This paper is in response to the consultation, dated 9 May 2019, by the UK Jurisdiction Taskforce of the LawTech Delivery Panel (the "Panel") in relation to cryptoassets, distributed ledger technology and smart contracts. It is sent on behalf of the Financial Law Committee (the "Committee") of the City of London Law Society ("CLLS"). Further information about the CLLS and the Committee appear at the end of this submission. It has been authored principally by Tolek Petch of Slaughter and May with input from a number of Committee members. Any comments or questions should be addressed to Tolek (tolek.petch@slaughterandmay.com) and to the chair of the Committee, Dorothy Livingston of Herbert Smith Freehills LLP (dorothy.livingston@hsf.com).

Preliminary observations

Our responses have been provided exclusively in a business to business, or business to professional investor, context. We recognise the need for protection of consumers in relation to investments in cryptoassets, and, in particular, ICOs. However, we believe consumer law, and financial regulation, as opposed to the law of property, are the appropriate tools. Accordingly nothing further is said in this response about consumer protection, nor about the appropriate approach to financial regulation in this area.

The primary question can only be answered by reference to the law of personal property as it has developed in England. We therefore set out in the annex to this paper a summary of this law and consider briefly the scope for further development. In the answers below we then apply our analysis to various types of crypto assets.

We consider that strictly speaking the answer to the primary question can only be given in the context of the ancillary questions, since whether a crypto asset constitutes property (as that term is understood in the context of the English law of personal property) depends on its characteristics and will therefore depend not only on the current state of English law, but also the characteristics of the particular asset. Moreover an "asset" may be property for some legal purposes (e.g. the criminal law or taxation) but not at common law, owing to the power of Parliament to modify the common law through the use of appropriate definitions. We would also stress that the fact that an "asset" has monetary value, and may be transferable, does not necessarily render it property for the purposes of the general English common law, as this is a legal and not an economic question. For example, the better view is that "assets" acquired for monetary consideration in the context of computer games where the terms of the contract or licence preclude the purchaser from acquiring any enforceable rights against the operator of the game, are not proprietary in nature.[1]

[1] P Pałka, Virtual Property: Towards a General Theory, D Phil Thesis, EUI, 2017, p. 57.

We would stress that the law of personal property developed in circumstances very different from those prevailing now, when computers, digital or crypto assets did not exist and the network of computers located in many jurisdictions which enable electronic commerce and products had not been developed, and that it is not therefore straightforward to apply concepts and legal doctrines developed at a much earlier period of the law's evolution to current conditions. Therefore whilst this paper makes statements as to our view and our conclusions, we acknowledge that this is currently an area where there is scope for different views and proposals.

Indeed we are aware that other submissions, including one by Clifford Chance LLP (the firm of a member of the Committee), may take different approaches to the issues, and/or suggest different ways forward. We believe, however, that the analytical approach in this paper is a valuable contribution to the work of ensuring English law operates well in relation to these developing areas of electronic commerce.[2]

We note that the consultation document does not question whether (certain) cryptoassets are or could constitute money, either generally or for particular purposes. We consider that this is a question that could have been explored, and would be happy to engage with the Panel separately on this. We note that in a number of cases the United States state and federal courts have held bitcoin and other cryptocurrencies to be money.[3]

Under what circumstances, if any, would the following be characterised as personal property:

A crypto asset

Conclusion on Intangible Property as a Separate Category of Property at Common Law

It can be seen in the overview provided in the Annex to this paper that the early cases and writers on the common law proceeded on the assumption that the only forms of personal property were choses in possession or choses in action. However, there is no trace of a taxonomy requiring such property to constitute either. Rather, the historical development of choses in action suggests that as new forms of property were developed from the sixteenth to nineteenth centuries they were recognised and placed in the category of choses in action. This can be seen with the recognition of rights that were not immediately enforceable by action, such as shares or intellectual property, as well as debts payable *in futuro*. The imposition of a rigid taxonomy seems to have begun with Blackstone, and is wholly absent from Fitzherbert's and Brook's abridgements, and was accepted in the nineteenth century as part of the great systematising of the common law required after the abolition of the forms of action.[4] As such it was logical to draw neat categories of tort and contract, as well as quasi-contract and quasi-tort to cover other cases. In this intellectual framework the approach taken

[2] Linklaters LLP have made no substantive comments to this paper.

[3] See e.g. *United States v. Ulbricht* 9 July 2014 (SDNY); *United States v. Faiella* 39 F. Supp. 544 (SDNY, 2014); *United States v. Murgio* 209 F. Supp. 3d 698 (SDNY, 2016); State *of Florida v. Espinoza* 3rd District Court of Appeal, 30 January 2019; *United States v. Stetkiw*, United States District Court for the Eastern District of Michigan, Southern Division, 1 February 2019. We understand the tax position to be different.

[4] J Hackney, More than a Trace of the Old Philosophy in P Birks (ed), The Classification of Obligations, 1997, OUP.

by Fry LJ. and Lord Blackburn in *Colonial Bank v. Whinney*[5] was logical. After all, there was no perceived need to recognise other categories of property, given the copious expansion of the category of choses in action.

Today's question: recognition of a third category of personal property?

That said, the question today is whether the courts can or should abandon the common law scheme that has been in place since the nineteenth century, or whether any alteration should be left to Parliament. Where it has been considered necessary to recognise other intangible property Parliament has enacted legislation such as the Theft Act 1968, the Fraud Act 2006, the Insolvency Act 1986 and the various EU provisions that underlie milk quotas, carbon trading allowances and other rights and licences. Ultimately, this involves a policy choice. In *OBG v Allan*[6] the House of Lords refused to extend the tort of conversion to choses in action and in *Your Response Ltd v Datateam Business Media Ltd*[7] the Court of Appeal maintained the boundaries of choses in possession (capable of being subject to a possessory lien) and choses in action, and doubted whether *Colonial Bank v. Whinney* could be changed except by Parliament. That Parliament may do so is apparent from the Patents Act 1977.

Parliament and the Supreme Court

Notwithstanding the view that the matter should be confined to Parliament, we consider that it would be open to the Supreme Court to recognise a third category of personal property. The question of policy is whether it should. *OBG* and *Your Response* suggests the higher judiciary are cautious of expanding the scope of proprietary rights. Arguments can be made for and against an extension of property rights in general. However, the problem with an extension of existing property rights is in defining what should be included in the new category, what the exceptions should be, and whether recognition of a new class of assets would confer a priority in insolvency law that would not otherwise exist.

The nature of cryptoassets

The Consultation Document states:

> "Broadly speaking, the term "cryptoasset" is often used to describe something which is, or of which at least a component is, represented by certain data (often, although not necessarily, recorded on a distributed ledger) which, by virtue of the design of a broader system, can only be updated upon the satisfaction of specific conditions. … [T]hese conditions usually involve: (i) public-private key cryptography to evidence the authenticity of the participant proposing the update; and (ii) a mechanism to ensure the same data has not been copied or updated (i.e. "spent") twice".

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[5] (1885) 30 Ch.D.261, 285; (1886) 11 App. Cas. 426, 440.

[6] [2008] 1 A.C. 1.

[7] [2015] Q.B. 41.

We understand the consultation therefore addresses:

(1) cryptoassets represented by data recorded on a blockchain or distributed ledger; and

(2) cryptoassets centrally recorded through a trusted intermediary.

It should be noted that the FCA has taken a different approach, stating in CP19/3:

> "There is no single agreed definition of cryptoassets, but generally, cryptoassets are a cryptographically secured digital representation of value or contractual rights that is powered by forms of DLT and can be stored, transferred or traded electronically. Examples of cryptoassets include Bitcoin and Litecoin (which we categorise as exchange tokens), as well as other types of tokens issued through the Initial Coin Offerings (ICOs) process (which will vary in type)".[8]

The FCA:

> "have categorised cryptoassets into three types of tokens;
>
> • Exchange tokens: these are not issued or backed by any central authority and are intended and designed to be used as a means of exchange. They are, usually, a decentralised tool for buying and selling goods and services without traditional intermediaries. ….
>
> • Security tokens: these are tokens with specific characteristics that mean they meet the definition of a Specified Investment like a share or a debt instrument … as set out in the RAO[9], and are within the perimeter.
>
> • Utility tokens: these tokens grant holders access to a current or prospective product or service but do not grant holders rights that are the same as those granted by Specified Investments".[10]

We would stress, as does the FCA, that cryptoassets "vary significantly in the rights they grant their owners, as well as their actual and potential uses".[11]

Need for asset-specific analysis

It follows that we are not in a position to express a generic view as to whether cryptoassets generally are or may be considered property. In each case it is necessary to consider the specific cryptoasset and the rights and liabilities that they purport to create. For convenience we will follow the terminology of exchange tokens, security tokens and utility tokens as a helpful way of subdividing this heterogeneous group of

[8] CP 19/3 para 2.4.

[9] Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 SI 2001/544 (as amended).

[10] Ibid., para 2.5.

[11] Ibid., para 2.6.

assets whilst bearing in mind the need always to consider the specific asset and its characteristics.

Exchange Tokens

We will take as examples of exchange tokens bitcoin and ether in order to provide a more specific answer to the question posed.

Neither bitcoin nor ether (or any other similar, exchange token of which we are aware) is a chose in possession. It is intangible and not capable of physical possession. We do not consider that the concept of possession, grounded in physical tangible property, should be changed. Such a development would be contrary to the development of English law since the foundation of the common law.

Nor are exchange tokens which are recorded on a blockchain or other distributed ledger a chose in action within the original understanding of the term. The reason is that they are not a claim on any person that can be enforced by action. This arises out of the decentralised nature of the blockchain or distributed ledger. No real parallel can be drawn with debts payable *in futuro*, shares or intellectual property as these are capable of giving rise to an action against an identifiable person in defined circumstances.

