Ulex: Open Source Law for Non-Territorial Governance

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Abstract

Communities that stretch across international borders struggle to resolve their members' disputes. It is not a trifling problem. Distributed protocols such as Ethereum, EOS, and Dash host hundreds of billions of dollars in assets and handle transactions worth millions daily. Their members likely number in the tens of millions, scattered in unknown locations across the globe. Even the most successful of these communities have fractured over questions of how to interpret, apply, and amend their rules. The resulting "governance by hardfork" has generated skepticism about all things crypto –from currencies, to economics, to governments. Distributed protocols need a comprehensive, trustworthy, independent set of rules for resolving disputes. Ulex, an open source legal system, offers a solution. Its substantive and procedural rules can resolve the disputes of communities stretching across international borders. Its flag-free rules, drawn from tested and trusted private and non-governmental sources, define a wide range of legal claims and the procedures to follow in resolving them. This paper explains how Ulex can upgrade the governance of distributed protocol communities, describes current efforts on that front, and paints an attractive future of open source, non-territorial law.

Keywords: non-territorial governance, Ulex, open source, blockchain, distributed protocol, private law.

Resumen

Las comunidades que se extienden a través de las fronteras internacionales luchan por resolver disputas entre sus miembros. Esto no es un problema insignificante. Los protocolos distribuidos

como Ethereum, EOS y Dash alojan cientos de miles de millones de dólares en activos y manejan transacciones por valor de millones diarios. Sus miembros probablemente ascienden a decenas de millones, dispersos en lugares desconocidos en todo el mundo. Incluso las más exitosas de estas comunidades se han fracturado por preguntas sobre cómo interpretar, aplicar y modificar sus reglas. La resultante "gobernanza de hardfork" ha generado escepticismo sobre todas las cosas criptográficas, desde las monedas, hasta la economía y los gobiernos. Los protocolos distribuidos necesitan un conjunto de reglas integrales, confiables e independientes para resolver disputas. Ulex, un sistema legal de código abierto, ofrece una solución. Sus reglas sustantivas y de procedimiento pueden resolver las disputas de comunidades que se extienden a través de las fronteras internacionales. Sus reglas sin bandera, extraídas de fuentes privadas y no gubernamentales probadas y confiables, definen una amplia gama de reclamos legales y procedimientos a seguir para resolverlos. Este artículo explica cómo Ulex puede mejorar la gobernanza de las comunidades de protocolo distribuido, describe los esfuerzos actuales en este campo y pinta un futuro atractivo de código abierto y leyes no territoriales.

Palabras clave: gobernanza no territorial, Ulex, sistema legal de código abierto, blockchain, protocolo distribuido, ley privada.

1. INTRODUCTION: DISTRIBUTED GOVERNANCE NEEDS NON-TERRITORIAL LAW

As human society has evolved from clans to kingdoms to nation states, its communities have grown larger and less tangible. Our first and most concrete bonds remain those forged by birth. Wider family relations include distant kin. Kingdoms connect strangers through laws abstract enough to fit into code, but real enough to kill. Maine's (1861) influential account of how contract relations tend to supplant status ones in developing societies represents a signal example of the more general phenomenon: Human society tends toward dematerialization, in that it moves from the immediate and physical to the remote and intangible.

The dematerializing of society has not stopped with nation states. Granted, it seemed for a long while as if the international system set up in the Treaty of Westphalia would keep the world's largest communities more or less within their defined boundaries, functionally and physically. People talked, traded, and traveled internationally of course, but most people lived in one place, under one law, most of the time. In its ideal form, this system gave nation states unchallenged authority within solid, controlled borders. It offered a comfortingly simple view of the world to those who, like Fukuyama (1992), would have history stop. Unconcerned with what sages of statecraft proclaim, however, non-territorial communities have started drawing outside the lines of traditional political institutions.

The Internet opened cross-border communications to the masses, allowing casual personal conversations to stretch across the globe. Non-territorial talk has flourished. Mere talk has little need for law, though. Only after Bitcoin raised the stakes by turning talk, in the form of binary computer code, into money did distributed protocol communities find themselves sorely needing effective ways to resolve inter-member disputes. Though commentators have recognized the problem, solutions remain elusive (Yocom-Piatt, 2015).

