How Smart is a Contract? The limits and potential disasters of legal bots

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Should we let robots take over the legal system?

No way! If we put it like this, the potential dangers of semi-automatic legal processes seem obvious. Who would want to live in a society where contractual relationships are governed through technology? I certainly wouldn’t — although sometimes I wonder if it is already happening, and how we can check this.

Can bots help make the legal system function better?

With the question changed ever so slightly, away from the fear of AI ruling the world, it seems so much more attractive. Maybe even a match made in heaven: the code of law in sync with legal code? More than just a play on words, technological services could certainly automate some of the repetitive, mundane and technical parts of legal practice. Although certain parts of legal contracts are specific, many things are standard procedure, recycled over and over again. Such formats can easily be drafted through a chat bot (basically an interactive questionnaire) guiding a client through the options, and automatically generating a contract — maybe not a perfect contract, but one that is at least good enough.

So who needs an expensive profit-driven lawyer when you have a fully functional app offering reliable legal support? If all other parts of society are evolving rapidly with the digital age, shouldn’t courts, contracts and lawyers also make use of the tremendous computational power with ‘artificial intelligence’ to make fair, informed and consistent calculations?

ACT I: The Future is for Sale: Emergent Legal Tech Services

Exploring the potential applications of legal bots was the topic of the Bot Club evening at Het Nieuwe Institute, with two speakers coming from vastly different perspectives. First up was Matthias Dobbelaere-Welvaert, representing the tech optimist on stage, speaking as founder of a legal tech firm, offering B2B legal support through chat bots. In the announcement of the evening he already boldly predicts that “by 2030, 99% of legal procedure can be automated.”

Which 99%, I wonder? Are we the 99% (again)? Who are then the exceptional ones who can afford to hire a human? The same 1% of corporations that already navigate loopholes in the legal system and get away with murder, embezzlement, rape, exploitation? Who will protect the 99% from the 1% - and if need be, the
other way around?

Note the language of this prediction. He does not say that it will or should be automated. But it can be done. Of course, not everything that is technically possible should be done. Matthias Dobbelaere-Welvaert sketches five developments on the horizon: 1) machine learning 2) robot lawyers 3) mobility (commuting) 4) performance tracking 5) online legal services (I.e. LegalZoom).

This all makes me wonder: are these statistics any more than a sales pitch to replace legal counsel by a chatbot made by none other than the company represented by the speaker? It just so happens that Matthias Dobbelaere-Welvaert is co-founder of theJurists.edu, offering the award-winning legal chatbot Lee & Ally (a contraction of ‘legal’ and ‘AI’). In his talk he asserts another statistic for the short term, with the percentages and the timeframe shrinking to the near future: “80% of lawyers will be obsolete in 8 years”. He seems to be a hybrid of a trend watcher and a startup salesperson, sketching the problems and potential of the future, and then presenting the solutions, in one fell swoop. He also makes a case for designers to pour their creative work into the clunky field of law. “Contracts could be beautiful.”

He seems genuinely cheerful about replacing junior lawyers with AI, introducing performance tracking and a vast array of online services such as LegalZoom. As someone who already is suspicious of human lawyers, I find myself growing increasingly wary of automating legal counsel. Won’t such developments only hardcode human bias and injustices even deeper into our already quite inaccessible and overburdened legal system? Would it make it any more just? Would such legal bots actually solve more problems than they generate?

INTERMEZZO: The Wicked Problems of Technology

Before proceeding to the discussion of expanding legal personhood to non-human entities such as forests and food supply chains, which was the topic of the second talk, it is only fair to point out my perspective regarding the hype surrounding new technologies, as this skeptical approach is the lens through which I tend to reflect on such an event on emergent tech. Part and parcel of complex systems of overproduction and extractivist logic, technical solutions are reactions to ‘wicked problems’ — with no starting point and no end — and they tend to generate at least as many new problems as they fix. In the words of Paulo Virilio:

“When you invent the ship, you also invent the shipwreck; when you invent the plane you also invent the plane crash; and when you invent electricity, you invent electrocution... Every technology carries its own negativity, which is invented at the same time as technical progress. (, p. 89).

A prosthetic device is also an amputation, the potential of one thing always excludes another. We see this with cryptocurrency: the creation of value in one system drains the energy needed to compute it. So the follow-up
question with the invention of any emergent technology is: what new kinds of disaster and failure are embedded in this new system? The very idea of joining computer code and legal code sounds a bit like a gimmick; it’s a technical solution to social problems such as authority, contractual relations, and ownership. The potential disasters are a matter of speculation, but could certainly include: rampant AI leading to lawlessness, the end of the informal negotiations of conflict mediation, resulting in computer-generated loopholes.

And then there is the follow-up issue of law enforcement. Will a computer-generated verdict be enforced by incarceration machines, automatically generated fines and robocops? How will automatic contracts deal with unexpected anomalies of human fallibility, with the complex and manipulative nature of human beings?

The potential of smart contracts seem to be in the twinning of ‘progress’ and profit with unlimited and unstoppable disaster. Human greed, deceit, distrust, conceit, exploitation and entitlement — there is no technology that can repair such hard-wired tendency to corruption. And let us not forget that the law itself is also a form of technology, just as the written word is. Law often defers burning ethical and relational questions to a external verdict, a covering body regulated through the social contracts that give the legal bodies (also nonhuman actors) their ability to act. Human laws are not to be confused with the relational demands of ethics and the laws of nature, such as gravity and entropy.