The first question is whether the concept of a chose in action should be extended to cover intangible property that is not enforceable under any circumstances by action. We consider that the law should not take that step. In its favour could be argued the gradual expansion of the concept beyond its beginnings as described by Holdsworth. However, we consider that it would be too radical a step to take to categorise as a chose in action something that by its nature is incapable of supporting an action. The effect of so doing would be to make the concept indefinite and incapable of principled development.

The second question is whether the common law should recognise exchange tokens as other intangible assets. This is the approach taken in respect of statutory schemes in respect of milk quotas, emissions allowances and might be taken with aircraft landing slots should the question arise. As has been explained above, this would require a departure from the taxonomy adopted by Blackstone as well as Fry LJ. and Lord Blackburn in *Colonial Bank v. Whinney*. As stated above, we consider that such a step is open to the Supreme Court. We would welcome such a development if confined to the specific case of exchange tokens. The class of assets that would constitute such property would be clearly defined and should not give rise to definitional problems. The impact on other areas of law would be negligible and no inconsistency with principles of English insolvency law would result, as no creditors would be disadvantaged. Such a development would be consistent with the reasonable expectations of the parties that persons acquiring exchange tokens have a proprietary interest in those tokens that can be exchanged for goods or services, or against other tokens, or flat currency[12] as well as our understanding the law of theft, fraud and money laundering. Perhaps more significant, the refusal by the courts to recognise exchange tokens as other intangible

[12] The judgment of the Tokyo District Court in the Mt. Gox case (English translation available at https://www.law.ox.ac.uk/sites/files/oxlaw/mtgox_judgment_final.pdf) caused consternation in holding that "bitcoin cannot be the object of ownership".

property would result in such assets not being recognised as property for the purposes of the common law amongst solvent counterparties whilst probably constituting property for the purposes of section 436 Insolvency Act 1986 (see question 1.2.6 below), as well as taxation[13]. Such a result seems to us anomalous.

If the Supreme Court were to hold in the near future that exchange tokens recorded on a blockchain or distributed ledger were not property, then we would favour targeted legislation to deem them personal property as is the case with patents.

Exchange Tokens Recorded with a Central Intermediary

Where title to the cryptoasset is recorded with a central intermediary then the question arises whether there would be any claim against that intermediary. If there is a contract, the contract will define the rights and obligations of the parties. If not, there may be a tortious remedy against the intermediary, for example, for breach of a duty of care. In cases where there is a remedy then the cryptoasset would constitute a chose in action under established principles of English law. If there was no such remedy, either because liability was validly excluded by contract, or no relationship of sufficient proximity exists, then without targeted legislation providing otherwise it would be contrary to the policy of the law to recognise a proprietary right.[14]

Security Tokens

These are debt or equity like instruments that, in the FCA's view, are specified investments under the RAO. As such they would seem likely to constitute choses in action unless (in the, perhaps, unlikely event that) the contractual or other framework precludes any remedy, with the result that they would be capable of constituting property under established English law. Where this is the intention of the parties we see no need for the law to intervene.

Utility Tokens

This class of asset is very heterogeneous. However, it is usually contractual in a broad sense. Thus, where utility tokens are issued pursuant to an ICO, the published whitepaper[15] may specify what rights (if any) investors may have in the goods or services to be provided. Our view is that where there is a contract, or an agreement embodied in a whitepaper giving rise to potential contractual or tortious claims, then such provisions should prevail. As such, tokens would either confer rights to goods or services (or not, as the case may be).

Other Cryptoassets

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[13] See e.g. https://www.gov.uk/government/publications/tax-on-cryptoassets/cryptoassets-for-individuals.

[14] As there would be no established contractual or tortious claim. We leave aside cases of contractual vitiating factors or possible restitutionary claims.

[15] A whitepaper is usually a document presented by a start-up informing and encouraging investors to participate in an ICO. The whitepaper contains more technical discussions and may include the consensus algorithm, how nodes will function and the token system. In the context of a utility token, the whitepaper will also set out what rights investors will (or will not) have in the project.

We do not purport to have exhausted the possible classes of cryptoassets, and consider that other assets should be classified in accordance with the analysis set out above. For example, Pałka has cogently argued that virtual property arising in the context of computer games where the documentation governing the games precludes the players from acquiring any legally enforceable interest in virtual property should be regarded as outside the sphere of the law of property.[16] We agree.

A private key

A private key is an alphanumeric string that enables a person to validate transactions. As such it gives access to cryptoassets but does not constitute them. There is therefore a clear conceptual distinction between a bitcoin and a private key that allows you to spend that bitcoin. A private key may be stored on a computer connected to the Internet, through a wallet, on a USB stick, on paper or in the head of the owner.

We consider that a private key constitutes confidential information and, as such, would be protected from unauthorised disclosure or use by the equitable action for breach of confidence. If the private key has been licensed to another (e.g. an exchange or third party) contractual and/or tortious remedies may arise from unauthorised use.

However, we do not consider that in the current state of English law confidential information is property. Although the authorities on this point are not wholly consistent, we agree that the prevailing view is represented by the dissenting judgment of Lord Upjohn in *Boardman v. Phipps*[17]:

> "In general, information is not property at all. It is normally open to all who have eyes to read and ears to hear. The true test is to determine in what circumstances the information has been acquired. If it has been acquired in such circumstances that it would be a breach of confidence to disclose it to another then courts of equity will restrain the recipient from communicating it to another. In such cases such confidential information is often and for many years has been described as the property of the donor, the books of authority are full of such references; knowledge of secret processes, "know-how," confidential information as to the prospects of a company or of someone's intention or the expected results of some horse race based on stable or other confidential information. But in the end the real truth is that it is not property in any normal sense but equity will restrain its transmission to another if in breach of some confidential relationship".

See also *North & South Trust v. Berkeley*[18], *Oxford v. Moss*[19], *Farah Constructions Pty Ltd v. Say-Dee Pty Ltd* [20] and *Hunt v. A* [21]. In *R v. Dixon* the Supreme Court of New

[16] Virtual Property: Towards a General Theory, DPhil Thesis, EUI, 2017.

[17] [1967] 2 A.C. 46, p. 127-128.

[18] [1971] 1 All ER 980.

[19] (1979) 68 Cr App R 183.

[20] [2007] HCA 22.

Zealand held that confidential information was property[22] in the context of a statutory definition that included "any thing in action, and any other right or interest". In our view, however, this does not represent the position under the law of England, and in any case of statutory construction it is the specific statutory definition that is relevant.

Sir John Mummery has written that there are three main reasons for not recognising property in information. The first is public policy. It would be contrary to the policy of the law to recognise greater property interests in the products of the human mind than Parliament has legislated for. Secondly, "[u]ncertainty and vagueness would place the public in an unacceptable position, on the one hand, as to who was the owner of what property, which could not be used without first obtaining permission from and making agreed payment to the owner, and, on the other hand, what was information available for use by all".[23] Thirdly, "there are available alternatives. Denial of property rights does not create a vacuum leaving the creator of the information exposed with no rights at all".[24]

More fundamentally, property law is concerned with rivalrous assets and (subject to the equitable duty of confidence) anyone is free to communicate information. "[P]roperty should be conceived as the right of exclusive use".[25]

While not all the considerations referred to by Lord Upjohn and Sir John Mummery are relevant in the context of a private key, the existence of alternative remedies is. These may be equitable, contractual or tortious depending on the matrix of facts. If a person voluntarily discloses his/her private key in a business context without sufficient safeguards as to the maintenance of confidentiality then it would seem that they have only themselves to blame. We see no reason to recognise such information as property. Other types of disclosure, such as by a trusted third party's carelessness or fraud already give rise to adequate remedies without requiring a proprietary right.

Ancillary questions

General Law

If a cryptoasset is capable of being property:

We have assumed in answering all the ancillary questions (save where specifically stated to the contrary) that the crypto assets referred to in the question are property at common law.

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[21] [2008] 1 NZLR 368.

[22] [2015] NZSC 147.

[23] J Mummery, Property in the Digital Age, p. 11 in W Barr (ed.), Modern Studies in Property Law, Vol. 8, Bloomsbury, 2015.

[24] Ibid.

[25] JE Penner, The Idea of Property law, OUP, 1997, p. 103.

is that as a *chose in possession*, a *chose in action* or another form of personal property?

Please see answer to question 1.1.1 above. We have argued that cryptoassets are not choses in possession. Certain cryptoassets may constitute choses in action. However, exchange tokens do not, in our view, constitute such, and we have stated our view that it is open to the Supreme Court to extend the notion of personal property to include such assets, failing which appropriate legislation may be needed.

How is title to that property capable of being transferred?

The question of transfer of title depends on the nature of the property, as well as any contractual or other restrictions on transfer. It follows that a generic response to this question is not possible and definitive conclusions would depend on the specific property concerned:

We follow the scheme adopted in our reply to question 1.1.1.

Exchange Tokens

We have concluded that bitcoin and ether are neither choses in possession nor choses in action. It follows that there is no recognised statutory or common law means to effect their transfer. That said, the computer protocols governing both Bitcoin and Ethereum (although different) make bitcoins and ether freely transferable (unless voluntarily placed in escrow). It is beyond the scope of this response to describe these protocols which are described in books on Bitcoin and Ethereum.[26]

We would propose that if exchange tokens are regarded as property then the common law should recognise the established protocols for transferring bitcoins and ether as valid, including private/public key cryptography, blockchain technology, and consensus either through proof of work or (in the future) proof of stake. We do not regard the differences referred to in the consultation paper between transaction ledger (UTXO) and account ledger as relevant for this purpose.

If legislation is enacted it should be neutral between exchange tokens using blockchain or other distributed ledger technology and between different means of establishing consensus.