Bitcoin itself provides too little infrastructure to support dispute resolution services. However, it inspired more sophisticated protocols, such as EOS, Decred, and Dash, designed to support voting, delegation, funds disbursement, and other administrative functions (Smith + Crown Intelligence, 2019); But only very

recently, and still very imperfectly, have these non-territorial communities begun to address the challenge of resolving disputes between their users, who log on from points scattered across the globe, identified only by alphanumeric pseudonyms.

The largest of these non-territorial communities handles transactions worth tens of billions of dollars daily and holds assets worth hundreds of billions (CoinMarketCap, 2019). Though an exact census remains impossible, it likely runs to millions. Despite having so much at stake, though, these new networks have stumbled at governance. Even the most successful has suffered hacking attacks, emergency hard forks, and the influence of personal politics (Buterin, 2017 & 2018). This disappointing performance has discouraged investment and engendered broad skepticism about all things crypto-, especially crypto-governance (Daian, P., Kell, T., Miers, I., & Juels, A., 2018).

Though less noted than high profile failures like stolen funds or insider influence, distributed protocols communities suffer a more fundamental and widespread problem: they have no reliable way to resolve disputes between members. Wanting that social good leads to all manner of social ills. Beyond specifying the purely

technical standards, most protocols do not even try to document the rules for how members should treat each other to avoid conflict and, when conflict inevitably erupts, how to resolve it.

Consider Bitcoin. It has suffered a number of existential conflicts in its relatively short history. In no case were these resolved by public deliberation in the community's governing institutions. Bitcoin has no such institutions.   Nor did the contesting parties seek guidance from objective and qualified third party arbitrators. The Bitcoin protocol does not itself include rules for resolving user disputes, and those fighting over Bitcoin's fate never expected that any territorial sovereign's courts would settle their conflicts. How could a territorial court understand their world? And how could it enforce its ham-fisted decisions? Happily, for Bitcoiners, it could not.

Instead, Bitcoin has relied on extra-protocol manipulation by influential stakeholders to quell community unrest (Buterin, 2013) or, when that has failed to forge the peace, splitting the community into separate and incompatible parts via a hardfork (Bitcoin Exchange Guide, 2017).

Not all protocols ignore the need to provide a way to resolve their members'

disputes, but none appear to have satisfied it. The creators of the EOS network in particular made a great show of creating a Community Arbitration Forum bound to resolve member conflicts according to the rules set forth in the EOS Constitution. The result? Utter failure. Despite its attempt to bind users to substantive rules and a forum for resolving disputes, the EOS Constitution had no such effect because it was never presented to prospective users in the form of a mandatory "click-through" agreement. Without a binding contract with and between users, EOS has no just or practical way to give its supposed laws effect. With it, EOS's rules would be enforceable like any other agreement to resolve disputes under private arbitration.

Perhaps that was all for the better, given that the EOS Constitution's threadbare invocation of "this Constitution and the Maxims of Equity" (EOSIO Core Arbitration Forum, 2018, Art. X) offers nothing close to the level of detail required to handle transactions worth billions of dollars and involving millions of users. Procedurally, the EOSIO Core Arbitration Forum never operated as planned, instead relying on unprofessional and *ad hoc* action (Floyd, 2018). The EOS community subsequently abandoned the EOSIO Core Arbitration

Forum and Constitution for the EOS User Agreement (EOS New York, 2019). Curiously for a supposed agreement, however, the document claims that the network's "functions, enforced by code, do not require the consent of Users" (Art. III). It offers nothing by way of substantive rules or a means for resolving members' disputes.

The Decred network likewise offers a self-proclaimed "Constitution" (Decred, 2019) that fails to deliver. Though it defines a few technical details, the document punts to the "Decred network's consensus" for rules to govern users. It says nothing about dispute resolution. Despite its grand name, therefore, Decred's "Constitution" does not provide its members with the rules necessary to avoid and defuse conflict.

Why have distributed protocols fallen so short of providing the rule of law? Despite the fact that they both work with code, the categories of programmer and lawyer seldom overlap. The programmers responsible for creating distributed protocols evidently know quite a bit about how to write rules for data but very little about how to write rules for humans. Lawyers could doubtless do better at the latter coding job, but few lawyers know much about distributed protocols.

Still less will most lawyers, accustomed by training and vocation to think of law as the sovereign command, perceive that distributed protocol communities need an entirely different approach. Non-territorial, open-source, opt-in governments need legal systems with the same features.

