

**Joint Northern Chancery Bar Association and University of
Liverpool Lecture**

**Cryptoassets as property: how can English law boost the
confidence of would-be parties to smart legal contracts?**

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Introduction

1. It is a pleasure to be back in Liverpool to deliver a lecture on what is rapidly becoming one of the most important legal subjects of our generation. I know that there is a huge amount of expertise locally and I very much look forward to our discussion after I have concluded my talk. I am sorry that I missed the topping out of the new £25 million University of Liverpool School of Law and Social Justice building that took place amidst Storm Gareth on 13th March 2019. I just hope I don't receive quite such a stormy reception for what I have to say tonight.
2. My starting point is to ask why smart contracts have taken so long to become ubiquitous. We have been discussing how and when they may take over the world of mainstream financial services for several years. Yet, they seem never to make that breakthrough into reality. So far as I am aware, there has not until now been an end to end smart legal contract in financial services or in any other sector.
3. One answer may be that many of the most useful applications of the algorithms touted as "smart contracts" are

¹ I would like to acknowledge with gratitude the great assistance in the preparation of this lecture provided by Dr J.G. Allen, my former judicial assistant, and Ms Anca-Gabriela Bunda, my current judicial assistant.

not, in fact, as end to end legal contracts at all. Instead, the most useful applications are as components of more conventional legal relationships.

4. But another important answer, I think, is that mainstream investors are unwilling to part with real money without the assurance that there is a legal foundation for their engagement.² Thus far, the legal uncertainty that pervades the use of so-called crypto currencies and cryptoassets for financial transactions has meant that the starting line has not been crossed. It will be crossed at some stage soon. That is for sure. I want to explore in this lecture how that might be achieved.
5. What I do not want to do this evening is to obsess over the fine definitional distinctions that exist between, for example, different species of crypto currencies, such as utility tokens, exchange tokens and security tokens. These are important regulatory questions but they comprise a second stage of analysis, and it is on the basic legal questions that I wish to focus here.
6. Before going any further, I want to bottom out three distinctions, one linguistic and the other two substantive.
7. The linguistic one is between the use of the terms cryptoassets and digital assets. Nobody seems able to agree upon which to use. I was recently told that central banks use the term ‘cryptoassets’, but that the term ‘digital assets’ is broader and arouses less suspicion amongst those who would like to think that the discussion is all about Bitcoin. I shall generally use the term ‘cryptoassets’, because it directs attention to assets that are recorded on a distributed ledger, and stops short of electronic data and intellectual property.
8. The first substantive question is perhaps more important. As I see it, there is a clear distinction between the legal

² ISDA/King & Wood Malletsons “Smart Derivatives Contracts: From Concept to Construction” (Whitepaper, October 2018) at 12.

issues that underpin the mainstream use of cryptoassets on the one hand, and the regulatory issues that will undoubtedly arise once those legal issues have been resolved, on the other hand. Before one starts to regulate economic activity, one needs to understand precisely the activity that is being regulated. That has been the problem faced by those jurisdictions that have chosen to regulate first, and ask afterwards about the activities that they are regulating.

9. The second substantive distinction is between rights and remedies. In the end, what will be of most significance to those using smart contracts will be the remedies that they can obtain when things go wrong. But, like regulation, one cannot reliably ascertain the appropriate remedies, before one has properly analysed the legal rights with which one is dealing.
10. There are two more introductory points.
11. First, I do not want to suggest how those more intimately concerned with the development of FinTech, LawTech and RegTech solutions might achieve their objectives. Innovation is best left to innovators and not pre-empted by judges.
12. The second is also concerned with the innovators. There is a considerable divide between the coders and the lawyers. Many of the coders involved in the development of smart contracts think they have no need for lawyers or law, because the answer is built into the code. As I see it, we, lawyers and judges, need to be persuasive on this point. We need to explain **why** a legal foundation to smart contracts is not only desirable but essential. In two words, the answer is ‘investor confidence’. If smart contracts are to become part of the main stream, investors will need to be able to invoke legal remedies in appropriate circumstances so as to avoid fraud and ensure a dependable market. Coders are, however, now developing technology so they do not have to wait to see what the legal position turns out to be. Part of the persuasive exercise on which we need to become engaged will be to address the misunderstanding that the law does not

apply to these new technologies in a borderless environment. They will need to understand why they actually do need both a legal foundation and built-in dispute resolution – something to which I shall return.