Exchange Tokens Recorded with an Intermediary

Title to such assets will pass based on the consensus system of the system and will typically involve validation by the central intermediary.

Security Tokens

[26] See e.g. A Antonopoulos, Mastering Bitcoin, 2nd ed., O'Reilly, 2017; A Antonopoulos and G Wood, Mastering Ethereum, O'Reilly, 2018 and A Narayanan et al, Bitcoin and Cryptocurrency Technologies, Princeton, 2016.

The means of transfer depends on the type of security issued and it would be necessary to have regard to the particular token. If it constitutes a chose in action then the options would seem to be:

(1) statutory assignment under section 136 Law of Property Act 1925; or

(2) equitable assignment of a legal chose in action; or

(3) novation of the chose in action.

If the chose in action consists of an interest under a trust then any assignment must necessarily be of the equitable interest.

If the security token is a partnership interest or an interest in an unincorporated association, then the relevant rules applicable to such entities should be applied.

Utility Tokens

The analysis seems the same as for security tokens.

Is a cryptoasset capable of being the object of a bailment?

According to Palmer, The Law of Bailment[27] "The law of bailment is traditionally confined to tangible chattels. In its orthodox form it does not apply to intangible property such as a chose in action, though there are circumstances in which bailments of intangibles might be discerned by analogy if not formally".[28] Thus tangible property that embodies or represents intangibles may be bailed. Examples given by Palmer are negotiable and quasi-negotiable instruments, share certificates, valuable paper and tokens.[29] However, in each of these cases there is a physical document. In *Watford Electronics Ltd v. Sanderson CFL Ltd*[30] Judge Thornton Q.C. considered that there could be a bailment of "goods" constituted by computer software. This is inconsistent with previous and subsequent Court of Appeal authority, and we consider the case would not be followed on this point.

In our view a cryptoasset may not be the subject of a bailment as it is not a chattel. No good English authority exists for the proposition that a right similar to a cryptoasset constitutes goods or chattels, or that bailment should be extended beyond its traditional confines of chattels (including physical documents embodying or representing rights of action). *OBG* is authority that conversion does not lie in respect of intangible property. We consider that the reasons advanced by the House of Lords in that case apply, in the main, to bailment.

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27 3rd ed, Sweet & Maxwell, 2009.

28 Ibid., para 1-006.

29 Ibid., para 30-016.

30 [2000] 2 All E.R (Comm) 984 reversed [2001] EWCA Civ 317. See Court of Appeal authority referred to in the response to question 1.2.11 below.

However, this does not mean that a cryptoasset may not be held on trust or transferred to another person subject to a contract for redelivery, which, if breached would sound in damages. This is to say that a cryptoasset may be made subject to remedies founded on other areas of the law than bailment that may have similar practical consequences (although an outright transfer of title would expose the original owner to the insolvency of the transferee).

What factors would be relevant in determining whether English law governs the proprietary aspects of dealings in cryptoassets?

We have found this one of the most difficult questions posed by the consultation and different views have been expressed as to the appropriate choice of law rule. It is necessary to distinguish between activities or actions that take place off the blockchain or distributed ledger and actions within the system. The English choice of law rules for contract and tort are currently set out in the Rome I Regulation[31] and the Rome II Regulation[32]. The substance of these regulations are expected to be retained following Brexit.

It follows that where there is a contract (as understood under the European instruments) between the parties the rules set out in Rome I will apply while for claims in tort the Rome II Regulation will apply. The basic principle of Rome I is that of party autonomy, with default rules where there is no choice of law, and special rules on assignment. Applying those regulations may give rise to numerous difficulties in practice, although we do not understand the question as focusing on such issues.[33] In particular, Article 14 of the Rome I Regulation (which regulates the position on assignment) does not apply to the third party effects of assignment. The European Commission proposed a regulation addressing this topic which the UK Government decided not to opt-in to following consultation with interested parties.

According to the FMLC:

> "The distinction, however, between the contractual and proprietary consequences of an assignment is not clear, or is non-existent in some jurisdictions. This is evidenced by existing uncertainty as to the characterisation of issues under Article 14 of Rome I, and its predecessor in Article 12 of the Rome Convention.
>
> The difficulty of disentangling the proprietary and contractual aspects of an assignment may give rise to considerable legal uncertainty and unnecessary complexity. This has practical, not merely academic, consequences. The distinction may determine, for example, whether a debtor has discharged its debts or whether a debt forms part of an assignor's estate in insolvency. In addition, if the ownership of a debt and contractual entitlement to payment of a

[31] Regulation (EC) No 593/2008.

[32] Regulation (EC) No 864/2007.

[33] A Dickinson, Cryptocurencies and the Conflict of Laws in D Fox and S Green (ed.s) Cryptocurrencies in Public and Private Law, OUP, 2019.

> debt are treated separately, it is not clear whether the "mutuality" required for insolvency set-off would be satisfied.
>
> If the law of the assigned claim is applied to third-party consequences, as the FMLC proposes, these difficulties will not arise because there will be a uniform approach to both the contractual and proprietary effects of an assignment and the difficult characterisation question will be avoided".[34]

We agree with this analysis.

For Dickinson "the relationships between the participants in a cryptocurrency system are properly classified as 'contractual' and are potentially subject to national systems of contract law"[35]

The proprietary aspects, as opposed to the contractual and tortious consequences, are not addressed by either the Rome I or Rome II regulations. Dickinson argues that "[c]ryptocurrencies constitute a form of intangible property within the conflict of laws. In this connection, it is important to distinguish the proprietary aspect of a cryptocurrency from questions of title to any computer or other device on which information relating to a cryptocurrency (including, for example, a private key or a copy of the blockchain) is held".[36] (We agree with the reference to a device or computer, but consider a private key to be confidential information and not property).

Dickinson suggests that:

> "in cryptocurrency systems such as the Bitcoin and Ripple systems, the value of the participants' 'entitlements' does not depend on the existence of a legal right to be associated with units of the cryptocurrency but instead relies upon a legitimate expectation, founded on the technical features of the system, that the consensus rules which underpin the system will be applied and will not be altered fundamentally such as to deprive each participant of the association to particular units within the system and the power to deal with those units. This is a factual and not a legal benefit, but should, nevertheless, be capable of being characterized as a species of intangible property in the same way as (for example) goodwill in a business.
>
> Indeed, goodwill provides a potentially valuable analogy for treating such legitimate expectations as a species of intangible property in the English conflict of laws insofar as case law and commentary support the view that the goodwill of a business constitutes a separate species of intangible property located, for the purposes of applying the English common law's *lex situs* rule, in the country where the premises to which the goodwill is attached are situated".[37]

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[34] Letter from the FMLC to the European Commission dated 30 July 2018.

[35] Dickinson, *supra*, para 5.72.

[36] Ibid., para 5.97.

[37] Ibid., paras 5.107-5.108.

Dickinson concludes:

> "Rather than assigning a fictional *situs*, the choice of law rule can be more straightforwardly, and appropriately, expressed in terms of the proprietary effects outside the cryptocurrency system of a transaction relating to cryptocurrency shall in general be governed by the law of the country where the participant resides or carries on business at the relevant time or, if the participant resides or carries on business in more than one place at that time, by the law of the place of residence or business of the participant with which the participation that is the object of the transaction is most closely connected".[38]

A solution based on the participant's location was previously rejected by the FMLC in Distributed Ledger Technology and Governing Law: Issues of Legal Uncertainty:

> "A major disadvantage of this rule, moreover, is that it will often give no clear answer to questions of entitlement in circumstances of joint transferors, chains of assignments, or a change in habitual residence by the transferor. It also artificially splits up the distributed ledger record.
>
> A very similar approach would look to the location of the private user key for the DLT system, i.e. the key by which a participant in the system controls the digital asset. This location would presumptively be the primary residence, centre of main interests or, possibly, domicile, of the user key-holder. It may, however, be difficult to objectively determine the location of the private user key, particularly as one key may be made up of several components held across multiple jurisdictions.
>
> Furthermore, … establishing the location of the relevant person in the case of both of these solutions will necessitate complex legal opinions (and cost).[39]

We agree with these criticisms.

In its analysis the FMLC concluded:

> "that—subject to a special rule in respect of tokens referencing an immovable asset—elective situs should be the first port of call, in combination with regulatory constraints on the election, where necessary".[40]

In practical terms this means:

> "elective *situs* should be the starting point for any analysis of a conflicts of law approach to virtual tokens. This solution meets the requirements of being objective and easily ascertainable by the parties themselves and provides the

[38] Ibid., para 5.109.

[39] Distributed Ledger Technology and Governing Law: Issues of Legal Uncertainty, paras 6.22-6.24.

[40] Ibid, para 8.1.

> clearest route for establishing the governing law within the context of this new technology".[41]

And:

> "In situations where a truly elective *situs* or governing law (in the sense of a free choice) cannot readily or sensibly be implemented, the PROPA approach [Place of the Relevant Operating Authority/Administrator] or the location of the user test might be thought to reflect a more desirable result. The desired outcome, however, can [sic] usually be realised in such cases by requiring regulated entities to agree upon a particular choice of law in their contracts—that is provided that the issuer (in cases where the system constitutes the assets), the system administrator and the participants are regulated under new or existing legislation. In other words, the correct substantive result can still be achieved by means of election, but the election itself may be subject to regulatory constraints".[42]

Analysis

The first question is what law should govern relations between participants in the DLT system or blockchain. As has been seen, Dickinson regards this as a contractual issue subject to the Rome I Regulation, while his proposal on proprietary issues only applies to persons outside the system. The FMLC takes a different approach.

Proprietary issues generally arise where there are multiple assignments or transfers of the same asset or in determining the hierarchy of claims in an insolvency. They may also arise in situations involving attachments and governmental acts affecting property.

