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# SOCIAL SECURITY FOR WEB3 WORK

## A PRELIMINARY SPECIFICATION OF THE DESIGN AND DEPLOYMENT OF SOLIDARITY PRIMITIVES FOR DAO CONTRIBUTORS

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### Abstract

This paper presents a preliminary exploration of the design and deployment of solidarity primitives for web3 social security, based on the insights generated during Other Internet's Web3 Work Forum held in July 2023. The paper proposes a modular framework to develop solidarity primitives addressing the three dimensions of security for DAO contributors: psychosocial stability, financial stability and regulatory clarity. Additionally, it outlines a range of both on-chain and off-chain mechanisms and improvement proposals specific to each dimension. Lastly, it discusses current challenges to implementation.

**Keywords** Social security · Solidarity primitives · Web3 welfare · DAO contributor experience

## 1 Introduction: what are solidarity primitives for web3 social security?

Decentralized Autonomous Organizations (DAOs) are often described as digital organizations that can run with minimum human intervention. Yet as the past years of blockchain-based organizational innovation have demonstrated, DAOs are far from "autonomous." As with any open source technology [6], protocols and blockchains are built and maintained by people. Thus, building structural support around the talent that works on blockchain-based infrastructure is key for ensuring our ecosystem's longevity and legitimacy, both internally and toward external stakeholders such as regulators and policy makers.

In our research on web3 labor conditions [8], we have identified key pain points in the protocol contributor experience with the goal of mapping social security structures that could adequately negotiate the unique terrain of on-chain, globally distributed, and online forms of work. Based on ethnographic interviews and an extensive literature review, we define social security for DAO contributors as a three-dimensional concept, encompassing **psychosocial stability, financial and material security, and legal/regulatory clarity**, which are visualized in figure 1:

- Psycho-social wellbeing relates to challenges of burnout, mission-alignment and equitability within DAO organizations;
- Financial and material security refers to predictability of income across market cycles;
- Regulatory clarity indicates primarily on- and off-boarding into regulatory compliance and clear liability structures.

In July 2023 we hosted Web3 Work Forum, a series of workshops and discussion sessions with key stakeholders and organizations in the Ethereum ecosystem to approach these specific problem spaces. This paper offers an initial mapping of the ideas generated in that context, toward the implementation of solidarity primitives for web3 social security.

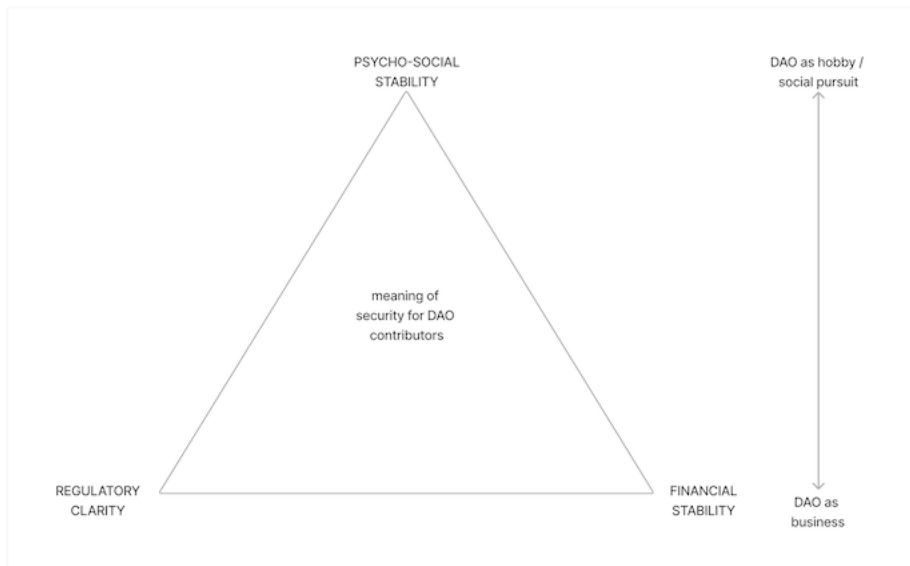


Figure 1: Triangle of Security for DAO contributors, adapted from [8]

Breadchain Cooperative [2] defines solidarity primitives as "a rethinking of what is commonly referred to as financial primitives in web3. Rather than using blockchains for profit maximization, solidarity primitives use them to help forge solidaristic relationships between individuals and collectives." It is important to note that solidarity primitives are not merely characterized by their use of smart contract mechanisms; they also require a definition of equitable membership criteria and of the purpose of said mechanisms to guide resource allocation toward a shared end. For instance, using smart contracts to donate to charity is not a solidarity primitive. On the other hand, using smart contracts mechanisms that explicitly aim to enhance overall security for contributors and improve labor conditions in web3 can be considered a solidarity primitive.

