infrastructure" offers an insightful approach**. It highlights the importance of a governance framework that may not necessarily be separate from the DAO, whether written or off-chain. People, purpose, and environment are fundamental components of the "constitutive infrastructure" and play a pivotal role in delineating its internal and external boundaries.

4. **Flexibility and clarity are important considerations when drafting constitutions**, as they must

capture the essence and purpose of the community they govern.

5. **Vulnerability mapping is crucial for building resilience in blockchain systems**. Vulnerabilities within DAOs can arise from both social and technical factors, and they can originate externally or internally, affecting different levels of the organization. These vulnerabilities can present opportunities for adaptation, resilience, and growth.

6. **Due process is a significant consideration for legitimacy in blockchain systems.** Both procedural and substantive due process should be accounted for, with attention given to ensuring input for substantive decision-making in the blockchain context.

- Panel Exit to Community,

The final panel of the conference, brought together Morshed Mannan (EUI/ BlockchainGov), Chris Berg (RMIT), and Vangelis Papadimitropoulos (Panteion University, Athens) in a discussion about Exit to Community moderated by BlockchainGov researcher Tara Merk. The discussion delved into the history of Exit to Community as it relates to the broader cooperative movement and platform cooperativism in particular, highlighting how the strategy intersects with and departs from the existing logic of individual liberty and capitalism.

Key insights included:

1. **Exit to Community may be a means or an outcome.** Exit to Community can be a means towards a more commons-oriented future economic system as well as the result of shifting social norms and values towards this end. The Web3 ecosystem is an exciting and fertile ground for experimentation, as it promotes decentralization as a core value.

2. **Global trends have an impact on Exit to Community**. The looming succession problem faced as many business owners from the baby boomer generation retire in the coming years and the international community's discontent with many practices around data security, privacy, and labor conditions in big tech and the sharing economy, could further transform social norms and needs in a way that encourages more Exit to Communities to become viable across economic sectors.

3. **Anchoring is essential.** Throughout the transitioning of an organization towards community ownership and governance, anchoring the organization's vision, values, and principles is crucial. There are four critical mechanisms for anchoring.

4. **The first anchor occurs through social norms and people**. This approach requires the outgoing leadership to establish solid relational dynamics with the community and foster a tight-knit culture of alignment and accountability. Ultimately, relying on social norms and culture to successfully anchor an organization's values and vision throughout a transition depends on solid trust between the outgoing entrepreneurial and successive community leadership.

5. **The second approach relies on legal tools**. Legal tools include bylaws or contracts, create confidence in organizations abiding by self-defined rules and principles, and create a mechanism to hold individuals accountable if they go against legally anchored principles of the organization.

6. **The third approach anchors an organization's mission, vision, and values technically.** That is, by encoding and architecting an environment that limits the scope for action to prevent departing from a previously defined vision and mission.

7. **Constitutions are a fourth potential anchor**, combining aspects of social norms and culture, legal tools (off-chain formal constitution), and technical design (on-chain formal constitution) throughout an Exit to Community process.

Results and Conclusion

On 5 June 2023, 38 participants, including academics, lawyers, and practitioners, gathered at the RSC for a workshop addressing practical questions about blockchain and constitutions, legitimacy, and polycentricity. After introducing the theoretical, empirical, and practical work done on the topic by team members of the BlockchainGov ERC project, during the morning session, the organizers shared a mock draft constitution from a Decentralised Finance (DeFi) DAO with the participants. Split into four groups, the attendees engaged in a descriptive analysis of the interrelationship between on-chain and off-chain constitutions, how constitutionalisation may reinforce the legitimacy of blockchain systems, how the 'rule of code' and the 'rule of law' can be made more compatible, and how commonly agreed-upon social norms in blockchain-based systems can be established. In the afternoon, each group presented concrete recommendations to better integrate on-chain and off-chain constitutions, improve the legitimacy of blockchain systems from within and beyond the community, and build a more cohesive and pluralistic decentralized governance.

The public conference took place on 6 and 7 June 2023, welcoming a larger group of over 60 attendees. Discussions revolved around three broad topics: governance, decision-making processes, and law and regulation, organized around six narrower discussion points: blockchain network governance, decentralized application governance, constitutionalisation, 'exit to community', 'alegality', and the 'rule of code'. Day 1 focused on blockchain practitioners, including members of apiary, DAOStar, DADA, EUCI, dOrg, Gitcoin, MakerDAO, NEAR, Other Internet, Paradigm, and Kleros, sharing their experiences and visions for blockchain constitutions and constitutionalism. Day 2 provided academics with an opportunity to share their insights on these subjects. The speakers included scholars on law, economics, media and communication, philosophy, and political science from the University of Amsterdam, University of Athens, CNRS, University of Colorado Boulder, EUI, University of Florence, Harvard University, King's College London, London School of Economics, University of Malta, University of Neuchâtel, National University of Singapore, and University of Surrey, RMIT, and University of Vienna.

Two key takeaways emerged from the multidisciplinary discussions that are directly relevant to blockchain constitutionalism, the topic of the conference. Firstly, on-chain constitutions are not sufficient to address the complex forms of coordination taking place within blockchain-based systems, as there are limits to what can be articulated in software code. Hence, there is a potential need for off-chain constitutions, although there is considerable debate over what these off-chain constitutions should contain or specify. Inspiration for these off-chain constitutions can be drawn from a wide body of scholarship, from societal constitutionalism to corporate governance. Secondly, although the process of formalizing off-chain constitutions can enhance the legitimacy of blockchain governance, this is only the case if the constitutionalization process itself is viewed as legitimate.

References

Cornwall, A. and Jewkes, R. (1995). What is participatory research? Social Science & Medicine, 41(12), pp. 1667-1676.

Ørngreen, R., & Levinsen, K. T. (2017). Workshops as a Research Methodology. Electronic Journal of E- Learning, 15(1), pp. 70-81.

Research Project Report
October 2023

Publications Office
of the European Union