Security Tokens and Utility Tokens

Whether a contractual approach to intra-system transfers is appropriate would seem to depend on the nature of the cryptocurrency system. For example, as has been mentioned above, a contractual framework naturally fits a security token or a utility token. Such tokens are created voluntarily pursuant to a broader framework that for the purposes of the conflict of laws should be seen as contractual in nature. We consider for the reasons given by the FMLC that have been cited above that the law governing the asset (i.e. the law determined in accordance with Article 3 or 4 of the Rome 1 Regulation) should apply to the proprietary aspects of an "assignment". We have inserted assignment in inserted commas as what actually happens in the case of a security token or a utility token that is spent or transferred is the destruction of part (or under the UTXO model all) of the chose in action represented by the claim.[43] Where there is a central intermediary the characteristic performance is likely to be that of the central intermediary which will normally have an ascertained and not arbitrary *situs*.

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[41] Ibid., para 7.3.

[42] Ibid, para 7.5.

[43] *R v. Preddy* [1996] A.C. 815.

Our answer is premised on the assumption that it is possible to identify a relevant governing law under the Rome Convention. If this is not the case (and see below on exchange tokens) then some members of the committee would favour for the present a *lex situs approach* depending on the nature of the token whilst others members favour the elective *situs* proposed by the FMLC. These will be considered in turn.

If a *lex situs* approach were taken then the analysis could be as follows:

(1) Tokens assimilable to debts should be subject to the *lex situs* applicable to debt instruments. The High Court recently provided principled guidance in *Hardy Exploration & Production (India) Inc v. Government of India*[44].

(2) Tokens assimilable to equity investments or partnerships (such as decentralised autonomous organizations) should be subject to the relevant *situs* rules applicable to such instruments.

(3) Other instruments will depend on their characteristics and cannot be described in general terms.

In an elective *situs* proposal then the FMLC's analysis could be followed. This has the advantage of being objective and easily ascertainable by the parties themselves. It is also broadly consist with the approach taken by Hague Convention on the law applicable to certain rights in respect of securities held with an intermediary.

The problem with Dickinson's analysis is, first, that goodwill is not really an appropriate analogy, and that the choice of the place of habitual residence artificially splits up the governing law and could necessitate complex investigations. Dickinson downplays these concerns[45], but we consider that they have real substance.

Exchange Tokens

For exchange tokens the situation is much less clear or obvious. Dickinson treats the matter as contractual and applies Article 4 of the Rome I Regulation to conclude that the characteristic performance under Article 4(2) in the case of Bitcoin is that of cryptocurrency miners[46], while in the case of Ripple it is that of Ripple Labs. The result is that for intra-system transactions, Chinese law[47] would govern Bitcoin whilst the law of California would apply to Ripple. For Ethereum, on this analysis the characteristic performance would be that of miners until proof of stake is implemented.

Absent an international convention or some other international solution a contractual analysis should only apply to those transactions that are treated for the purposes of the Rome I regulation as contractual (i.e. voluntary). In which case we would favour a similar approach to "assignments" as set out above for security and exchange tokens.

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[44] [2019] 2 W.L.R. 159.

[45] Dickinson, *supra*, paras 5.112-5.114.

[46] Dickinson, *supra*, para 5.58.

[47] As the majority of bitcoin mining is currently located in China.

In other cases (and assuming that exchange tokens are not categorised as money) an analysis based either on the effective *situs* or *elective situs* should be applied. Only where the claim is effectively enforceable in England should English law apply in this case.

We would stress that this is an interim solution and would welcome an initiative by the Hague Conference on Private International Law (or some other appropriate body) to agree choice of law rules for crypto-assets.

Security

Can security validly be granted over a cryptoasset and, if so, how?

We see no reason why security cannot be granted over a cryptoasset though there may be some practical difficulties. The full range of legal and equitable interests capable of being granted over a chose in action should be capable of being granted over cryptoassets within that category. However, those security interests that are restricted to tangible physical property will be excluded e.g. liens and pledges.

It follows that the following security interests may be created over a chose in action:

(1) Legal mortgage. This involves an outright transfer of the chose to the security taker subject to the mortgagor's equity of redemption[48]. In practice, this can only be achieved by an outright assignment that complies with the formal requirements of section 136 Law of Property Act 1925.

(2) Equitable mortgage. An equitable mortgage can arise where:

The parties intended to create a legal mortgage but failed to do so;

There is an agreement between mortgagor and mortgagee that certain property shall be transferred to the mortgagee; or

The property can only be transferred in equity.

A legal mortgage can only cover existing property held by the mortgagor, although a mortgage of after acquired property is good in equity[49]. An equitable mortgage, however, requires an agreement to transfer the property.

(3) Charge. A charge depends on an agreement between creditor and debtor to appropriate a particular asset for the discharge of the debt. In *Carreras Rothmans Ltd v Freeman Mathews Treasure Ltd*[50] Peter Gibson J. said that:

[48] *Coggs v. Barnard* (1703) 2 Ld Raym 909.

[49] *Holroyd v. Marshall* (1862) 10 H.L.C 191, 219.

[50] [1985] Ch. 207.

> "a charge is created by an appropriation of specific property to the discharge of some debt or other obligation without there being any change in ownership either at law or in equity, and it confers on the chargee rights to apply to the court for an order for sale or for the appointment of a receiver, but no right to foreclosure (so as to make the property his own) or take possession".[51]

A company, but not an individual, may create a floating charge.

We see no reason why all of the above security interests may not be created over a cryptoasset that is a chose in action. Exchange tokens should also be capable of being subject to a mortgage or charge provided that the requisite transfer or appropriation is made (i.e. they should be assimilated to a chose in action for the purposes of creating security rights). For example, an agreement to transfer the bitcoins held in a specified wallet could give rise to an equitable mortgage while an appropriation of bitcoins in a wallet or at an exchange could give rise to a charge. Where there is no specific appropriation no charge may be created. What "appropriation" means in this context remains to be worked out as if the charger is free to deal in bitcoins in the ordinary course of business any charge could only be floating. There are also potential issues of enforceability (although in all cases where the charger retains (some) control over the charged asset the secured creditor is at risk of losing his security interest).

If so, what forms of security may validly be granted over a cryptoasset?

All forms of security interest except a lien or pledge may be granted over a cryptoasset that is a chose in action or otherwise recognised as property under English law.

Insolvency

Can a cryptoasset be characterised as "property" for the purposes of the Insolvency Act 1986?

We understand this question as relating to the definition of "property" in section 436 Insolvency Act 1986. This states:

> ""property" includes money, goods, things in action, land and every description of property wherever situated and also obligations and every description of interest, whether present or future or vested or contingent, arising out of, or incidental to, property".

The meaning of section 436 has been considered in a number of cases, not all of which will be considered here. *Re Celtic Extraction Ltd*[52] held a waste management licence to be property and the same was held in respect of a milk quota in *Swift v. Dairywise Farms Ltd*[53]. According to Sealy & Milman, Annotated Guide to the Insolvency

[51] Ibid., p. 227.

[52] [2001] Ch. 475.

[53] [2000] 1 W.L.R. 1177; affirmed [2001] 1 B.C.L.C. 672.

Legislation[54] "an expansive view has been taken as to what could be regarded as "property"". Rights to sue, and appeal rights, may constitute property under the Insolvency Act 1986, although such rights may be unassignable under the prohibitions on maintenance and champerty. It is therefore clear from the case law that the definition of property under section 436 is broader than at common law.

Is a cryptoasset property for these purposes? If the cryptoasset is a chose in action then it is clearly covered by the statutory definition. However, even if it is not property for the purposes of the common law, then to take the "asset" outside of the statutory definition would seem illogical in most cases when considering the classes of "asset" that have been held to be property. A bitcoin is an intangible asset which we consider could fall within "every description of property" even if not in possession or action as other intangible property. We do not consider that it is relevant that there is no statutory scheme, and that a bitcoin is purely a private exchange token. Of course, if the "asset" confers no legal rights or obligations, such as virtual property in most computer games, and some utility tokens, then a different conclusion may follow from the characteristics of the intangible.

Transferability and Negotiability

Under what circumstances, if any, would a cryptoasset be characterised as:

a documentary intangible;

A "documentary intangible" is defined by Bridge in Personal Property Law[55] as "instruments or documents that are so much identified with the obligation embodied in them that the appropriate way to perform the transfer of the obligation is through the medium of the document. The abstract intangible right acquires such a degree of concretized expression that it takes on some of the characteristics of a chattel. The document recording the right is itself a tangible thing and thus a chattel, and the right is thoroughly fused with the document".[56] Bridge et al, The Law of Personal Property[57] records "a document of this type is distinct from one that merely records the existence of intangible property, such as an acknowledgment of indebtedness or a share certificate. All documentary intangibles are therefore documents of title, they are transferable, and in some cases, negotiable, instruments, with the exact character of the document dependent on its subject matter".[58]

[54] Vol. 1, 21st ed., Sweet & Maxwell, 2018.

[55] 4th ed., 2015, OUP.

[56] Ibid, p. 19.

[57] 2nd ed., Sweet & Maxwell, 2018.

[58] Ibid, para 5-001.

Based on these definitions it is difficult to see how a cryptoasset could ever be a documentary intangible as it is not a physical document and we are unaware of any cryptoasset that is capable of possession.

a document of title

It is unclear how a cryptoasset could ever be a document as opposed to an asset or property. It is not expressed in writing. Nor is it evidence of anything other than whatever it purports to be.

Negotiability

A document may be negotiable either by statute or by mercantile usage.[59] Thus, the Bills of Exchange Act 1882 makes promissory notes and bills of exchange negotiable. Equally, the *lex mercatoria*, as received by the common law, has recognised other instruments as being negotiable. In considering this question we will first examine the Bills of Exchange Act and then the *lex mercatoria*.