Protocol Guild is an example of a simple but effective solidarity primitive for Ethereum core contributors. It is an unconditional basic income (UBI) "overlayed" on existing blockchain development teams. Its membership base is comprised of 152 Ethereum core contributors (as of August 2023) that comply with the eligibility requirements outlined in Protocol Guild's documentation site. Additionally its funding model is a combination of social processes (requesting sponsorships from Ethereum projects through governance) and on-chain mechanisms (distributing funds through the split contract to members based on weights). While Protocol Guild can be considered a successful example of a solidarity primitive for core developers, most DAOs currently lack these kinds of support structures for their contributors.

In the following section we offer an expanded definition of solidarity primitives for web3 social security, encompassing both on-chain and off-chain mechanisms, and propose a modular framework to address the interdependent dimensions of social security (psychosocial, financial, and regulatory). Subsequently we discuss the propositions emerged from our forum findings that focus on each of these aspects of security for DAO contributors. We conclude with further reflections on the present challenges hindering implementation and adoption of solidarity primitives for web3.

## 2 Designing a solidarity primitive for web3 social security from the ground up: constitutive elements

In this paper, we expand on Breadchain's definition of solidarity primitive and stretch the concept of "mechanism" to encompass not only encoded protocol mechanics but also off-chain processes that contribute to enhancing overall security for web3 contributors. While on-chain mechanisms constitute an essential component of any primitives, they are complemented by leveraging various off-chain mechanisms, both in terms of internal social norms and interfaces with existing regulatory frameworks. By including a variety of both on-chain and off-chain mechanisms in the specification of our primitives, we aim to underscore the fact that developing solidarity primitives is not just a technical issue, it is also an important social and political challenge.

Table 1 summarizes the propositions discussed during Web3 Work Forum, highlighting whether these pertain to leveraging on-chain mechanisms, or developing internal social norms, or interfacing with existing regulatory frameworks. This mirrors the analysis by Reijers et al. [11], which discusses endogenous and exogenous rules as key aspects of off-chain governance. While this work is not concerned with governance *per se*, it acknowledges that protocol-based organizations need to account for both "the rules adopted by a reference community to ensure [its] proper functioning and ongoing development [...and] all rules imposed by a third-party onto the reference community, e.g. national laws and regulations, contractual agreements, technology standards, and so forth." Some of the recommendations below address requirements for funding or policy setting, while others gesture toward purposes that are yet to be fully understood by web3 organizations. While not exhaustive, we see it as an essential mapping of first steps in the development of solidarity primitives for web3 social security, as they emerged from our ethnographic work and the responses we gathered from DAO stakeholders in the Web3 Work Forums.

Combining propositions from different areas of the table above enables us to compose solidarity primitives for DAO contributors in a modular way with a higher degree of granularity. Below we discuss each of the propositions and associated elements of concrete primitives (marked with ✨) that emerged from the three Web3 Work Forum sessions, each addressing one of the dimensions of social security.

	<b>Financial security</b>	<b>Psycho-Social well-being</b>	<b>Legal / regulatory clarity</b>
<b>Challenge</b>	<i>Predictability of income across market cycles</i>	<i>Burnout, alignment, equitability</i>	<i>On and off-boarding into regulatory compliance and clear liability structures</i>
<b>Social norms</b>	<ul style="list-style-type: none"> <li>• Opt-in contributions from mining/staking reward</li> <li>• Opt-in contributions from VC raises</li> <li>• On-chain tithing</li> </ul>	<ul style="list-style-type: none"> <li>• Building collective memory through loss learnings</li> <li>• Facilitating synchronous meetings and rituals beyond conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage the creation of cooperative bridges and anchors with existing jurisdictions</li> <li>• Strategic alliances for standard setting and collective bargaining</li> </ul>
<b>On-chain mechanisms</b>	<ul style="list-style-type: none"> <li>• Sequencer revenue on L2 toward contributors funds</li> <li>• Contract Secured Revenue</li> <li>• UBI vesting</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinated cross-DAO proposals to make collective demands through governance processes</li> <li>• Reputation and interoperable contributor credentials</li> </ul>	<ul style="list-style-type: none"> <li>• Web3 native standardized DAO contributor agreements</li> </ul>

<b>External interfaces</b>	<ul style="list-style-type: none"> <li>• Treasury diversification for mutual investment</li> </ul>	<ul style="list-style-type: none"> <li>• Create control affordances with external stakeholders such as investors</li> </ul>	<ul style="list-style-type: none"> <li>• Plug into existing workers' coops</li> <li>• Advocate for DAO worker status to be recognized by national laws</li> <li>• Advocate for DAO worker rights as part of digital nomadism and free labor movement</li> <li>• Advocate for decoupling of financial and governance rights in tokens (security regulations)</li> </ul>
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Table 1: Elements of solidarity primitives for web3 social security, resulted from Web3 Work Forum.