Legal systems designed by state officials to provide top-down control within bounded territories do not offer a very good fit for communities distributed across national boundaries, governed by the undirected choice of independent nodes in an ever-changing network. Non-territorial governance needs non-territorial law. This paper explains why and how Ulex, the open source legal system, can fill that need. It begins with a summary description, with special emphasis on the features that suit it for non-territorial communities. The section then describes ongoing volunteer efforts to put Ulex into public use.

2. CURRENT EFFORTS TO IMPLEMENT ULEX: THE OPEN SOURCE LEGAL SYSTEM

As befits a legal system modeled on open source software, complete with call-outs to legacy code, Ulex has a startup-style name. The word *Ulex* comes from the combination of the letter *U* with the Latin word for law, *lex*. The *U* stands not for *universal* or *uniform,* but instead from a somewhat silly pun: "You put the *u* in *Ulex*." With regard to its name no less its underlying philosophy, therefore, Ulex follows the lead of Unix, GNU, and Linux, the names of which also originated in wordplay, as Tozzi (n.d.) recalls.

Ulex relies entirely on volunteers for its growth and support. It owns nothing; sells nothing. No for-profit or government firm funds or directs Ulex. Its friends evidently act from other motives. Perhaps they thrill in helping to launch an idea that might change the world, and for the better.

Like a flock of birds or a pod of dolphins, Ulex volunteers gather in different places and in different forms at different times. It began as an idea by the author of this paper, then took form in written words (Bell, 2018, p. 185). Thus set free, Ulex quickly found friends. The Startup Societies Foundation won a 5,000 Euro grant from the European Resource Bank to promote Ulex's development, which it leveraged into more funds via an Indiegogo fundraiser (DeMorro n.d.). Those funds went to public education about Ulex through the Institute for Competitive Governance, a Foundation

research project, including support of the present publication.[1] (Id.)

Ulex, as the legal equivalent of an open source software project, has settled in at the Ulex Open Source Repository on Github, the most popular venue for open source coding projects (ulex-opensource, 2019). There, a small volunteer corps keeps the legal code updated and looks for new installs. Since they stand to get little more than glory for their efforts, it seems only fair to give them public credit. The members of the Github Ulex Open Source Repository include: Bradley Hook, Christian Saucier, joestartupsocieties (Joseph McKinney), David McFadzean, the author, and Wil Bown. (ulex-opensource, 2019, People). May their efforts benefit many and inspire more than a few.

The following subsection begins with a description of some recent actions of the Ulex volunteer corps. The overall impetus: make it easy for parties engaged in online contracting to choose Ulex for their agreements. After that account from the front in the market penetration campaign, the subsection will offer some working legal code: model clauses to put into contracts to make sure that Ulex works as intended. The plugin will deliver Ulex to non-territorial

communities; the model clauses will ensure that Ulex installs and runs smoothly.

3. ULEX PLUGIN

The Ulex repository offers a variety of public resources. It provides version 1.1 complete with links and a lovely picture of Ulex's flowering mascot, *Ulex europaeus*, commonly known as *gorse*. (ulex-opensource, 2017). It offers a forum to air questions about amending Ulex, such as to create a new version 1.1.a. (ulex-opensource, 2019, Ulex issue #5). And most notably for present purposes, it offers the Lexinomicon game.

The Lexinomicon game is not about moving pieces around a board or shooting computer-generated zombies. It instead provides a simple, robust structure for incentivizing distributed members of a community to contribute to a defined project, one usually chosen, as here, to contribute to the community's common good. Specifically, the Lexinomicon game will allow the volunteer corps to bring other *paid* minds to bear on the question of how to encourage Ulex's growth, by posing challenges and offering monetary rewards for those who satisfy them.

So far, the game remains a mere scrimmage. If all goes as planned, it should

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[1] The author was not offered, did not receive, and would not accept those funds, to which he instead contributed.

see its first use to develop the Ulex plugin. First, though, the volunteers must define the specifications that free-lancers must satisfy to win Lexinomicon's rewards. The development team has nearly finished that task, making it as far as a draft a wireframe interface (ulex-opensource, 2019, Lexinomicon issue #28). Once having thereby defined the requirements for winning, the team can sit back and see what Lexinomicon's bait attracts. Ideally, it will result in plugins by which users of popular distributed protocols and services can apply the legal system to their transactions, both when they make agreements and when they break them.