The thesis

13. The thesis in this lecture is that English law is in a good position to provide the necessary legal infrastructure to facilitate smart legal contracts if, but only if, we try to keep any necessary reforms simple. We should, I think, keep sharply in focus the advantages of the common law. It is dependable and predictable and able to build on clear principles so as to apply them to new commercial situations. We should, therefore, be looking to identify and, if necessary, remove any fundamental legal impediment to the use of smart contracts. We should try to avoid the creation of a new legal and regulatory regime that will discourage the use of new technologies rather than provide the foundation for them to flourish.
14. Removing impediments in the way I have suggested would, first, provide parties with the ability to contract as they wish, and secondly, ensure that the economy and the financial system can benefit from innovation.
15. It is tempting to think that we are the first generation of judges and lawyers faced with innovative types of financial assets. But that is not so. Back in the eighteenth century, judges were in a similar position as new kinds of financial instruments were proliferating. In *Nightingale v. Devisme* (1770) 98 ER 361, Lord Mansfield had to decide whether stock in the East India Company was ‘money’. He held that it was not. But he observed that “[t]his is a *new species* of property, arisen within the compass of a few years”. Lord Mansfield may have been fibbing. Trade in stocks had, in fact, been common in London for 75 years before 1770. But it was not until the late nineteenth century that treatises on

investment securities and stock exchange transactions appeared.³

16. Removing legal impediments as simply as possible, in the way that I am suggesting, may very well be easier said than done. But let me explore the possibilities.

Working definitions of cryptoassets and smart contracts

17. In October 2018, the Government’s Cryptoassets Taskforce sought to define distributed ledger technology (“DLT”) and cryptoassets.
18. The Cryptoassets Taskforce said that DLT was a type of technology that enabled the sharing and updating of records in a distributed and decentralised way. Participants can securely propose, validate, and record updates to a synchronised ledger, a form of database, that is distributed across the participants or computers.
19. The Cryptoassets Taskforce said that cryptoassets were but one application of DLT, and that, whilst all cryptoassets utilised some form of DLT, not all applications of DLT involved cryptoassets. A cryptoasset is, they said, a “cryptographically secured digital representation of value or contractual rights that uses some type of DLT and can be transferred, stored or traded electronically”.⁴ This broad definition could be refined, and it may be that significant legal distinctions will need to be drawn as the most useful practical emanations emerge. But this, nonetheless, provides a good working definition for my present purposes.

³ J.S. Rogers, ‘Negotiability, Property, and Identity’ (1990) 12 *Cardozo Law Review* 471, 476.

⁴ See:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/752070/cryptoassets_taskforce_final_report_final_web.pdf

20. It should also not be forgotten that DLT itself is now said to be over cumbersome. It may shortly be replaced or at least accompanied by greater use of DAG. DAG stands for “Directed Acyclic Graph” which, instead of adding blocks sequentially to a chain as in DLT, requires each transaction to be verified by two randomly selected nodes in the system. This saves power, and increases the speed of the process.
21. The classic definition of smart contracts derives from the various writings of Nick Szabo, who defined a smart contract as a set of promises, specified in digital form, including protocols within which the parties perform on these promises.⁵ In a recent analysis of the notion of smart contracts as legal contracts, properly so called, Dr Jason Allen, my former judicial assistant, has suggested that it is a recording of a legal agreement between parties that is written in a language that is both human-intelligible and machine-readable, whose text incorporates an algorithm which automates some or all of the performance of the agreement.⁶
22. These definitions suffice for present purposes.