### 3 Improving financial security

Throughout our research we found that financial security is predominantly contingent on contributors having access to stable and predictable income, rather than on elaborate economic incentives or the promise of high returns on holding DAO native tokens. Creating mechanisms that enable contributors across functional areas to receive stable and predictable income is key to retaining talent across market cycles. At minimum, stability requires contributors to be paid in fiat, stablecoins or other fiat equivalent.

From our research on the protocol contributor experience [8], contributors' own ideas for improving stability and predictability included establishing a UBI for contributors, a DAO contributor unemployment fund, as well as a parental leave and mental health support fund. Beyond the specific purpose, any on-chain fund that aims to improve financial security for web3 workers faces the same set of requirements in terms of receiving and disbursing funds – either through on-chain means or through a combination of social and encoded processes – which are specified below.

#### 3.1 Collecting funds through automated on-chain mechanisms

On-chain funding mechanisms – i.e. mechanisms that are hard-coded into the protocol – can ensure a predictable flow of revenue to a common pot. As updating the core protocol is a highly controversial issue in Ethereum and many other blockchain ecosystems, our survey of on-chain funding mechanisms refer solely to L2 and sidechains. Throughout our Web3 Work Forum, participants saw great potential in the burgeoning L2 ecosystem which would enable sustainable public goods funding without requiring any changes to underlying blockchain protocols. Nevertheless, it is worth noting that other L1 blockchains such as NEAR have specific contributor funding mechanisms (notably the Protocol Treasury and Contracts Rewards) which mirror our recommendations for L2 funding mechanisms, hard-coded into their protocol.

⚙️ **Sequencer revenue on Layer 2.** L2 sequencers can be thought of as special full nodes that order/batch transactions, compress them and anchor them on Layer 1. To incentivize this work, sequencers require users to pay a fee which contributes to the sequencer revenue. In most current L2 systems, the sequencer remains centralized (albeit with various protections to hedge against possible misbehavior), thus, sequencer revenue accrues to a single account. Various L2s, such as Optimism and the Public Goods Network (PGN) have committed to redistributing sequencer revenue to retroactive public goods funding. As we believe that social security (as enabled through stable income for open source development, unemployment and health insurance, parental leave funds etc.) counts as a key public good in the Web3 ecosystem, on-chain social security funds should be eligible to fund themselves via sequencer revenue from aligned L2 ecosystems.

Furthermore, a prevalent feature or bug (depending on who you ask) of centralized sequencers on L2 is that they have full discretion on ordering transactions and can thus capture the majority of MEV on L2. Revenue secured through (useful) MEV could consequently act as an additional source of funding for web3 financial security mechanisms.

✿ **Contract secured revenue.** Contract secured revenue (CSR) is a concept similar to artist royalties but for smart contract developers and deployers. The idea, detailed in EIP6968, is for smart contract deployers to accrue a percentage of fees that accumulate when users interact with their dApps. In that sense, CSR draws on a similar mechanism as sequencer revenue on L2, with the difference that revenue is allocated to the account that deployed the smart contract in question, as opposed to a single shared fund. EIP6968 advocates for people to implement CSR on Ethereum L2s, the rationale being that this is where the majority of consumer facing use cases are likely to be deployed in the future. Furthermore, implementing CSR on Ethereum mainnet would require prohibitively high coordination costs. To date, Canto, an EVM compatible DeFi-focused blockchain built on Cosmos, has integrated CSR into its design [3]. On Canto, smart contract deployers are issued an NFT representing the right to claim a percentage of fees accrued over time for the use of a specific smart contract at any time. Developers can furthermore determine, whether they would like fees to accrue under a new NFT or redirect them to an existing CSR NFT, thus enabling more mutualist funding to emerge.

✿ **UBI vesting.** Vesting contributors' salaries has become a common, though controversial, practice in web3 projects. While it is supposed to encourage long-term alignment among stakeholders, it creates an extra burden for contributors that often require liquidity to cover their life expenses. An alternative approach is to use vesting for UBI instead of salary. This approach has been pioneered by Protocol Guild's 0xSplits. Its vesting contract pools ETH and ERC20 tokens from sponsors and unlocks them gradually over one year to be allocated proportionally to Protocol Guild members.