The Ulex plugin could not simply make it easy for parties to invoke Ulex, using choice of law and forum clauses like those described below. It could potentially 3also give them access to a network of legal services. No less than in territorial communities, the structure provided by law of non-territorial communities should eventually come to support a rich web of interconnected services. Lawyers specializing in Ulex will upload their practices, drafting contracts, creating corporations, and litigating in the new legal system. Disputes will give rise to adjudication services, which will support a

bevy of Ulex judges-for-hire. Publishers will collect opinions. Commentators will pick them apart. Like ocean life congregating around a tapped-out oil rig, this ecosystem of services will make Ulex more convenient and resilient.

To nourish that kind of growth, the Ulex plugin will support identities, credentials, and trust ratings. These features will help users evaluate counterparties using the network. Low-trust communities seldom thrive; trust-rich ones enjoy lower transaction costs. With these add-ons, Ulex could help ensure the survival and growth of its fledgling effort.

Provided that network effects kick in and Ulex begins to see wide use, users can enjoy safe, convenient, and cheap transactions among themselves, encouraging the growth of peaceful and prosperous communities. It all has to start with just one or a few specific applications, though. The following paragraphs focus on a few of the most likely candidates.

EOS, Decred, and other distributed protocol communities. These could in theory adopt Ulex wholesale or piecemeal, at a level each individual user accepts when transacting through the protocol or in finer grained agreements, built at the entrance to proprietary side-channels. Whether practice

can do likewise remains as yet untested. As related above, no distributed protocol of note has yet succeeded in both conditioning access to agreement to specific terms of use and creating non-territorial mechanisms for adjudicating community disputes. EOS tried hardest and came closest - an encouraging result. Perhaps having an Ulex plugin available could encourage another, more successful effort.

Kleros. Kleros offers an open source online dispute resolution protocol that uses the blockchain and crowdsourcing to adjudicate disputes (Kleros.io, 2019). Contesting parties choose the number of jurors and the specialized court from which jurors will be drawn to decide their dispute. Kleros directs the parties' query to a panel of jurors randomly selected from among those who have agreed to adjudicate disputes in anticipation of receiving arbitration fees by the parties. Jurors vote on which party should win the dispute. Those who vote with the consensus of all jurors win the amounts staked by the losing jurors (Lesaege, Ast, & George, 2019). Kleros thus far has seen only test use (George, 2018).

Somewhat surprisingly for a self-proclaimed system of adjudication, Kleros says next to nothing about the choice of law. It neither set a default for all disputes nor sets forth guidelines for specialized courts to follow when it comes to deciding whether to respect the parties' choice of law, if they make one, and if not, what law to apply to their dispute. The closest it comes to addressing the crucial topic appears in its projected plan to let jurors of each specialized court set "guidelines about how to arbitrate disputes" that function like "the laws in traditional justice systems" to "determine which party should win a dispute." (Lesaege, Ast, & George, 2019, p. 10). While that leaves open the possibility that informed jurors will in each case choose a body of law adequate to solve a wide range of disputes efficiently, without showing a bias to any particular territory, it does nothing to guarantee or even encourage that outcome. Ulex could solve this limitation by ensuring that specialized courts use its rules to decide when to adopt contesting parties' chosen law, if any - a safeguard to prevent them from, say, choosing trial by combat. A platform such as Kleros, thus, could significatively benefit from choosing a Ulex for all of its cases.

OpenBazaar, an open source project, has developed a protocol enabling e-commerce sales through a decentralized online market. It operates on a peer-to-peer

basis, with no central point of control, and offers transactions to take place without intermediaries, fees, or legal restrictions. Open Bazaar's creators may have taken their aversion to the law too far, though. Like Kleros, it fails to provide adequately for parties to choose the law applicable to their dealings.

The Terms of Service for using the market's software interface specifies only that "OpenBazaar users must adhere to the laws in their own legal jurisdiction" (OpenBazaar2 n.d.). That leaves the law governing sales contract ambiguous when buyers and sellers are not in the same jurisdiction. The clause was evidently written not to govern transactions but to exonerate OpenBazaar and other users from any one users' violation of local criminal laws. The use of OpenBazaar to sell illegal drugs, infringing works, and other contraband demonstrates that concern for criminal liability is not paranoid. But a term admonishing users to obey their local laws cannot substitute for a choice of law clause.