Property in English law

23. It is now necessary to think for a moment about how property is regarded by English law. The single biggest question that has been raised in this area is whether cryptoassets can be regarded as property under the current law.

⁵ Nick Szabo, ‘Smart Contracts: Building Blocks for Digital Markets’ (1996) 16 *Extropy*, available at: http://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/L_OTwinterschool2006/szabo.best.vwh.net/smart_contracts_2.html.

⁶ J.G.Allen, ‘Wrapped and Stacked: “Smart Contracts” and the Interaction of Natural and Formal Language’ (2018) 14(4) *European Review of Contract Law* 307 at 313.

24. Section 205(xx) of the Law of Property Act 1925 defines property as including “any thing in action, and any interest in real or personal property”. This legislative provision leaves much unsaid about the English law of property. It does, however, allude to the principal division between real and personal property, as well as identifying things in action — conventionally called choses in action — as a special class of personal property.
25. Continental legal systems often start such discussions with an axiomatic definition of the types of things in which property rights can exist. English law, on the other hand, tends to start from the other direction by focussing attention on the scope and content of property rights themselves.⁷ This can be seen from the few cases I want to refer to briefly in this connection.
26. In *National Provincial Bank v. Ainsworth* [1965] 1 AC 1175, Lord Wilberforce said at page 1248 that a property right was necessarily “definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability”. It will be understood that the degree of permanence or stability can nonetheless be ephemeral; there are many valuable rights that only exist for a defined period of time – leases and tickets to football matches come to mind.
27. The following cases show how English law prefers to approach the definition of property by way of remedies.
28. In *OBG Limited v. Allan* [2007] UKHL 21, [2008] 1 A.C. 1, the House of Lords held that the law of conversion was solely concerned with tangible rather than intangible property. Lady Hale said⁸ that “[t]he essential feature of property is that it has an existence independent of a particular person”.

⁷ See Frederick Pollock, ‘What is a Thing?’ (1894) 10 *Law Quarterly Review* 318.

⁸ at paragraph 406.

29. In *Your Response Limited v. Datateam Business Media Limited* [2014] EWCA Civ 281, the Court of Appeal held that an electronic database was not a form of property capable of possession and that, therefore, it could not be subject to a possessory lien. Lord Justice Moore-Bick held that recognising possession of intangible property would be a significant departure from existing caselaw, so that, if there were to be change, it was for Parliament to introduce it. He thought there was “a powerful case for reconsidering the dichotomy between choses in possession and choses in action and recognising a third category of intangible property, which may also be susceptible of possession and therefore amenable to the tort of conversion”. If that case were accepted, the judge thought that “it would have the beneficial effect of extending the protection of property rights in a way that would take account of recent technological developments”.
30. Lord Justice Davis considered in *Datateam*⁹ the potential consequences of recognising a database as a form of property. He said that: “[i]f a common law possessory lien can arise in a case such as the present, it would be a right *in rem*, not a right *in personam*. Probably, I would have thought, it would not be registrable as a charge. At all events, the right to such a possessory lien, if it exists, could have an impact on other creditors of the company (or individual[s]) concerned and could confer rights in an insolvency which other creditors would not have. Further, the position of lenders could be affected: for they may well have ordered their lending arrangements and drafted their securities on the law as it is currently understood to be”. He thought that regarding a database as tangible property had possible implications for the law of theft, bringing “unjust and unanticipated consequences in other contexts”.
31. Lord Justice Floyd in *Datateam* considered the wider implications of the suggestion that an electronic database

⁹ at paragraph 39.

was a type of intangible property which, unlike a chose in action, was capable of possession and thus of being subject to a lien. He said that an electronic database consists of structured information:-

“Although information may give rise to intellectual property rights, such as database right and copyright, the law has been reluctant to treat information itself as property. When information is created and recorded there are sharp distinctions between the information itself, the physical medium on which the information is recorded and the rights to which the information gives rise. Whilst the physical medium and the rights are treated as property, the information itself has never been”.