Bills of Exchange Act 1882

A bill of exchange is defined in section 3(1) as follows:

> "A bill of exchange is an unconditional order in writing, addressed by one person to another, signed by the person giving it, requiring the person to whom it is addressed to pay on demand or at a fixed or determinable future time a sum certain in money to or to the order of a specified person, or to bearer".

Section 3(2) provides:

> "An instrument which does not comply with these conditions, or which orders any act to be done in addition to the payment of money, is not a bill of exchange".

An exchange token or a utility token is not a bill of exchange as it does not require the person to whom it is addressed (if any) to pay a sum certain of money. It seems unlikely that a security token would constitute a bill of exchange for the same reasons.

There are two further issues under the definition in section 3(1): is a cryptoasset "in writing" and is it "signed" by the person giving it?

Gleeson (ed) in Chalmers and Guest on Bills of Exchange and Cheques[60] states that writing includes print, and by virtue of the Interpretation Act 1978, Schedule 1:

> ""Writing" includes typing, printing, lithography, photography and other modes of representing or reproducing words in a visible form, and expressions referring to writing are construed accordingly".

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[59] *Dixon v. Bovill* (1856) 3 Macq HL 1, 16 per Lord Cranworth LC.

[60] 18th ed., Sweet & Maxwell, 2017.

In Gleeson' s view "[i]t is at least arguable that a bill could be issued by electronic means, provided that it could be reproduced in visible form, e.g. printed out or seen on a video-display unit".[61] The problem with applying this to a cryptoasset is that while the token may be evidenced in a form that could be printed out, the asset is not of such a nature as to be visible on a computer screen or printed. We therefore consider that the better view is that a cryptoasset cannot be a bill of exchange. A further problem is posed by the requirement for a signature[62], although this could be addressed by a statutory instrument made under the Electronic Communications Act 2000. Section 8(1) of that Act provides:

> "the appropriate Minister may by order made by statutory instrument modify the provisions of–
>
> (a) any enactment or subordinate legislation, or
>
> (b) any scheme, licence, authorisation or approval issued, granted or given by or under any enactment or subordinate legislation,
>
> in such manner as he may think fit for the purpose of authorising or facilitating the use of electronic communications or electronic storage (instead of other forms of communication or storage) for any purpose mentioned in subsection (2)".

The making of orders under section 8 is outside the scope of this consultation.

Elliot et al. in Byles on Bills of Exchange and Cheques[63] treat a bill of exchange[64] as a chattel.[65] If correct then a cryptoasset could not be a bill of exchange as it is not capable of possession and cannot be converted, whereas bills can be the subject of conversion.[66]

The second class of negotiable instrument under the Bills of Exchange Act 1882 is a promissory note. This is defined in section 83(1) and (2):

> "(1) A promissory note is an unconditional promise in writing made by one person to another signed by the maker, engaging to pay, on demand or at a fixed or determinable future time, a sum certain in money, to, or to the order of, a specified person or to bearer.
>
> (2) An instrument in the form of a note payable to maker's order is not a note within the meaning of this section unless and until it is indorsed by the maker".

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[61] Ibid., para 2-011.

[62] Ibid. See, however, the cases cited under question 2.2.4 on the Statute of Frauds 1677.

[63] 29th ed., Sweet & Maxwell, 2013.

[64] This is likely only to be relevant to security tokens.

[65] Ibid., para 1-012.

[66] *Lloyds Bank Ltd v. Chartered Bank of India, Australia and Chin* [1929] 1 K.B. 40.

Section 84 adds "A promissory note is inchoate and incomplete until delivery thereof to the payee or bearer". Delivery means the transfer of possession, actual or constructive from one person to another (section 2).

As a cryptoasset is incapable of possession, it is likewise incapable of delivery under the Bills of Exchange Act 1882. It is unclear if section 8(2)(b) Electronic Communications Act 2000 applies to a requirement to make delivery by transfer of possession, but even if it does, we are not aware of any cryptoassets that would meet the statutory definition of a promissory note in section 83 or of how endorsement could be made to a cryptoasset. We conclude that existing cryptoassets are not promissory notes.

Lex Mercatoria

There remains the *lex mercatoria*. This raises the question whether the *lex mercatoria* is a static concept. However, after some initial doubt, it has been settled that the classes of negotiable instruments are not closed:

> "the law merchant is not a closed book, nor is it fixed or stereotyped. This was explained by Cockburn C.J. in *Goodwin v. Robarts*. Practices of business men change, and courts of law in giving effect to the dealings of the parties will assume that they have dealt with one another on the footing of any relevant custom or usage prevailing at the time in the particular trade or class of transaction. Hence evidence is admitted of custom and usage, which when juridically ascertained and established become incorporated in the common law. Thus, in the present case, there is an alternative claim based on custom and usage"[67].

See also *Goodwin v. Robarts*[68] and *Edelstein v. Schuler & Co.*[69]

We turn to consider what is the characteristic of a negotiable instrument. In *Crouch v. The Credit Foncier of England Ltd*[70] Blackburn J. approved the following definition from Smith's Leading Cases:

> "It may therefore be laid down as a safe rule that where an instrument is by the custom of trade transferable, like cash, by delivery, and is also capable of being sued upon by the person holding it pro tempore, then it is entitled to the name of a negotiable instrument, and the property in it passes to a bonâ fide transferee for value, though the transfer may not have taken place in market overt. But that if either of the above requisites be wanting, i.e., if it be either not accustomably transferable, or, though it be accustomably transferable, yet, if its nature be such as to render it incapable of being put in suit by the party holding it pro tempore, it is not a negotiable instrument, nor will delivery of it pass the

[67] *Bank of Baroda v. Punjab National Bank Ltd* [1944] 1 A.C. 176, 183 per Lord Wright.

[68] (1874-75) L.R. 10 Ex. 337, 340.

[69] [1902] 2 K.B. 144.

[70] (1872-73) L.R. 8 Q.B. 374.

> property of it to a vendee, however bonâ fide, if the transferor himself have not a good title to it, and the transfer be made out of market overt.[71]

Smith and Leslie, The Law of Assignment[72] note four important characteristics of a negotiable instrument:

(1) Title passes on delivery (or sometimes endorsement and delivery);

(2) The holder of the document may enforce the right to payment embodied in the document in his *own* name;

(3) Notice of transfer of the document and of the rights embodied in it need not be given to the person liable; and

(4) A bona fide holder takes free from any defect in title of predecessors.

Case law has recognised the following as negotiable by the *lex mercatoria*: bearer bonds and shares, bearer depository receipts, probably certificates of deposit, and bills of lading.[73]

There are two potential obstacles to the recognition of cryptoassets as negotiable: (1) they are not a physical document or a documentary intangible capable of passing by transfer of possession and (2) an absence of factual evidence that the financial markets treat cryptoassets as negotiable.

The first is a legal question: can an asset that exists only in electronic form acquire the characteristics of a negotiable instrument, or is a physical document required? Case law provides no answer to this question, although all existing examples of negotiable instruments require a "writing". Gleeson has argued that this could, in theory, include electronic bills of exchange and promissory notes provided the bill or note could be printed or viewed on a screen. However, this would not be sufficient for cryptoassets. Moreover, the editors of Byles take the view that bills of exchange are chattels capable of conversion which would preclude recognition of cryptoassets as negotiable instruments. Historically, the recognition of negotiability seems to have followed commercial expedience as the negotiability developed in relation to money was applied to other instruments.[74]

It seems right to approach the matter from first principles. A negotiable instrument is an instrument where the right that it confers (e.g. payment) is assimilated to the instrument in which it is embodied. It is for this reason that it is treated as a chattel and not a chose in action for the purposes of the law of conversion. If the negotiable instrument were a

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[71] Ibid. pp 381-2 citing the notes to Miller v. Race in the 1837 edition at p. 259. Sale in market overt has been abolished.

[72] 3rd ed., OUP, 2018.

[73] Smith and Leslie, *supra*, paras 9.34-9.42.

[74] *Banks v. Whetston* (1596) Cro Eliz 457; *Miller v. Race* (1769) 1 Burr 452. For the historical development see Holden, The History of Negotiable instruments in English Law, Athlone Press, 1955.

simple chose in action then it would, prior to the reforms of the nineteenth century, have been unassignable at common law and only assignable in equity in limited circumstances. For this reason such a chose in action cannot be negotiable. A chose in possession may be negotiable, however, where it is treated as such by statute or the custom of merchants be negotiable. And because it is treated as embodied in the document or instrument, a negotiable instrument is treated as a chose in possession subject to the tort of conversion. We conclude that based on existing English law a cryptoasset cannot be negotiable as it is not even partly a chose in possession.

The second question is whether there is a sufficient custom amongst merchants to hold that cryptoassets have acquired the characteristics of negotiability. This, obviously, is not a question that can be answered in general terms and would need to be considered on an instrument by instrument basis. We are not aware of sufficient evidence of fact that would substantiate the view that any cryptoasset is currently treated by merchants as negotiable. On the contrary there is very little factual evidence of use of cryptoassets or cryptocurrencies by merchants or banks in England. We conclude that statute would be required to recognise negotiability of cryptoassets. If such legislation were considered then it would be necessary for Parliament to consider which classes of cryptoassets should benefit from the exception to the *nemo dat* rule, and in which circumstances. We consider that any such classification be confined to exchange tokens and security tokens that are analogous to bearer debt instruments.

Should cryptocurrencies acquire the status of money then it would, however, be logical to attribute negotiability to them in the same way as applies to notes and coins. However, where a cryptocurrency is not used as money, but as an investment, then the policy behind this attribution would not apply.

an "instrument" under the Bills of Exchange Act 1882?