OpenBazaar deals with conflicts arising between buyers and sellers by providing an option for them to choose a third party "moderator" to settle disputes (OpenBazaar, n.d.). At no point does the interface require any party to choose the applicable law; each moderator gets to set his or her own terms. Open Bazaar offers the policy statements of three moderators as examples for others to follow (Id. at para. 6). None of these examples includes a choice of law provision, though moderators more aware of this lacuna could fill it by specifying the body of law they will apply to disputes under their consideration. That, too, would provide an apt place to invoke the rules of Ulex. Indeed, the Terms of Service would do better to specify Ulex or some other suitably open source legal system as the applicable default unless users choose otherwise.

4. MODEL CONTRACT CLAUSES WITHIN ULEX

Territorial sovereigns presume that their law controls everything in their jurisdiction. By default, if you live in a country, its laws apply to you. Ulex, in contrast, can apply to a dispute only by the consent of all parties. It rules no territory and does not presume to force itself on anyone. How do parties express their consent to Ulex? Through contracts.

New users come to Ulex through contract. The open source plugin described above will help members of non-territorial communities to easily choose Ulex as the

law to govern their agreements. Contracting parties can opt into Ulex by more conventional means, of course; Ulex has already seen use by parties who, while using solely electronic rather than paper forms, have used relatively conventional choice of law clauses to make Ulex operative for their agreement. In any event, those contracts will need to use particular bits of legal code to make Ulex operate as planned.

This section offers three model clauses for implementing Ulex. These clauses cover choice of law, choice of forum, and forfeiture of rights and remedies. The first two will sound familiar to any attorney, as equivalent clauses appear routinely in commercial contracts. The last clause might sound familiar to estates and trusts lawyers as something like a will's *no contest* clause. Others might find it reminiscent of open source licenses, which incentivize those using the materials to keep them in the open source environment rather than stealing them away to a closed one. Violate that license and you lose the right to use the open sourced works. This is similarly the case with the model Ulex clause.

Strictly speaking, Parties who want to invoke Ulex by contract need only add two clauses to their agreement: one designating the choice of law clause and another designating the choice of forum. The former designates the law chosen by the parties to control any disputes arising under or related under the contact. A choice of forum clause specifies the method or institution chosen to decide those disputes. Both clauses appear routinely in contracts of all types and receive respectful treatment even in courts that, by enforcing the clauses, effectively lose control over the dispute. Happily, Ulex can rely on fairly standard choice of law and choice of forum clauses.

Most choice of law clauses say little more than that the chosen law will govern any disputes arising under the contract. Lawyers often add a bit of verbiage to ensure the clause reaches as widely as possible. It would not do to have the chosen law apply only in the event of formal litigation, after all, when the parties also want it to apply to negotiations, mediations, or other relatively informal dispute resolution processes. The model clause offered below thus includes similarly broadening terms:

Model Ulex Choice of Law Clause: Ulex governs exclusively any claim or question arising under or related to this Contract. The Parties

represent and warrant that their choice gives them substantial connections to Ulex, that they have a reasonable basis for choosing that law, and that no other authority has a materially greater interest in the application of its law to the Contract.

In contrast to the first sentence of that model clause, the second sentence is not commonly seen in other contracts. Because most choice of law clauses name the law of a sovereign in which at least one party resides or does business, they have no need to emphasize the suitability of applying the law that the parties choose. Unlike a territorial sovereign, Ulex has the advantage that it does not presume to rule anyone. Parties invoking Ulex thus might want to play it safe and spell out exactly why others should respect their choice of law.

The second sentence of the model clause does this by referencing the parties' connections to Ulex, reasons for choosing it, and the absence of any more applicable law. Why those items? They come from Ulex itself. Specifically, the clarifying sentence invokes the standards for determining when a court should apply the law contractually chosen by the parties as set forth in § 187(2) of the Restatement of Conflict of Laws,

Second (1971), made part of Ulex 1.1 at Rule 2.4.1. That rule defers to the parties' chosen law unless it has "no substantial relationship to the parties or the transaction" and unless "application of the law of the chosen state would be contrary to a fundamental policy of a state which has a materially greater" claim to govern it (ulex-opensource, 2017).

The model Ulex choice of forum clause does what any such clause should: designate which institution will have the power to issue binding legal decisions about claims or questions arising under the contract. Contracts that choose the courts of a territorial sovereign have it relatively easy: they need only say "U.S. Central District of California, Southern Division" or the like. Or they might cite a prominent private arbitration firm local to one of the parties. Ulex, having not so much a place as a vector, has to take a bit more care to anchor itself to a working institution.