32. In *Armstrong DLW GMBH v. Winnington Networks Ltd* [2012] EWHC 10 (Ch), the claimant was a trader in carbon emission allowances (EUAs) who brought a claim in proprietary restitution against the defendant, which had fraudulently obtained the EUAs from a third party. Stephen Morris QC applied Lord Wilberforce’s test to hold that EUAs were intangible property at common law. The EUA was “definable, as being the sum total of rights and entitlements conferred on the holder pursuant to the ETS [the EU’s Emissions Trading Scheme]. It is identifiable by third parties; it has a unique reference number. It is capable of assumption by third parties, as under the ETS, an EUA is transferable. It has permanence and stability, since it continues to exist in a registry account until it is transferred out either for submission or sale and is capable of subsisting from year to year”. He rejected the idea that an EUA was a chose in possession: “[w]hilst there has been debate in the context of electronic bills of lading and other electronic documents, the current state of the law has not developed to the point where something which exists in electronic form only is to be equated with a physical thing of which actual possession is possible”.
33. I should mention next Simon Thorley’s decision in *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 03 in the Singapore

International Commercial Court. He considered¹⁰ specifically whether cryptocurrencies were property for the purpose of being held in trust. He said: “[i]t is convenient to consider the second certainty, certainty of subject matter, first.¹¹ Quoine was prepared to assume that cryptocurrencies may be treated as property that may be held on trust. I consider that it was right to do so. Cryptocurrencies are not legal tender in the sense of being a regulated currency issued by a government but do have the fundamental characteristic of intangible property as being an identifiable thing of value”. After citing Lord Wilberforce in *National Provincial Bank v. Ainsworth supra*, he said that:-

“Cryptocurrencies meet all these requirements. Whilst there may be some academic debate as to the precise nature of the property right, in the light of the fact that Quoine does not seek to dispute that they may be treated as property in a generic sense, I need not consider the question further”.

34. Finally, in this context, in New Zealand in *Jonathan Dixon v. The Queen* [2015] NZSC 147, the Supreme Court held that digital files comprising video CCTV footage held on a computer system could be property for the purposes of the New Zealand Crime Act. They said¹² that they considered “that the fundamental characteristic of “property” is that it is something capable of being owned and transferred. In *New Era Printers and Publishers Ltd v Commissioner of Stamp Duties*, Stringer J held that anything which is owned by one person and can be sold and transferred to another is property within both the popular and legal meanings of the term”. The New Zealand Supreme Court acknowledged at paragraph 49 that the English Court of Appeal had taken a different view in *Datateam*.

¹⁰ At paragraph 142.

¹¹ The other two, of course, being certainty of words and of objects.

¹² at paragraph 38.

35. There are, as it seems to me, potential problems about identifying cryptoassets as property in English law. First, whilst an intangible asset can undoubtedly be property in English law, a cryptoasset does not generate a right against another person like a chose in action or money held in a bank account; the latter is, of course, generally a right, evidenced in writing, against a counter-party.¹³ Secondly, there are undoubtedly at least two types of cryptoassets: the fungible cryptoasset or ‘account model’ and the distinct ‘unspent transaction output’ or ‘UTXO’ model. The precise status of the cryptoasset may affect the ability to possess it and the remedies that can be employed in English law such as conversion or theft.
36. Generally, however, one can as Mr Thorley thought, see strong arguments for supposing that cryptoassets might be, in Lord Wilberforce’s words: “definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability”.¹⁴

Current developments

37. Against this background, the UK Government has established both a FinTech Delivery Panel and a LawTech Delivery Panel. I am a member of the LawTech Delivery Panel and chair of its UK Jurisdiction Taskforce (the “UKJT”), which was established with the objective of demonstrating that English law and UK jurisdiction can provide a state-of-the-art foundation for the development of DLT, smart contracts, artificial intelligence and associated technologies.