### 3.2 Normalizing opt-in funding for contributor wellbeing

If financial security is to be the status quo, then social norms that enable allocation mechanisms to function at scale will be necessary. The problem here is that social norms take time to be nurtured, rely on voluntary action and trust in most cases (such as charity or philanthropy) and can break when external conditions change (e.g. regulation or the overall economic climate). In our suggestions, we focus on two stakeholder groups who have certain access to capital and a keen interest in sustaining the ecosystem (because they have the most to lose). Projects such as Protocol Guild have been pioneers in changing social norms across the ecosystem towards more voluntary contributions to open source development and public goods.

✿ **Contributions from mining/staking rewards.** The first incentive-aligned stakeholder group identified throughout the Web3 Work Forum are blockchain validators/block producers. Validators have a direct interest in maintaining and growing the Ethereum ecosystem, and their long-term income therefore depends on the ecosystem's ability to attract and retain talent. We propose the creation of an opt-in mechanism for validators, which allows them to automatically re-allocate a percentage of their staking rewards to fund financial security mechanisms. Alternatively, we imagine contributors pooling their resources to create staking pools whose rewards are directly channeled into on-chain financial security funds. These specialized staking pools would have benefits similar to urban Land Use Taxes, as public infrastructure improvements are reflected in (and thus paid for by) increased land values generated by that infrastructure. This could be a highly efficient funding mechanism to maintain public goods equitably, and keep the ecosystem viable in the long term.

✿ **Contributions from VC raises.** Another key stakeholder group is VC firms backing web3 projects. Given that the success of a web3 startup directly depends on the availability, security and activity of the protocols, VCs funding web3 organizations should care about attracting and retaining talent across the ecosystem, as this influences their financial return in the medium to long term. We propose establishing an opt-in mechanism which allows a percentage of any VC raise for a web3 organization to be allocated to a financial security fund, transparently and on-chain. Over time, we hope that such mechanisms evolve into established and self-reinforcing social norms.

✿ **On-chain tithing.** Tithing is a significant financial practice for religious communities, where members are encouraged to donate a portion of their income to support the church and

its activities. In some sense it is part of the pre-history of the social welfare system in Europe. Analogously, we can envision a scenario in which opt-in forms of solidarity such as tithing become so embedded in the social practices of web3 to provide a layer of social security for contributors and fund public goods.

### 3.3 Managing funds by interfacing existing systems

Currently, many DAO treasuries are denominated primarily in the DAO's own token. While this is a key mechanism for a project to signal interest in its own native assets, it also bears significant risks. A homogenous treasury makes the DAO more vulnerable to market volatility, thus decreasing the ability to predict and plan compensation schemes. Conversations in IndexDAO and elsewhere demonstrate that DAOs are already taking this risk seriously.

✿ **Treasury diversification for mutual investment.** To mitigate this risk, we advocate for DAOs to diversify the assets held in their treasury to enable better financial planning horizons and more financial stability for DAO contributors. Beyond this, treasury diversification can also be a means towards funneling additional income towards solidarity primitives. Allocating a part of the DAOs treasury towards collective investments both on-chain (yield farming, lending protocols, NFT investments, etc.) and off-chain (stocks, bonds, ETFs, real estate, etc.) can produce significant ROI, which in turn can be used to fund social security mechanisms. Such measures are common practice in large non-web3 foundations and also in public social security systems such as pension funds.

### 3.4 Distributing funds equitably

Together with receiving funds, managing resource distribution to eligible members in an equitable and credibly neutral way is another key aspect of ensuring financial stability for contributors. Depending on the purpose of the primitive (whether it's a UBI or a legal slush fund for DAO contributors or other), there are different ways in which funds can be allocated. Funds allocation can occur either programmatically via smart contracts or through human involvement via DAO governance processes. Furthermore, funds can be disbursed as a continuous stream or in a needs-based fashion. Protocol Guild's UBI streams funds to members in a automatically weighted manner proportional to the length of their involvement. In contrast, approving ad hoc expenses or issuing reimbursements may require more human involvement/active governance.

## 4 Improving psychosocial stability

Burnout has been widely discussed in web3 as a major challenge to contributor's wellbeing and talent retention across web3. In our analysis burnout is often a symptom of a variety of interconnected causes: overwork and "always on" mentality, lack of clear organizational structures and expectation setting, power asymmetries, lack of collective knowledge (especially with regards to confronting failure and organizational shifts). Of course, financial volatility and regulatory uncertainty also impact psychological stability. In our ethnography, one contributor proposed the creation of a mental health support service tailored to contributors' needs, which unlike traditional remote workers, often face contextual ambiguities, opaque organizational structures and expectations and lack of clear conflict resolution processes. Beyond this, Web3 Work Forum generated other complementary propositions and mechanisms that address the causes of burnout – by developing and strengthening social norms, leveraging on-chain tools, and interfacing with external stakeholders and regulatory frameworks.