The model clause of course defers in the first instance to the parties' choice of Forum, and invites them to fill in the blank. In actual practice, the clause can most of the time end there. The parties will agree to some reasonable Forum, such as a private arbitration service located half-way between them in a neutral country, or perhaps soon an online Forum where litigants can choose

neutral experts to decide their disputes under Ulex law. But for now, the model clause plays it safe by offering a long list of Fora and backup Fora:

> **Model Ulex Choice of Forum Clause:**
> Any claim or question arising under or related to this Contract shall be resolved in a Forum hereby designated by the Parties to the agreement: [insert name of chosen forum]; else a Forum designated by separate contract of the Parties with each other or a third party; else a Forum provided by the Ulex Foundation; else the most recent Forum to decide a Ulex claim or question, else JAMS in Orange County, California.

If the Parties do not choose a Forum outright, the model choice of forum clause fills in for them. The list of backup options begins by referencing the Parties' other agreements, whether between them or with some third party. What kind of third party? Most notably, one like a distributed protocol or similar platform that establishes choice of forum agreements with each of its users. For example, a later version of EOS might actually bind all users and through which

they chose a Forum. This model clause would then make that choice operative.

The next fallback? A Forum provided by the Ulex Foundation. No such Forum yet exists; the putative Foundation exists as little more than a Bitcoin address in the author's care. The model clause prepares the way for what might be the model forum — a self-sustaining open source Forum by and for Ulex users. Until that judicial dream comes to fruition, this sub-clause will affect Parties little more than a speed bump.

The next sub-clause also prepares for a hypothetical Forum — one already experienced in Ulex matters. No candidate institution appears as yet to qualify, though presumably one soon will. In the meantime, the list of alternative fora concludes with a real space private arbitration service as good as any and better than most: JAMS. It is not cheap, and losers pay legal costs in Ulex, so only a very rare and important dispute would make it this far through the model choice of forum clause, to the bitter end.

The model Ulex forfeiture clause engages in the same sort of legal judo routinely used by estates lawyers, who use *no-contest* clauses to protect wills and trusts from wasteful litigation brought by greedy beneficiaries disgruntled with their windfalls (Legal Information Institute, n.d.). Though

the wording of the Ulex forfeiture clause comes from that context, the inspiration comes from the use of copyright licensing to protect open source software from getting swallowed up by those drinking from its fount of code. Open source software defends itself by attaching license-in-kind requirements to derivative versions of works in its ecosystem. Ulex faces a similar problem; the model forfeiture clause offers a similar solution.

Ulex cannot survive if Parties cannot trust it to generate predictable answers to important questions such as: What law applies to this dispute? Who will decide it? If one Party takes those kinds of questions to a forum other than the one agreed to in the Contract, and defined in the choice of forum clause, both the other Party and Ulex users generally would unjustly suffer harm. The defecting ex-Party would make remaining Ulex users less confident of how their own disputes might come out. The wrongful act would cast a shadow on the entire Ulex ecosystem, to the loss of all those keeping their promises.

The model forfeiture clause brings matters back into balance by making a Party tempted to do extra damage face the prospect of suffering extra costs. The clause works by making those who defy their agreed choice of forum lose all rights and remedies under the Contract. That discourages defection in the first place. Parties who nonetheless defect to other fora run a predominating risk of being denied relief. Even an unapproved forum would have to admit, upon reading the forfeiture clause, that the complaining Party cannot logically prevail by making any claims under the disavowed Contract. They would get only a shrug and a bill. Those dismal prospects will again deter defection. The result: the Contract grows stronger to the benefit of both Parties and Ulex users everywhere.

> **Model Ulex Forfeiture Clause.** Any party that raises a claim or question arising under or related to this Contract in a forum other than one complying to its Choice of Forum clause thereby forfeits all rights and remedies under this Contract.

What about Parties who defy the choice of law clause by trying to have an unqualified forum apply other law to the Contract dispute? That, too, arguably inflicts negative externalities on third party users of Ulex. Perhaps. But the present model clause already does as much as any contract

properly can; contract law (including the contract law embodied in Ulex Rule 2.3) does not allow punitive damages. Furthermore, Ulex's first iterations would not want to summarily reject good rules from other legal systems; far from it. Punishing Parties for arguing for the application of foreign influences would raise irresolvable boundary questions and subvert Ulex's international and open aspirations.