We have already considered whether a cryptoasset can constitute a bill of exchange or a promissory note and concluded that it is incapable of doing so. The only other instrument addressed by the Bills of Exchange Act 1882 is a cheque. As we are unaware of any cryptoassets that would be have features similar to a cheque we consider this question moot.

Goods

1.2.11 Can cryptoassets be characterised as "goods" under the Sale of Goods Act 1979?

Section 2(1) Sale of Goods Act 1979 provides "A contract of sale of goods is a contract by which the seller transfers or agrees to transfer the property in goods to the buyer for a money consideration, called the price".

Section 61(1) provides:

> ""goods" includes all personal chattels other than things in action and money, and in Scotland all corporeal moveables except money; and in particular "goods" includes emblements, industrial growing crops, and things attached to

> or forming part of the land which are agreed to be severed before sale or under the contract of sale and includes an undivided share in goods".

The definition of "goods" includes personal chattels other than things in action or money. It follows that if a cryptoasset is a chose in action (or money) it cannot be goods under the Sale of Goods Act. Bridge (ed), Benjamin's Sale of Goods[75] states that:

> "The statutory exclusion of things (or choses) in action means that shares and other securities, debts, bills of exchange and other negotiable instruments, bills of lading, insurance policies, patents, copyrights and trade market, lottery tickets, and other incorporeal property are not capable of being goods for the purposes of the Act".[76]

With the exception of patents (which are stated by statute not to be a chose in action) the above list of items are choses in action, albeit they may, in certain cases, take on the characteristics of choses in possession. This is the case with documentary intangibles where the right of action is treated by the common law as embodied in the document with the result that (unlike other choses in action) it was transferable, may be converted, subject to set-off and can constitute a negotiable instrument.

The most helpful analogy that we have found is the treatment of computer software as intangible property. Here a distinction has been drawn between software sold on its own and software sold incorporated within a tangible object (such as a disc or computer hardware). In *St Albans City and District Council v. International Computers Ltd*[77] Glidewell LJ. observed:

> "In both the Sale of Goods Act 1979 section 61 and the Supply of Goods and Services Act 1982 section 18 the definition of "goods" "includes all personal chattels other than things in action and money . . ." Clearly a disc is within this definition. Equally clearly, a program, of itself, is not.
>
> If a disc carrying a program is transferred, by way of sale or hire, and the program is in some way defective, so that it will not instruct or enable the computer to achieve the intended purpose, is this a defect in the disc? Put more precisely, would the seller or hirer of the disc be in breach of the terms as to quality and fitness for purpose implied by section 14 of the Sale of Goods Act and section 9 of the Act of 1982? Mr Dehn, for I.C.L., argues that they would not. He submits that the defective program in my example would be distinct from the tangible disc, and thus that the "goods"—the disc—would not be defective".[78]

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[75] 10th ed., Sweet & Maxwell, 2017.

[76] Ibid., para 1-080.

[77] [1996] 4 All ER 481.

[78] Ibid., p. 493.

In *The Software Incubator Ltd. v. Computer Associates UK Ltd*[79] Gloster LJ. said:

> "The distinction between data and the physical medium on which it may be contained was followed and applied by this court in *Your Response Ltd v Datateam Business Media Ltd* [2015] QB 41, paras 18–20, 42 where it was held that a database stored electronically gave rise to intangible property which does not amount to "goods" and, therefore, could not be the subject of a common law possessory lien. I am persuaded by Mr Dhillon's submission that this case is relevant because legally an analogy can be drawn between an electronic database and the Software.
>
> The Scottish authority on this point I found much more helpful and persuasive than Gailey's case. In *Beta Computers (Europe) Ltd v Adobe Systems (Europe) Ltd* 1996 SLT 604, the Outer House of the Court of Session recognised the distinction between the intangible information in software and any physical medium on which it is held. It expressed the view, at pp 608–609, that the supply of software without tangible media was not to be regarded as a "sale of goods".
>
> Moving further afield to Australia, the New South Wales Supreme Court has held that software delivered by means of an internet download was not "goods" for the purposes of the Australian Sale of Goods Act 1923 (which is in materially similar terms to the English Sale of Goods Act 1979), because the software was supplied in an intangible form and "goods" are limited to tangible items: see *Gammasonics Institute for Medical Research Pty Ltd v Comrad Medical Systems Pty Ltd* (2010) 77 NSWLR 479at [1]–[3], [5]–[6], [12]–[15], [24], [47]. I find force in Mr Dhillon's submission that, while the judge in the *Gammasonics* case had sympathy with the arguments of the commentators as to the perceived injustices to consumers, she nevertheless upheld the ruling that was the subject of the appeal that software is not "goods" for the purpose of the legislation. This conclusion supports the appellant's construction of regulation 2(1) that a sale of "goods" requires tangible property."[80]

The observations of Glidewell LJ. and Gloster LJ. strongly indicate that for the purposes of the Sale of Goods Act 1979 property must be tangible to constitute "goods". If this is correct (and in neither case was the analysis part of the *ratio decidendi*) then it necessarily follows that cryptoassets are not goods as they are not choses in possession.[81]

Register

In what circumstances is a distributed ledger capable of amounting to a register for the purposes of evidencing, constituting and transferring title to assets?

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[79] [2019] Bus LR 522. An appeal to the Supreme Court is pending.

[80] Ibid. p. 533.

[81] See also *Thunder Air Limited v Hilmarsson* [2008] EWHC 355 (Ch) (no conversion of electronic information).

A distributed ledger is capable of recording information relating to cryptoassets, although the way that it does so differs between the unspent transaction output (UTXO) model and the account-based model. Conceivably, other models may exist.

We are not aware of any common law definition of a "register". There are, of course, various statutory registers in respect of specific classes of assets such as land, land charges, intellectual property rights, company charges and certain other property rights. Suffice it to say that there is no statutory obligation to register rights in cryptoassets.

We see no reason why a distributed ledger-based register could not record title to assets. This is already possible with colored coins on Bitcoin.[82] If it were desired to use DLT for other purposes, perhaps without use of a native cryptocurrency, such as land, then it would be necessary to establish an appropriate framework, which would need to be in our view statutory. Where personal data were involved, the framework would need to ensure compliance with the GDPR. GDPR compliance with DLT-based systems is challenging, but this is beyond the scope of this response.

We would give as an example of legislation enabling the transfer and recording in electronic asset, the Uncertificated Securities Regulations 2001 (as amended) which enable the registration of uncertificated shares and dematerialised money-market instruments through the records of the CREST System.

Enforceability of smart contracts

Principal question

In what circumstances is a smart contract capable of giving rise to binding legal obligations, enforceable in accordance with its terms (a "smart legal contract")?

There is considerable uncertainty in the literature as to what a smart contract is. However, we do not wish to overburden this response by analysing the various ways in which scholars and computer specialists understand the term. It is sufficient to state that it comprises a spectrum ranging from computable contracts[83], to contracts partly in code and partly in writing[84], to self-executing contracts where judicial enforcement may neither be desired nor possible, to computed contracts involving self-learning artificial intelligence.

The Consultation Document refers to a smart legal contract as "a smart contract that either is, or is part of, a binding legal contract". Further, according to the Consultation Document:

> "There are a variety of potential smart legal contract implementations. However, the three implementations that are often referred to are:

[82] https://github.com/Colored-Coins/Colored-Coins-Protocol-Specification.

[83] Surden, Computable Contracts [2012] 46 Univ. Calif., Davis Law Review 629.

[84] Stark, Making Sense of Smart Contracts, Coindesk, June 4 2016 and Clack et al, Smart Contract Templates: Foundations, Design Landscapes and Research Directions, Barclays Bank PLC, 2016.

(i) the "**Solely Code Model**", i.e. code standing by itself (i.e. without being housed within any form of natural language contractual architecture);

(ii) the "**Internal Model**", i.e. a contract written in a document comprising natural language and code; and

(iii) the "**External Model**", i.e. a contract entirely in natural language but including agreement for certain aspects of the contract to be performed using a program designed for this purpose".

We would point out that while this is a possible taxonomy of smart legal contracts, alternatives exist, for example a contract that is solely in code but is expressly subject, for matters not addressed by the code, to the common law (i.e. the common law would be left to fill gaps in the code). Therefore, in our view, the taxonomy in the consultation document should not be taken as authoritative.

The basic questions that apply to a smart legal contract are the same as apply to all other legal contracts. Thus, to form a valid contract, there must be offer, acceptance, consideration and an intention to form legal relations. We see no reason why these requirements would or should be modified in the context of a smart legal contract, although we recognise that they may require reformulation or interpretation in the context of artificial intelligence and machine-to-machine contracts. However, we understand that this is not the object of this consultation.

Rather than provide a summary of the law of contract formation we would simply state that a smart contract is capable of giving rise to binding legal obligations in the same circumstances, and subject to the same limitations as any other contracts. The main differences are likely to be:

(1) Statutory requirements for "writing" or a "signature";

(2) The need for a judge to be able to interpret the code (which we anticipate would require the provision of expert evidence);

(3) Clauses that purport to oust the jurisdiction of the court by making the code prevail over the common law;

(4) The possible implication of terms;

(5) Inconsistencies between the code and the otherwise expressed intentions of the parties and/or unintended consequences of the operation of the code;

(6) Inconsistencies between the code and any written part of the contract, or the general law;

(7) Inconsistencies between higher level code and basic code; and

(8) Contractual interpretation.

We will return to some of these issues as part of the ancillary questions. We would be happy to engage on the other issues separately with the Panel.

Ancillary questions

How would an English court apply general principles of contractual interpretation to a smart contract written wholly or partly in computer code?

The question of contractual interpretation only arises where there is ambiguity as to the interpretation of the terms of a contract. This is much more likely to be the case with regard to the parts of the contract written in natural language rather than computer code as natural language is more open-textured.