### 4.1 Learning from failure to build collective memory, online and offline

While extensive information resides on-chain and within forums, there appears to be a lack of willingness to transparently discuss challenges and phase-shifts among DAOs and web3 organizations. This paradox of transparency particularly applies to discussions of failure and loss, perhaps in view of the prevailing focus on success that characterizes the space. Building a culture of honesty based on the open sourcing of information and processes are vital components of a thriving open ecosystem – particularly for non-technical roles and fields (i.e. design, facilitation, org research and internal practices).

✿ **DAO Graveyard.** Echoing Nathan Schneider's proposition for a "cryptowake" [15], the DAO graveyard is an archive (e.g. confession box, a storyboard), analogous to startupgraveyard.com, that enables contributors and organizations to archive, analyze and commemorate DAOs that have concluded their journeys. This can enable the web3 community to start building collective intelligence around the failure modes of DAOs and reflect on the complexities of a

DAO lifecycle exploring, through examples, issues such as the potential pitfalls of securing venture funding, faulty patterns in progressive decentralization, and the distinct nature of DAOs in comparison to conventional organizations (such as venture-backed startups and publicly traded companies). Some projects have initiated endeavors to establish wikis and repositories for non-technical insights (such as Gnosis Zodiac’s stories, which host a version of Schneider’s cryptowake, and Kelsie Nabben’s Decentralized Data Governance Pattern Library), but their adoption has been limited. Facilitating the adoption, standardization, and legitimization of these resources is a key precursor to building a collective memory and internal history of this nascent ecosystem. This involves an effort both from leading organizations in the space as well as from the broader web3 community. All parties should be dedicating resources and efforts to facilitate occasions, online and offline, to intentionally reflect and discuss challenges and losses within the ecosystem.

**🌀 DAO contributor retreats.** In our analysis DAO contributors also lamented a scarcity of alternatives to conferences, as they navigate between the pressures of an "always online" culture and the frenetic pace of large scale IRL events. Some initiatives have pioneered alternative formats closer to "retreats" for contributors (such as Chinwags, DAOpalace/DAOESCO, Crypto Commons Gathering, just to name a few). However, discussions at Web3 Work Forum surfaced the need for a more sustained effort by the web3 community to facilitate synchronous meetings beyond conferences that can serve as spaces for the reflection and development of collective memory. These types of encounters can become occasions for contributors to share their experiences openly, fostering a culture of transparency and collective learning. IRL rituals to discover and celebrate DAO lifecycles in all their aspects, including death, enable contributors to build historical perspective beyond conventional conferences. Since mitigating burnout is key to retaining talent, providing occasions for reflection and development of collective memory should be a priority for web3 organizations. We envision adopting some of the funding and resource allocation mechanisms described above to fund the establishment of a self-sustaining alliance of web3 workers’ retreats organizers to cater to the requirements for the development of collective intelligence and reflection.

#### 4.2 Making collective demands through governance processes

In an environment that operates under the 24/7 rhythms of digital environments and has heavy FOMO dynamics, it is no surprise that DAO contributors have a structural tendency to feel overwhelmed and work beyond the typically recognized 40-hour work week of a full-time position. When organizations turn from loose collectives bound by shared vibes into fully-fledged digital entities, the collapsing distinction between work and leisure becomes increasingly felt by contributors. Setting boundaries often falls onto individuals; similarly, attempts at unionization are challenging to implement due to the protean and fragmented nature of the web3 workforce and the fluid operational nature of DAOs, with notable proposals being advanced [7], [13].

**🌀 Coordinated cross-DAO proposals.** To sidestep these challenges, groups of contributors could collaborate to submit proposals to their different DAOs, advocating for the establishment of social norms that promote healthier engagement practices. For instance, one such proposal could focus on implementing a one-day-per-week moratorium on work. This approach mirrors the idea of a soft form of "wildcat strike" – a decentralized, grassroots action taken by workers to protest against unfair conditions. By uniting across DAOs, contributors can leverage their collective strength to shape the norms and expectations of the web3 work landscape. At the same time it also promotes a bottom-up, effectively decentralized, way for organizations to form cross-protocol alliances based on their commitment to foster a culture of wellbeing and balance. This also enables DAOs to enact the value of community governance in a meaningful way. Coordinated cross-DAO proposals could also serve the purpose of bootstrapping the creation of slush funds targeting contributors’ collective needs.