Contracting parties need only include the first two model clauses to give Ulex effect in their relations. The forfeiture clause strengthens that choice by encouraging the Parties to stick to their promises, increasing the predictability of adjudications of the Contract, and by protecting the Ulex network from loss of goodwill. Best practices thus suggest using all three.

Those borrowing these clauses might benefit from customization in particular cases. Parties might in particular want to specify which version of Ulex they choose, given that it has already reached version 1.1 and more will doubtless follow. The Model Clauses come with no warranty and nothing here constitutes legal advice, so it might be best to consult an attorney when adapting the model clauses in especially complicated or high-stakes cases. Because Ulex

incorporates the most popular and well-known contract law, as set forth in the Second Restatement, competent attorneys should find it relatively easy to deal with.

5. ULEX AND THE NEEDS OF NON-TERRITORIAL COMMUNITIES

Ulex originated to serve special jurisdictions rather than non-territorial governments (Bell, 2018)[2]. As it turns out, though, both kinds of communities need world class rules from flag-free sources. In the case of special jurisdictions in low and middle income countries, importing laws *en toto* from a foreign sovereign risks inflaming locals. It would also tie the special jurisdiction's legal development to that of a distant, different, and presumably uncaring sovereign. That cannot make for good policy.

Why not create a special jurisdiction's laws completely from scratch? Because discerning investors and residents would balk at the prospect. Lawyers, like wine connoisseurs, tend to disdain innovation. Innovation means change; change means risk. Guiding clients through red tape labyrinths can generate billable hours, granted, but no honest lawyer wants work just for work's sake.

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[2] Just before this paper went to press, the Próspera ZEDE in Roatan, Honduras launched with a Ulex built into its Common Law Code.

Has human behavior changed so much over that the law's ancient wisdom needs updating? Not likely. New laws tend either to get something fundamental wrong, or to make wrong something that should remain legal.

So if a special jurisdiction cannot use foreign law, and does not want to use new law, what can it do? It could get its law from private and non-governmental organizations such as the Uniform Law Commission, International Institute for the Unification of Law, and American Law Institute. That is what Ulex does, copying select, tested and trusted rule sets from those and other flag-free sources, adding a handful of bespoke provisions, and combining them in a unifying framework to create a comprehensive legal system. Ulex thus provides a third and less controversial option for special jurisdictions than importing rules from a foreign sovereign or creating an untried legal system out of whole cloth.

The same features that suit it for special jurisdictions also suit it for non-territorial communities. These, too, must avoid tying themselves to any particular sovereign power. In this case, though, it is less to avoid inflaming locals than it is to abstain from favoring any particular subset of members. Like special jurisdictions, non-territorial communities should avoid trying to recreate the law from scratch. They have tried that, already, to disastrous effect.

Ulex might work well for both special jurisdictions and non-territorial communities because its inspiration comes from a completely non-political source: the history of computer science. Early computers ran much as governments do today: Developers wrote a unique operating system for each machine. The first operating system written to run across computing platforms, Unix, appeared in 1970. Over the following few decades, the spread of personal computers drove competition between computer operating systems, encouraging the development of proprietary options, like Microsoft Windows and Apple's OS X, as well as non-proprietary options like GNU/Linux.

Only recently has governance advanced to a point that computer science reached in the era of shag carpets. A few innovative countries have begun experimenting with installing new legal operating systems—specifically, common law rules and procedures—on their territories. We now stand on the cusp of a Cambrian age in governing services. The

advent of special jurisdictions, distributed protocols networks, and other startup communities stands to bring something like the PC revolution to governance, encouraging unprecedented levels of competition and innovation. Just as GNU/Linux freed computer operating systems for public use and adaptation, so too could systems such as Ulex give the public open source legal systems. Both special jurisdictions and non-territorial communities could benefit.

Special jurisdictions running Ulex might bring prosperity to regions plagued with bad government. Similarly, non-territorial communities might find in Ulex a comprehensive and unbiased source of rules that have been proven by long use to encourage human cooperation and flourishing. An entirely new kind of social organization would arise. Competition from these open source communities might even drive traditional, territorial sovereigns to borrow some innovations from Ulex.