The first question to be asked is the relationship between the code and the written elements of the contract. There are four possibilities: the code is paramount, the written contract is paramount, the two are of equal interpretative value, and the contract fails to specify the relationship. We consider that where the contract specifies a particular hierarchy, then this should be respected and form the starting point for the interpretative exercise. Where the contract is silent, or ambiguous on this point, the court will need to interpret the contract to determine whether the parties intended the code and written elements to be of equal weight or for one to be accorded more weight.

The second question is applying the "four corners" rule: Every contract is to be construed with reference to its object and the whole of its terms[85]. In *Barton v. Fitzgerald*[86] the Court stated:

> "It is a true rule of construction that the sense and meaning of the parties in any particular part of an instrument may be collected ex antecedentibus et consequentibus; every part of it may be brought into action in order to collect from the whole one uniform and consistent sense, if that may be done".

In *N.E. Railway v. Hastings*[87] Lord Davey said:

> "The deed must be read as a whole in order to ascertain the true meaning of the parties of its several clauses, and the words of each clause should be interpreted as to bring them into harmony with the other provisions of the deed if that interpretation does no violence to the meaning of which they are naturally susceptible".

It follows that whichever (if any) part of the contract is regarded as paramount, all aspects have to be construed together as a single interpretative exercise.

That said, we do not see why in the case of a contract partly in code and partly in writing, once the relationship between the various parts of the contract has been

[85] Chitty on Contract, 33rd ed., Vol.1, Sweet & Maxwell, 2018, para 13-061.

[86] (1812) 15 East 529, 541.

[87] [1900] AC 260, 267.

ascertained, there is any reason for the courts not to apply the normal rules applicable to contractual interpretation. Expert evidence may be required as to the meaning of the code, but there is no reason why this could not be put before the court in the same way as other expert evidence. It would then be for the judge, applying the normal rules of interpretation, to reach a meaning in the same way as if the contract was partly in a foreign language or partly subject to foreign law.

More difficult questions are likely to arise with:

(1) Contracts wholly in code electing judicial dispute settlement;

(2) Contracts that attempt to codify the common law as well as the operative parts of the parties' agreement; and

(3) Contracts that purport to be self-enforcing and interpreting where the result of running the code is contrary to the common law.

Under what circumstances would an English court look beyond the mere outcome of the running of any computer code that is or is part of a smart contract in determining the agreement between the parties?

We consider that the answer to this question is likely to be highly fact specific and is incapable of being answered other than in general terms:-

(1) if the requirements for contractual formation are absent there will not be a legally enforceable contract. Thus, for there to be a contract there must be offer, acceptance, consideration and an intention to create legal relations.

(2) Formal requirements may be lacking (for example, section 4 Statute of Frauds 1677; section 2 Law of Property (Miscellaneous Provisions) Act 1989).

(3) There are standard vitiating factors in English contract law that may have the result that the contract is void or voidable. These include mistake, misrepresentation, fraud, duress, economic duress, bribery, etc.

(4) The contract may be illegal *ab initio*. Such illegality may arise out of an intention to do an act prohibited by positive law (e.g. sale of narcotic substances, or money laundering) or have an illegal object (e.g. to commit an act that is illegal in the place of performance).

(5) The contract may be or become contrary to English public policy (e.g. an agreement in restraint of trade).

(6) The contract may become frustrated either by supervening illegality or because performance would be radically different from what the parties expected.[88]

[88] *Krell v. Henry* [1903] 2 K.B. 740; *Blakely v. Muller* [1903] 2 K.B. 760n*; cf. Herne Bay Steamship Co v. Hutton* [1903] 2 K.B. 683 (the "coronation cases").

(7) The contract may be discharged by breach by the other party(ies).

It should be noted that the legal consequences will vary depending on whether the contract has been performed before judicial challenge or the relevant vitiating factor is discovered after the contract has been performed (whether manually or automatically by execution of the code). Where the contract has not been performed there will be a question whether the other party can rely on the vitiating factor to refuse performance. Where the contract has been performed, or money or valuable benefits have been transferred under a contract that is void or successfully avoided, there may be a claim in restitution. Consideration of the possibility of restitutionary remedies is fact specific and outside the scope of this response.

Further, there may be circumstances where the running of the code gives rise to claims in tort. For example, in the case of The DAO, the code performed exactly as it had been programmed, although operated in a way that was wholly unexpected. In June 2016, users exploited a vulnerability in The DAO code to enable them to siphon off one-third of The DAO's funds to a subsidiary account. This was not a "hack" as no part of the original software was modified or altered to cause it to operate otherwise than as it had been programmed; it was just faulty. The issue was eventually resolved by a hard fork on the Ethereum blockchain so as to ignore The DAO by going back in time on the blockchain. However, had investors not recovered their money then it is arguable that the promoters of The DAO, Slock.it, and possibly others, would have owed a duty of care in tort in writing the code.[89]

Is a smart contract between anonymous or pseudo-anonymous parties capable of giving rise to binding legal obligations?

We see no reason why a contract between anonymous or pseudo-anonymous parties would, as such, not be a contract under English law. We would draw a parallel with a contract with an undisclosed principal. However, there may be real problems in enforcement where the contract is not performed (or is performed incorrectly) as it would be necessary to identify a named defendant in order to bring proceedings.

Generally the defendant must be served with proceedings in accordance with the procedures authorised under the Civil Procedure Rules. This was recently reiterated by the Supreme Court in *Cameron v. Liverpool Victoria Insurance Co. Ltd.*[90] where the Supreme Court held it to be a fundamental principle of justice that a person could not be made subject to the jurisdiction of the court without having such notice of the proceedings as would enable him to be heard. Lord Sumption stated:

> Justice in legal proceedings must be available to both sides. It is a fundamental principle of justice that a person cannot be made subject to the jurisdiction of the court without having such notice of the proceedings as will enable him to be heard. The principle is perhaps self-evident. The clearest statements are to be found in the case law about the enforcement of foreign judgments at common law. The English courts will not enforce or recognise a foreign judgment, even if

[89] Of course, proof of loss is not a sufficient requirement for a duty of care to arise in tort.

[90] [2019] 1 W.L.R. 1471.

it has been given by a court of competent jurisdiction, if the judgement debtor had no sufficient notice of the proceedings. The reason is that such a judgment will have been obtained in breach of the rules of natural justice *according to English notions*. In his celebrated judgment in *Jacobson v Frachon* (1927) 138 LT, 386, 392, Atkin LJ, after referring to the "principles of natural justice" put the point in this way:

> "Those principles seem to me to involve this, first of all that the court being a court of competent jurisdiction, has given notice to the litigant that they are about to proceed to determine the rights between him and the other litigant; the other is that having given him that notice, it does afford him an opportunity of substantially presenting his case before the court."

Atkin LJ's principle is reflected in the statutory provisions for the recognition of foreign judgments in section 9(2)(c) of the Administration of Justice Act 1920 and section 8(1) and (2) of the Foreign Judgments (Reciprocal Enforcement) Act 1933, as well as in article 45(I)(b) of the Brussels I Regulation (Recast), Regulation (EU) No 1215/2012.

It would be ironic if the English courts were to disregard in their own proceedings a principle which they regard as fundamental to natural justice as applied to the proceedings of others. In fact, the principle is equally central to domestic litigation procedure. Service of originating process was required by practice of the common law courts long before statutory rules of procedure were introduced following the Judicature Acts of 1873 (36 & 37 Vict c 66) and 1875 (38 & 39 Vict c 77).[91]

And:

> In my opinion, subject to any statutory provision to the contrary, it is an essential requirement for any form of alternative service that the mode of service should be such as can reasonably be expected to bring the proceedings to the attention of the defendant. *Porter v Freudenberg* was not based on the niceties of practice in the masters' corridor. It gave effect to a basic principle of natural justice which had been the foundation of English litigation procedure for centuries, and still is.[92]

There are two exceptions to personal service: Rules 6.15 and 6.16. However, the general rule in *Cameron* still stands.

Rule 6.15 was considered by the Supreme Court in *Barton v. Wright Hassall LLP*[93]. Lord Sumption, for the majority, held that service by e-mail was not a sufficient reason for departing from the rules:

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[91] Ibid. pp. 1481-1482.

[92] Ibid. p. 1485.

[93] [2018] 1 W.L.R. 1119.

> "it cannot be enough that Mr Barton's mode of service successfully brought the claim form to the attention of Berrymans. As Lord Clarke JSC pointed out in *Abela v Baadarani* [2013] 1 WLR 2043, this is likely to be a necessary condition for an order under CPR r 6.15, but it is not a sufficient one. Although the purpose of service is to bring the contents of the claim form to the attention of the defendant, the manner in which this is done is also important. Rules of court must identify some formal step which can be treated as making him aware of it. This is because a bright line rule is necessary in order to determine the exact point from which time runs for the taking of further steps or the entry of judgment in default of them. Service of the claim form within its period of validity may have significant implications for the operation of any relevant limitation period, as they do in this case. Time stops running for limitation purposes when the claim form is issued. The period of validity of the claim form is therefore equivalent to an extension of the limitation period before the proceedings can effectively begin. It is important that there should be a finite limit on that extension. An order under CPR r 6.15 necessarily has the effect of further extending it. For these reasons it has never been enough that the defendant should be aware of the contents of an originating document such as a claim form. Otherwise any unauthorised mode of service would be acceptable, notwithstanding that it fulfilled none of the other purposes of serving originating process".[94]

Rule 6.16 requires exceptional circumstances, whether for prospective or retrospective service dispensing orders.

Where the contract is entered into with an anonymous or pseudo-anonymous party (as we see no reason to differentiate between them) only in exceptional circumstances will the court dispense with service on the defendant. Moreover, if the defendant cannot be identified, there would not seem to be a way in which any judgment would be enforced as enforcement presupposes an identified defendant. It follows that even if binding the contractual rights may be worthless in such a case.