#### 4.3 Creating control affordances with external stakeholders

One of the key insights from our research is that establishing a sense of ownership over work is key to contributors’ wellbeing and satisfaction, and disconnected from tokenholding. Despite the fact that day-to-day contributors hold institutional knowledge vital to the organization’s functioning, DAO-level governance predominantly relies on token holdings, ultimately granting investors the final decisional power. Addressing hidden power asymmetries within organizations is another key way to improve psycho-social security for contributors by creating checks and balances between contributors and tokenholders.

✿ **Reputation and interoperable contributor credentials.** One way to redistribute power within organizations and make explicit contributors' institutional knowledge is through reputation systems. A thorough analysis of the intricacies of reputation systems and their relations to identity, membership, and governance is beyond the scope of this paper. We refer to Apiary's recent mapping of reputation systems in web3 for a comprehensive overview [1]. Additionally, several DAO tooling platforms offer off-the-shelf reputation solutions that allow organizations to track contributions, such as Station and Dework. Of note, Colony offers an on-chain reputation tool that allows contributors to earn reputation proportional to their input; reputation decays over time to mitigate power entrenchment and favor decentralization. Finally, DAO specific implementations, such as dOrg's use of on-chain reputation scores ("Rep"), which unlocks governance power and access to organizational benefits and token bonuses (see Mannan [9] for a discussion of dOrg's "corporate governance-by-design") can serve as valuable examples to others. Given the distributed and "promiscuous" [14] nature of web3 work – where contributors work for several organizations at the same time – the creation of interoperable contributor credentials is of paramount importance and closely connected to self-sovereign identity and decentralized identifiers [17].

✿ **DAO contributor representative on VC boards.** A more speculative proposition that emerged from Web3 Work Forum concerns the representation of DAO freelancer workers on the boards of VC firms. The involvement of venture capital (VC) funding introduces a complex dimension to ownership. In spite of their differences DAOs share an ethos centered on the concepts of democratic resource allocation and the redistribution of capital and wealth. Venture backing, however, carries inherent expectations for financial return that might not fit with these principles (e.g operating as a DAO often entails higher cost inefficiencies, a fact that is not fully appreciated by more traditional startup investors) which may lead to misinformed governance decisions for the DAO. Acknowledging that many successful DAOs secure VC funding, this would introduce a way to align the expectations of traditional investors with the unique operational dynamics and values of DAOs.

## 5 Improving regulatory clarity

Regulatory uncertainty is a key distinguishing characteristic between DAO workers and traditional freelancing. While most freelancers face additional administrative overhead, the situation is even more complicated for web3 contributors given the lack of clarity around tokens legal status. Our Web3 Work Forum generated three key proposals to help reduce and overcome some of the regulatory hurdles DAO contributors face.

### 5.1 Building better bridges and anchors with existing jurisdictions

Bridges and anchors are intermediary tooling that enables interoperability between DAOs or act as an interface between DAOs and different legal jurisdictions. Opolis and Toku (formerly WorkDAO) are great examples, providing interfaces for DAO contributors to access state-based insurances or social security as well as facilitating the payment of taxes and social security contributions, without requiring the DAO itself to be incorporated or have a legally recognized status. However, our research showed that the existing set of interfaces is not ubiquitous enough to be accessible to the vast majority of contributors in the space: it is too expensive, and often is only available for contributors with specific nationalities. Furthermore, contributors advocated for making bridges and anchors themselves more decentralized and accountable to their users in order to build alignment with the broader DAO ethos and ecosystem. Two measures can help build more and better bridges and anchors going forward.

✿ **Encourage cooperative bridges and anchors.** To be effective interfaces between DAOs and legal jurisdictions, bridges and anchors cannot be DAOs themselves otherwise they would face the same regulatory uncertainty they are trying to overcome in the first place, creating a recursive problem. Nevertheless, building bridges and anchors that are aligned with many DAO principles such as member ownership, democratic accountability and which enable contributors to have an effective voice in channeling their specific needs to the intermediary organization, are essential for contributor wellbeing. We advocate for bridges and anchors to be formally incorporated as cooperative organizations within legacy legal and corporate frames to mitigate this problem.

✿ **Plug into existing cooperative bridges and anchors.** The benefits of collectivizing payroll, taxation, social security contributions, executive education packages and more, are



not unique to DAO contributors. Traditional freelancers have addressed this issue in the past relying on worker cooperatives such as smart.coop, Doc Servizi, Freelance Co-Op, Guilded and others. We advocate for engaging with these existing freelancer cooperatives and negotiating pathways for DAO contributors to join so that their services could include more web3 native needs. Our rationale here is that we don't need to reinvent the wheel. Finding and supporting allied band wagons to hop on to can go a long way and reduce initial startup and coordination costs.