ACT II: Who can hear the self-owning tree falling?

The second speaker is Max Hampshire, one of the people behind the Terra0 project, exploring if and how a forest can own and regulate itself through a distributed autonomous organization (DAO), that is, through smart contracts regulating non-human ownership. He approaches legal tech issues from a more speculative and skeptical position. As someone who started out as an artist, philosopher and programmer he sketches a doomsday scenario in which he seems genuinely scared by the logical consequences of his own experiments. Blockchain technology might be able to support a self-owning forest, but cannot be switched off so easily. It may very well go on endlessly reproducing itself in the contractual equivalent of endless gray goo, or the accidental end of civilisation engineered through algorithms that operate like the Paper Clip Maximizer.

One of the more interesting things Max Hampshire points out is that non-human legal personhood is really nothing new. For the past centuries we have dealt with what’s called a ‘corporation’, or a ‘company’. Really, “corporations are just really slow forms of AI.”

He’s got my full attention now. Funny how in all the booming discussions about posthumanism, I have heard more about fungi and octopus politics than about how companies also act as nonhuman legal and economic agents — it’s so obvious and ubiquitous, hiding in plain sight.

In Terra0, the creators of the augmented forest DAO are trying to use the
logic of money and capitalism against the grain. Flattening the hierarchy through money instead of creating hierarchies, that’s the aim. By tokenising trees and giving them a trade value, and a self-regulating property system, the forest gains a form of sovereignty or agency to act. Act legally that is. It (the forest) can hire someone to chop and sell trees as lumber, can buy and sell new property, can hire a lawyer (or someday, perhaps the cheaper AI-based legal bots).

What then would the augmented system go for to protect itself: armed guards at the borders? Surveillance systems? Bioengineering to quicken the Day of the Triffids? So we end with greater problems: grey goo, endless self-preserving algorithms with no OFF switch. What kind of disaster does blockchain enable? Are the tokens of trees their twins? And what if these twins are evil? If a tree is owned by the forest, who decides when it will fall? If a tree falls in a self-owning forest, does it still make a profit?

The constraints of this thought experiment however become clear when you start thinking through the vulnerability of a forest. No contract can save it from fire, from a rogue tree poacher, from a storm, nuclear meltdown or plague. The legal agency of trees scarcely feeds back into the ability to act directly within their lived environment.

**Workshop Critical Making: Speculation on the Blockchain**

No amount of talking about smart contracts is quite as helpful for understanding how blockchain technology works as attempting to draft one. The next day we gathered in a glass room under the wings of the archive for a workshop. After an insightful talk by Jaya Klara Brekke, we got a Solidity demo from Max and organised into breakaway groups with worksheets designed by Anja Groten. In the group I ended up in, we decided to try and tackle waste in the food supply chain with blockchain technology. It basically went something like this: every time food is wasted, less of that food is produced. Surplus of one kind of food is supplemented by another kind with similar nutrients. We drafted a system spanning the entire chain from farmer’s field, transportation hubs to supermarkets and to kitchens. With a series of about 10 feedback loops, we solved the problem of overproduction. On paper, that is. We started to get the hang of it. Seeds and eatable fruits and vegetables became the core commodities and waste of nutrients was directly translated into value. Instead of having the food be valuable because of it is a commodity, that is, it is worth more than its production value, we reversed the logic. In our new sketch, the value of food is expressed in its consumptions, that is, in its use value. Surplus is no longer valuable, but every bit of waste has an economic blow and translated into lower value, that is lower production of food. As a self-regulating system, at each point along the way the food is verified for weight and nutritional value. Overproduction leads to hunger, so the system becomes self-regulating.

We started getting excited about our own ideas. Could blockchain technology solve world problems such as food waste, overproduction and intensive agriculture? Thinking through the contracts involved and its implications, we realised that this would be the end of any kind of free choice
regarding food. There may be many months of cabbages for breakfast, lunch and dinner. Would people agree to such a contract, knowing it is better for the planet and the future of humanity, if it means you can probably never eat another avocado, or kiwi, or lasagne Bolognese? And we also started to realise that what we were proposing is a highly regulated technological dictatorship. By speculating we realised that this would be possible, perhaps even desirable for life on earth. But this is a smart contract that nobody would agree to uphold.

Then I got a phone call. A tree had fallen down in the back yard and a large branch had broken the window. I had to rush back home as soon as possible. The obvious irony struck me. No amount of technology and contracts can stop a tree from falling. The laws of code and the code of law still have to deal with the unpredictability of the laws of physics. And Murphy’s law: Everything that can go wrong, will go wrong. It’s just with the speed of automation, it might just go much more wrong, much quicker. Accelerationist strategies to speed up the fall of global hyper-capitalism however tend to pan out worse for those who are more vulnerable within a system.

So out of these two days in a crash course on legal bots, I end with a few concluding remarks on the potential and limits of smart contracts:

1) automated legal services are possible, but are prone to generate at least as many new problems as they fix

2) a smart contract for a self-owning forest doesn’t prevent trees from falling, nor does it make the sound of a tree falling any louder.

3) makers should bear in mind who benefits from the technology being built, and who is being exploited or excluded by it

4) talking about emergent technology and hearing experts exchange views is less illuminating than trying to tinker with tech yourself.