¹³ See J.G. Allen, ‘Property in Digital Coins’ (2019) 8(1) *European Journal of Property Law* 1 at 18.

¹⁴ Chapter 6 of David Fox and Sarah Green’s recently published book on *Cryptocurrencies in Public and Private Law* 2019 provides an illuminating discussion of *Cryptocurrencies in the Common Law of Property*”.

38. The UKJT will publish its public consultation in the next few days.¹⁵ It seeks views from lawyers and coders on the key issues of legal uncertainty as they affect the status of cryptoassets and the usage of smart legal contracts. The UKJT intends to publish a legal statement of the current position together with worked examples to explain the positions adopted, prepared by leading experts in the field. The UKJT's legal statement will also explain any suggestions for legislation that may be considered or recommended.¹⁶
39. The principal question in relation to cryptoassets, is under what circumstances, if any, would either a cryptoasset or a private key be recognised to be an object of property.
40. The ancillary questions relating to cryptoassets are:-
- (1) If a cryptoasset is capable of being recognised as property, is it a chose in possession, a chose in action or another form of personal property?
 - (2) Is a cryptoasset capable of being the object of a bailment?
 - (3) Under what circumstances would a specific unit, as opposed to a fungible cryptoasset, be considered identifiable, as distinct from other units of the same cryptoasset recorded to the same address?
 - (4) Can security validly be granted over a cryptoasset?
 - (5) If so, what forms of security may validly be granted over a cryptoasset?

¹⁵ The link will be: www.lawsociety.org.uk/policy-campaigns/articles/lawtech-delivery-panel/

¹⁶ The closing date for the consultation will be 14th June 2019, and it is hoped to publish the legal statement by late Summer 2019.

- (6) Can a cryptoasset be characterised as “property” for purposes of the Insolvency Act 1986?
 - (7) Under what circumstances, if any, would a cryptoasset be characterised as being (a) a documentary intangible or document of title; or (b) an “instrument” under the Bills of Exchange Act 1882; or (c) negotiable.¹⁷
 - (8) Can cryptoassets be characterised as “goods” under the Sale of Goods Act 1979?
 - (9) Is a distributed ledger recording cryptoassets capable of amounting to a “register” for the purposes of the Companies Act 2006 or the Uncertificated Securities Regulations 2001?
41. As to smart contracts, the principal question is whether a smart legal contract is capable of giving rise to binding legal obligations, enforceable in accordance with its terms.
42. The ancillary smart contracts questions are:-
- (1) How would an English court apply general principles of contractual interpretation to a smart legal contract written wholly or in part in computer code?
 - (2) Under what circumstances would an English court look beyond the mere outcome of the running of any computer code that is part of a smart legal contract in determining the agreement between the parties?
 - (3) Is a smart legal contract between anonymous or pseudo-anonymous parties capable of giving rise to binding legal obligations?

¹⁷ In the sense that a transferee may, by its mere transfer, acquire better title than that of its transferor.

- (4) Could a statutory signature requirement¹⁸ be met by affixing a private key?
 - (5) Could a statutory “in writing” requirement be met in the case of a smart legal contract composed partly or wholly of computer code?
43. In the light of the authorities that I have mentioned, the answer to some of these questions seem pretty clear. I am not going to go through them tonight providing the answers. For that you will need to await the publication of the legal statement by the UKJT hopefully by the late Summer. What I will say, however, is that even if the answers are obvious, I think it will be useful to state them definitively so that the industry can move forward with a more secure legal understanding.

What can be done once any legal impediments to the use of smart contracts have been identified?