## 5.2 Building web3 native DAO contributor standards

Advocating, building and advancing common standards and good practices from within and across web3 serves a dual purpose. First, and most importantly, commonly agreed upon standards around contracting, compensation and social security can establish a base level internal legitimacy while significantly advancing financial security and psychosocial wellbeing for contributors. Remaining competitive with respect to other sectors that already have established baselines for these issues is essential for retaining talent in the ecosystem. Secondly, showcasing ways in which the web3 ecosystem proactively establishes standards, and draws on native tools to improve working conditions for all, can be a powerful legitimizing factor of the space as a whole towards external stakeholders such as policy makers. Throughout the Web3 Work Forum two core mechanisms emerged in this regard.

✿ **Standardized DAO contributor agreements.** Just like standard term sheets for investors or templates for a rental agreement, we propose that the ecosystem adopt a standardized format for contributor agreements, which sets out the rights and responsibilities associated with contributing to any given DAO in the short or long term. There are various existing organizational forums that are well-equipped to devise such an agreement (for example COALA or DAOstar) and incorporate both legal (off-chain) and technical (on-chain) provisions. Standardizing such agreements across the ecosystem might require them to be adopted as an ERC type standard or incorporated into the V2 of the COALA DAO Model Law, which has previously been used by legislators as the basis on which to draft their own DAO legislation. Ideally, this step can also lead towards better recognition of DAO workers across jurisdictions, enabling them to be protected by various statutory labor rights while also making them eligible for state based social security schemes at the national level.

✿ **Strategic alliances for standards setting and collective bargaining.** Throughout the Web3 Work Forum, we discussed the role that unions, works councils or guilds might play for improving the conditions for DAO contributors. While unionizing adds additional strain to an already overexerted workforce and raises difficult questions around adequate representation, the concept of federated works councils can help to overcome such difficulties. The goal here is to establish an organizational body that can speak and negotiate on behalf of contributors across the ecosystems. Worker councils, a concept more common in Europe than the US, are worker representative bodies on the level of individual organizations. Having a worker council may be anchored as good practice in the standardized contracts discussed previously. Elected members of these works councils could come together to form a federated, cross-DAO works council which could help to negotiate and advocate the DAO contributor perspective with regulators or on an ecosystem-wide level. This type of model has previously been trialed in transeuropean works councils. Finally, adopting the guild model for themselves, DAO contributors would identify predominantly with their contributor peers, instead of a specific DAO. As a guild, DAO contributors could cartelize their labor, setting collective prices or standards with a critical enough mass to corner the market on that type of skilled labor.

## 5.3 Fostering exogenous advocacy for regulatory clarity

Finally, internal policies, standards and norms can only take us so far. When it comes to social security or creating better working conditions in the web3 ecosystem we continue to significantly depend on state-based regulation. Throughout the Web3 Work Forum we identified three domains of policy making that are particularly relevant for DAO contributors; these are not so much elements of solidarity primitives per se, but instead are promising areas that could benefit from increased web3 advocacy.

✿ **Regulation on DAO legal personhood and the status of DAO workers.** In order to plug into statutory labor rights across various jurisdictions it is necessary for DAOs themselves to be recognized as entities with legal personhood and in turn recognize DAO contributors as

a type of workforce. Clarity on the legal personhood of DAOs can either be achieved via legal incorporation or by advocating for more broad-based adoption of initiatives such as the COALA DAO Model Law [4], which proposes a framework that gives DAOs legal recognition without requiring legal incorporation and has recently been adopted in Utah [10].

✿ **Securities regulation.** More regulatory clarity for DAO contributors could also be achieved by decoupling financial and governance rights in tokens. This approach could significantly contribute to reducing uncertainty in terms of income taxes, or legal liability for governance decisions. However, the efficacy of this approach is significantly dependent on various jurisdictions devising clear token frameworks (especially concerning tokens as securities).

✿ **Digital nomadism and free movement of labor.** DAOs are natively digital and global, and so is their workforce. As such, web3 advocacy can and should position this highly skilled workforce within the ongoing post-covid dialogue on supporting regulatory frameworks for digital nomadism (especially frameworks that give this freedom of movement to holders of all types of passports). This conversation can be a door opener to a more general discussion on the freedom of movement of labor, which is becoming particularly important in geographic areas with aging populations and could greatly contribute towards more economic equity in web3 and beyond.

## 6 Design challenges

Above we have described the recommendations and findings that emerged from our forum sessions on the topic of web3 social security. Spelling out specific primitives is beyond the scope of this survey; however, we have clearly demonstrated the possibilities for diverse types of mechanisms that address contributors' requirements for social security. Combining the above mechanisms and propositions allows us to think in more nuanced ways about the design of solidarity primitives for web3 social security: for instance, developing a UBI for a guild of web3 researchers funded through contributions from VC raises; or using coordinated cross-DAO proposals for the establishment of a legal slush fund for advocacy on contributors legal status, funded through protocols' sequencer revenue.