6. CONCLUSION: FUTURE LAW FOR NON-TERRITORIAL COMMUNITIES

This paper has explored ways in which new non-territorial governments need new non-territorial law and explored Ulex as a potential solution. The discussion included a review of current efforts to make Ulex more available to non-territorial communities in the form of an open source application plugin and three model clauses to make sure that, once uploaded to users' agreements, Ulex functions as planned. To conclude the paper, this section looks forward.

Suppose that the Ulex plugin program described above comes to fruition and contracts invoking the legal system spread throughout distributed protocol networks. That could drive the growth of an entire ecosystem of interconnected services: lawyers drafting contracts and litigating disputes; judges deciding cases and publishing opinions; commentators describing systemic trends and local practices; teachers and students creating new generations of Ulex users; and coders building the law into the very structure of online life. Though not directed by any single mind, the community could grow and adapt to continue providing the rules humans need to thrive together.

While this sounds pretty appealing, it arguably understates the potential benefits of Ulex's use and spread, however. Too few people appreciate the subtle power of the rule of law. Like health, it becomes most noticeable in its absence. And yet, like

health, the rule of law holds great value. As the World Bank has carefully documented, the rule of law represents the single largest source of human wealth (2006, pp. 26, 96). Ulex could help non-territorial opt-in governments offer users something better than the legislative and judicial services of territorial sovereigns. It can help these new communities enjoy a kind of social vitality and resilience unknown among the earthly nations.

Taleb (2007) convincingly argues that humans tend to underestimate how bad *black swan* events can get. This paper argued up instead of down, claiming that humans also tend to underestimate how good *gold swan* events can get (2018, pp. 236-37). The same theory drives both hypotheses: by evolution and experience, humans have developed cost/benefit calculations that do pretty well with routine events but that break down at the tails of the event distribution. At those extremes, too few events occur to stimulate or test suitable cognitive tools. It would have done dinosaurs no good to develop behaviors suitable for reacting to massive meteor strikes.

Humans, too, show little appreciation of the probability-adjusted cost of a massive meteor strike. Most people fear ghosts more than they fear the world disappearing in an inferno of heavenly fire. Such black swan events seem not to register, somehow, to most people.

The same theory directed in the positive direction suggests that we run some risk of underappreciating the benefits of upgrading the rule of law. Most of us have known little more than the dinosaur-grade legal systems of terrestrial sovereigns. These operate with brutal efficiency or well-intentioned confusion in the best of cases. Those examples do not equip us to fully understand non-territorial governments and open source legal systems. Add to the cognitive load struggling to appreciate the gentle power of the rule of law. And, lastly, try to fit old cost/benefit models to this new, unprecedented, extreme improvement in governance. How *could* we predict the upsides accurately?

Ulex could also play a role on the black swan side of the event probability distribution. Suppose the nation state system experienced an existential crisis akin to the fall of the Han Dynasty or the Western Roman Empire. That would render extinct, or much reduce and change, the legal systems that now claim the highest authority over adjudicating disputes arising in their territories (which, in the final accounting,

cover all of the earth and appreciable amounts of its seas). It would not likely render humans extinct, though; we would continue in new kinds of communities. Here, too —perhaps here, *especially* — the rule of law will remain, like health, a crucial but intangible object of desire. If no dynasty, empire, or nation state imposes order, it must arise from below, from the harmonized interactions of many people, across many communities, living very different lives even as they agree on a few simple rules.

You can imagine blacker swans —an *actual* massive meteor strike, for instance — but beyond some limits even the rule of law cannot save humanity. Nature and/or god(s) have the final word in the contest of life versus death. Short of that ultimate appellate action, though, humans will need rules for coordinating their behaviors when they gather in large communities, where strangers often interact, and where wrongful behavior could harm innocent humans and valuable assets. That could describe a territorial city or a non-territorial distributed

protocol community. All need ways to avoid and resolve disputes.

Ulex seems to have all the swans covered. It might help initiate a gold one or help recover after a black one. And if the world just keeps rolling along its graceful drunken way, as everybody very rationally supposes it will, Ulex will come along on that ride too.

History has already carried us up to non-territorial communities. These host millions of members and assets worth hundreds of billions. They need law and will have to get it somehow.

If the efforts described here play out as planned, these new communities will find in Ulex the law they sorely want. It only provides the catalyst, of course; the actual institution-building remains the job of each community. This paper has provided model clauses to stimulate the growth of the Ulex ecosystem and given reason to use them. Friends and fate must take it from here.

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