44. There are, as it seems to me, two possible approaches to achieving the objective of identifying and removing any fundamental legal impediment to the use of smart contracts. One could, as I have said, try to create an entirely fresh statutory regime for the use (and perhaps the regulation) of cryptoassets and smart contracts. Secondly, one could also seek to remove by legislation only the most fundamental legal impediments, leaving the common law to do the rest.
45. In suggesting that the second of these alternatives may be preferable, I am being both pragmatic and adventurous. Pragmatic, because I would not expect an entirely fresh statutory regime to be capable of completion within any reasonably limited timescale. There would need to be a full Law Commission report and consultation, followed by an

¹⁸ For example, in the context of a disposition of an equitable interest (under s53(1)(c) Law of Property Act 1925 (LPA)) or of a legal assignment (under s136(1) LPA)?

extended Parliamentary process that would be lengthy in normal times, let alone in the current political circumstances. I am being adventurous, I think, because not all commentators agree that the common law is up to the task that I am suggesting for it. Lord Hodge SCJ has delivered two excellent lectures on this subject. In the most recent one entitled - *The Potential and Perils of Financial Technology: Can the Law adapt to cope?* - delivered in Edinburgh on 14th March 2019,¹⁹ he said that it was clear that it was not practicable to develop the common law to create a suitable legal regime for FinTech. He continued by saying that “[t]he judiciary does not have the institutional competence to do so. The changes in the law which are required are not interstitial law the making of which is the long-recognised task of judges; they will require inter-disciplinary policy-making and consultation which a court cannot perform when resolving individual disputes and developing case law”.

46. How then could the most fundamental legal impediments be removed by legislation, leaving the common law to do the rest? First, let me say that I would not wish to pre-empt the outcome of either the UKJT’s deliberations or any future work by the Law Commission in this area. Even less would I want to undertake any kind of statutory drafting in a lecture to lawyers and academics.
47. As it seems to me, however, two things need to be done: first to address the decisions in *OBG* and in *Datateam*, and secondly to decide what is the basic common feature of a cryptoasset. If these two things were achieved, Government could, if needs be, legislate to make a cryptoasset displaying the basic common feature in question into property under English law. All that would be left, I think, would be to ensure that a smart legal contract composed wholly or partly of computer code is capable of constituting a valid and binding contract under English law.

¹⁹ See <https://www.supremecourt.uk/docs/speech-190314.pdf>.

48. If it were then to become clear (a) that a right to value recorded on any kind of distributed ledger is indeed a species of property, and (b) that a smart legal contract composed wholly or partly of computer code is capable of constituting a legally binding contract under English law, I do not see why the other questions posed by the UKJT will not answer themselves. Moreover, I think that the ones that remain unclear can be solved by the parties or coders of new smart legal contracts writing some appropriate provisions into their code.
49. I will take these issues in turn.

Cryptoassets as property

50. As regards cryptoassets, the first point to make is that the market, nationally and internationally, is treating cryptoassets with various characteristics as economic assets. Of course, the law can decline to follow the market. But it does so rather at its peril. It seems to me that nothing about cryptoassets *per se* makes them more or less repugnant than, say, ordinary digital securities. The latter can be harmful, as the global financial crisis of 2008 demonstrated. But that is not affected by whether or not one recognises them as a legal species of property. It is a matter of how they are regulated. As I have already said, a clear distinction needs to be drawn between the concept of cryptoassets as property, on the one hand, and how they are to be regulated, on the other hand.
51. In general, the law should try to serve the needs of the society it serves. That should include the economy and financial system of that society. Divergences between the law and the market without a sound policy basis are probably best avoided.
52. In addition to the ‘account model’ and the ‘UTXO’ (unspent transaction output) model distinction, there is also a distinction between cryptoassets that represent external value and those that do not. The first kind represents rights against a counter-party or in respect of some tangible asset. The

second kind of cryptoasset does not represent value outside the ledger on which it is recorded. The first category is, I think easily assimilated as a chose in action. The second is not so easily identified as either a chose in action or a chose in possession. But it is notable that section 205(xx) of the Law of Property Act 1925 only provides that property “includes” choses in action and any interest in real or personal property. Thus there is no statutory reason why a new form of personal property could not be recognised in English law, provided, as I say, that it represented some form of value within Lord Wilberforce’s definition as being (a) definable, (b) identifiable by third parties, (c) capable in its nature of assumption by third parties, and (d) having some degree of permanence or stability.