Below we discuss challenges and considerations that need to be addressed in order to build a solidarity primitive that addresses the requirements for contributor security.

### 6.1 Defining membership

One of the most challenging and most overlooked aspects in designing a solidarity primitive is the membership structure. While something like "membership" might seem unimportant in the context of DAOs which are open by default, it is an essential aspect of defining eligibility and access to services such as a pension fund or collective buying of health insurance, or any other such opt-in structure. Specifically, codifying membership has two valences:

- First, managing the fluid nature of contributors who are working casually and often pseudonymously;
- Second, moving toward a classification of the disparate forms and degrees of contributions in a DAO, from overtly technical (and easily definable – i.e. discrete and quantifiable) to the corralling of fandoms (less definable but potentially just as valuable)

In the context of web3 solidarity primitives, membership boils down to an allow-list with on-chain accounts that are beneficiaries of the services provided. However, defining membership criteria and curating access to said services are social and political questions, especially for categories of web3 workers whose contribution is not as easily trackable as software development. For instance, how may we enshrine categories of non-technical contributions and contributors in a way that enhances the three dimensions of security through equitable processes, instead of creating further competitive dynamics and uncertainty among individuals?

A solidarity primitive requires a careful definition of its membership structure through specific, agreed upon norms as well as mechanisms that make this membership technically tractable. A sybil resistant identity system is a key prerequisite to limit abuses of the system (for a taxonomy of approaches see [16]); additionally, on-chain tools as non-fungible token bound accounts (ERC6551) allow for the creation of NFT-based membership systems that can grant access to certain services and record on-chain activity. Prior to that however, solidarity primitive designers will have to reasonably define:

- Identity system: how to confer identity of membership in a way that can be resilient against bad actors but still protects privacy?

- Threshold requirements for eligibility: what are the threshold requirements for being a member / official contributor that is eligible for some security mechanism? This also means understanding the compliance issues around such a decision and how this maps onto various legal or tax issues with respect to assets or ownership.
- Parameter changes: which people, processes, or automated mechanisms can establish who is eligible based on these criteria?
- Edge cases and conflict resolution: which people, processes, or automated mechanisms can make final decisions?
- Rescission process: What are the conditions that allow a contributor to rescind membership, especially if there is the incursion of some liability for collective payments, legal liability over asset ownership, or any other such matter?

## 6.2 Deployment and adoption of solidarity primitives

Among the different socio-technical imaginaries for web3 work that our DAO contributor ethnography identified, the vision for DAOs as mutualist infrastructures is a primary reason why contributors remain involved in the ecosystem despite the challenges in navigating and operating in such a fluid work environment. Developing solidarity primitives and mutualistic networks for web3 social security is an important step toward realizing this vision. However, deploying these mechanisms and networks is not only up to contributors; they are already overburdened by their daily labor of coordination and often lack the capital, time, and resources to bootstrap and scale mutualistic networks.

Instead we believe that this scenario fits squarely within the mission for public goods funding on Ethereum. When institutional improvements are available to an entire category of workers, whether they are members of said networks or not, they can be considered public goods since they improve conditions for the whole ecosystem. Quality standards for producers are an example of this [12]. In the Ethereum ecosystem the EIP process and the ERC token standard are good examples of public goods in the making. Extending technical and social standards for labor relations is another way to generate positive externalities for the web3 ecosystem.

For this to happen, however, there needs to be a collective effort by industry leaders and organizations in facilitating, by example, the establishment of the normative basis that valorizes this aspect of DAO work. While grant protocols exist, such as Bitcoin’s Allo Protocol, there needs to be substantial effort by aligned organizations in matching donations toward the realization of on-chain funds that address contributors’ needs (e.g. parental leave fund, health fund, mental health support services etc.). Not only would such efforts improve working conditions for DAO contributors but they would also contribute to reinforcing the endogenous and exogenous legitimacy of the space, both within web3 and toward external regulators [5].

## 7 Conclusions

In this paper we have articulated the concept of solidarity primitive for web3 social security, and sketched a framework to design solidarity primitives in a modular way, based on the propositions and concrete ideas emerged from Web3 Work Forum and our ethnography with DAO contributors. Making these recommendations effective and scalable, while establishing rules and enforcing them is not just a question of mechanisms and financial incentives. While developing a solidarity primitive requires few key seemingly straightforward elements (membership structure, funding and distribution mechanism, purpose), these call for a concerted use of on-chain mechanisms, endogenous norms, and exogenous rules. Naturally, this demands a highly nuanced approach to these issues within web3 work, which will take time and care to mitigate.

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