53. Put in the way suggested by Moore-Bick LJ, we could identify possession of intangible property first by reconsidering the dichotomy between choses in possession and choses in action, and secondly, recognising a third category of intangible property, which would be susceptible of possession and amenable to the tort of conversion. That would have the benefit of accepting that anything which is owned by one person and can be sold and transferred to another person, was property within, as Stringer J put it in New Zealand, “both the popular and legal meanings of the term”.²⁰
54. In this entire discussion, I think it is important to leave intellectual property out of the debate. It would make the whole exercise far less likely to succeed if there were an attempt to recharacterize the well-known species of nationally and internationally statutorily recognised intellectual property rights.

²⁰ Financial Markets Law Committee, ‘Issues of Legal Uncertainty Arising in the Context of Virtual Currencies’ (July 2016), advocating virtual choses in possession: 8, file:///Z:/virtual_currencies.pdf.

55. Databases may also require separate statutory reconsideration. I do not, however, think that the *Datateam* case necessarily provides an insuperable obstacle to the recognition of cryptoassets as property under English law. Although both databases and cryptoassets consist of structured symbolic data, there are differences both in their technical composition and in their use that justify different legal treatment.

Smart legally enforceable contracts

56. I do not see the second issue as to the legally binding nature of a smart contract as so complicated. It might give the market confidence if the legislature were to say expressly that a contract composed wholly or partly of computer code were capable of constituting a legally binding contract under English law, but I am far from certain that it is necessary to do so.
57. The juxtaposition of code and prose in a smart contract also seems to me quite easily soluble. The parties will decide whether the code or the prose is to govern any given state of affairs within a contractual engagement. Jurisdiction and dispute resolution can and should be similarly treated. Coders, as I have said, often like to think that no dispute resolution is required. They are wrong, because human beings and corporate entities managed by human beings are likely to be entering into smart legal contracts. Such entities are capable of making representations and, therefore, misrepresentations, about the effect of a particular piece of computer code. Coders also need to realise that they themselves may quite genuinely make mistakes. We all can.
58. My conclusion is that one of our first objectives should be to devise a built-in species of dispute resolution specifically designed for smart contracts, so as to placate the coders and ensure a legal infrastructure for future contracting parties. I am thinking of an expedited dispute resolution process entrenched in the code itself, but allowing ultimately for

ADR or judicial resolution. Such a newly devised approach should not frighten the horses. It would be proportionate and thought through, but it would provide the legal certainty and investor protection that I regard as essential.

59. This debate has also, in my opinion, some potentially serious implications for the rule of law. Our society has the right to demand that technology and technologists are not exempt from or above the law. That is probably obvious to a lawyer, but it is in this generation by no means a given. In order to win the argument, lawyers and legal systems will need to adapt so as to ensure their future relevance to new forms of transaction.

Conclusions

60. I conclude by returning to the question in the title: how can English law boost the confidence of would-be parties to smart legal contracts? The answer is clear.
61. First, there needs to be an identification of whether cryptoassets are, or are not, property under English law. If they are not, a quick and simple legislative approach needs to be considered. Such an approach could, indeed should, recognise the realities of present day financial and economic markets. Having done so, it may be hoped that the flexibility and ingenuity of the common law would do the rest. It could surely, with that starting point, solve the issues that have been raised as to the difficulty of taking security over cryptoassets and entering into valid and binding smart legal contracts. It will, at that stage, be for the regulators to ensure that they have structures in place to protect against abuse.
62. As part of what I am suggesting, as I have said, lawyers and our legal system will need to put forward a persuasive case so that all market participants can see the economic benefits of their innovations being governed by a system of law. The main argument will be economics itself in the shape of investor confidence.

63. If all that is achieved as a matter of urgency, I would expect English law and UK dispute resolution to prove a popular foundation for the trillions of smart legal contracts that we may then expect to be entered into annually.
64. I hope this talk has provided a little food for thought.