Could a statutory signature requirement be met by using a private key?

The consultation document refers to section 53(1)(c) and section 136(1) Law of Property Act 1925. Section 53(1)(c) states:

> "a disposition of an equitable interest or trust subsisting at the time of the disposition, must be in writing *signed by the person* disposing of the same, or by his agent thereunto lawfully authorised in writing or by will".

Section 136(1) provides:

> "(1) Any absolute assignment by writing *under the hand of the assignor* (not purporting to be by way of charge only) of any debt or other legal thing in action, of which express notice in writing has been given to the debtor, trustee or other person from whom the assignor would have been entitled to claim such debt or

[94] Ibid. p. 1128.

> thing in action, is effectual in law (subject to equities having priority over the right of the assignee) to pass and transfer from the date of such notice—
>
> (a) the legal right to such debt or thing in action;
>
> (b) all legal and other remedies for the same; and
>
> (c) the power to give a good discharge for the same without the concurrence of the assignor:
>
> Provided that, if the debtor, trustee or other person liable in respect of such debt or thing in action has notice—
>
> (a) that the assignment is disputed by the assignor or any person claiming under him; or
>
> (b) of any other opposing or conflicting claims to such debt or thing in action;
>
> he may, if he thinks fit, either call upon the persons making claim thereto to interplead concerning the same, or pay the debt or other thing in action into court under the provisions of the Trustee Act, 1925".

Other signature requirements exist e.g. under the Statute of Frauds 1677 and the Bills of Exchange Act 1882.

In *Golden Ocean Group Ltd v. Salgaocar Mining Industries Pvt Ltd*[95] the Court of Appeal held that an electronic signature intended to authenticate the document was sufficient to constitute a signature for the purposes of section 4 Statute of Frauds. As has been seen, Gleeson takes a different view for the purposes of the Bills of Exchange Act 1882. There would appear to be no authority under the Law of Property Act 1925. In *Golden Ocean* Tomlinson LJ. (with whom the other members of the court agreed) reasoned:

> "The document which confirms the conclusion of the contract of guarantee is the final e-mail at B106. It contains the name Guy, indicating that it was sent by Mr Hindley. Mr Kendrick has three or possibly four distinct points in relation to the argument that this constitutes signature by or on behalf of the guarantor. First, he says that this is not a signature at all. It is, he says, no more than a salutation, and moreover one delivered in a "matey" or familiar fashion. Secondly, if it is a signature, it is only the signature of a communication. It is not a signature appropriate or effective to authenticate a contract of guarantee. Thirdly, he says that the e-mail is not itself a contract of guarantee but simply an e-mail by which a contract of guarantee is concluded by operation of law. What is required is signature on the agreement to guarantee. Fourthly, Mr Hindley is a chartering broker. By this e-mail he is concluding the charterparty contract and therefore as a matter of law also concluding the contract of guarantee. That indicates only, on the assumed facts, that he has authority to make a charterparty contract which triggers the making of a contract of guarantee. That

95 [2012] 1 W.L.R. 3674.

> is not enough. It must further be shown that he was the authorised agent of the guarantor to sign the agreement of guarantee, as distinct from having the authority to conclude the contract of guarantee. I note that this last submission recognises the distinction upon which I have relied in dealing with Mr Kendrick's fourth main point.
>
> It was common ground both before the judge and before us that an electronic signature is sufficient and that a first name, initials, or perhaps a nickname will suffice. Mr Kendrick's point was that the affixing of Mr Hindley's name was not done in a manner which indicated that it was intended to authenticate the document, that being the touchstone: *Caton v. Caton* (1867) LR 2 HL 127, a decision of the House of Lords. See also the discussion in Andrews & Millett, Law of Guarantees, 5th ed (2007), para 3-024, where the cases and the principles emerging therefrom are helpfully collected together and analysed. I do not accept Mr Kendrick's first argument. Chartering brokers may communicate with one another in a familiar manner but that does not detract from the seriousness of the business they are conducting. In my judgment Mr Hindley put his name, Guy, on the e-mail so as to indicate that it came with his authority and that he took responsibility for the contents. It is an assent to its terms. I have no doubt that that is a sufficient authentication.
>
> For much the same reason I reject the second point too. Professional brokers understand that their communications give rise to obligations binding their principals. This was not simply an inconsequential communication. It was a communication which the brokers will readily have appreciated brought into being both the charterparty and the guarantee. Even if I am wrong that they would have appreciated that it brought into being a guarantee, their appreciation that it would bring into being a charterparty is sufficient to indicate that the signature plays an important role in authenticating a contract.
>
> Naturally I accept that the e-mail at B106 is not itself the contract of guarantee. I have no doubt however that the signature on that document of Mr Hindley, assuming his authority, is properly regarded as authentication of the contract of guarantee contained in it and the other document or documents in the sequence to which I have already referred".[96]

The weight of this case is diminished by the fact that it was common ground between the parties that an electronic signature was sufficient. However, in *J Pereira Fernandes SA v. Mehta*[97] Judge Pelling QC said:

> "it seems to me that a party can sign a document for the purposes of section 4 by using his full name or his last name prefixed by some or all of his initials or using his initials, and possibly by using a pseudonym or a combination of letters and numbers (as can happen for example with a Lloyd's slip scratch), providing always that whatever was used was inserted into the document in order to give, and with the intention of giving, authenticity to it. Its inclusion must have been

[96] Ibid., pp. 3695-3696.

[97] [2006] 1 W.L.R. 1543.

> intended as a signature for these purposes. I agree with Mr Aslett's analysis in that in *Caton v. Caton* LR 2 HL 127 the names were included in the document under consideration to describe intended performance. I also accept his submission that the meaning of "incidental" in this context means where the signature or name just happens to appear somewhere. …
>
> I have no doubt that if a party creates and sends an electronically created document then he will be treated as having signed it to the same extent that he would in law be treated as having signed a hard copy of the same document. The fact that the document is created electronically as opposed to as a hard copy can make no difference. However, that is not the issue in this case. Here the issue is whether the automatic insertion of a person's e-mail address after the document has been transmitted by either the sending and/or receiving internet service provider constitutes a signature for the purposes of section 4.
>
> In my judgment the inclusion of an e-mail address in such circumstances is a clear example of the inclusion of a name which is incidental in the sense identified by Lord Westbury in the absence of evidence of a contrary intention. Its appearance divorced from the main body of the text of the message emphasises this to be so. Absent evidence to the contrary, in my view it is not possible to hold that the automatic insertion of an e-mail address is, to use Cave J.'s language, "intended for a signature". To conclude that the automatic insertion of an e-mail address in the circumstances I have described constituted a signature for the purposes of section 4 would I think undermine, or potentially undermine, what I understand to be the Act's purpose, would be contrary to the underlying principle to be derived from the cases to which I have referred and would have widespread and wholly unintended legal and commercial effects. In those circumstances, I conclude that the e-mail referred to in para 3 above did not bear a signature sufficient to satisfy the requirements of section 4".[98]

It follows from *Golden Ocean Group Ltd* and *J Pereira Fernandes SA v. Mehta* that an electronic signature is sufficient for the purposes of section 4 Statute of Frauds, albeit a simple e-mail is not. However, the question here is whether a private key in private-public key cryptography is itself sufficient to constitute a signature. We have concluded in response to question 1.1.2 a private key is simply confidential information that enables a transaction to be validated. In our view it is not a signature or any other writing but simply an electronic means of assenting to a transaction. Indeed, the evidence that the private key has been used resides in the fact that that transaction may be accepted. It still needs to be validated by the consensus mechanism of the relevant DLT system (i.e. proof of work or proof of stake).

We consider that if an e-mail is not a "signature" then use of private key cryptography *a fortiori* would not constitute a signature under the Law of Property Act 1925, the Bills of Exchange Act 1882 or the Statute of Frauds. We doubt that section 8 Electronic Communications Act 2000 would provide a solution as by virtue of section 15(1) an electronic communication is defined as a "communication transmitted (whether from one person to another, from one device to another or from a person to a device or vice

[98] Ibid., p. 1552.

versa) - (a) by means of an electronic communications network; or (b) by other means but while in an electronic form". The problem is that the private key is not communicated but simply used to authenticate the transaction. It is therefore outside the scope of the 2000 Act.

Could a statutory "in writing" requirement be met in the case of a smart contract composed partly or wholly of computer code?

We would need to know which statutory provisions were envisioned in order to comment on the requirement for writing. In *Golden Ocean Group Ltd v. Salgaocar Mining Industries Pvt Ltd*[99] the Court of Appeal considered that the "in writing" requirement under section 4 Statute of Frauds could be satisfied by electronic communication:

> "The relevant e-mail thread of 21 February 2008, B106–108, occupies two and a half pages of A4 paper. In it is to be found clear agreement on the terms of the memorandum of agreement and, additionally, agreement that one of the provisions agreed in that context, the "Additional Clause", should in point of form be put rather into the charterparty where it more appropriately belonged than in the memorandum of agreement. If I have correctly understood the nature of the e-mail string or thread at B106–108, the exercise of ascertaining that a guarantee has been agreed in writing and discovering its terms involves reference to only two documents, the document at B106–108 and the e-mail of 2 February 2008 sent on 4 February 2008. I can see no reason why the contract of guarantee so identified should not be regarded as an agreement in writing for the purposes of the Statute of Frauds. For the avoidance of doubt however my conclusion is not dependent upon the circumstance that, as it happens, it is here necessary to look at only two documents. Subject to the requirement of signature to which I shall return, I can see no objection in principle to reference to a sequence of negotiating e-mails or other documents of the sort which is commonplace in ship chartering and ship sale and purchase. Whether the pattern of contract negotiation and formation habitually adopted in other areas of commercial life presents difficulty in adoption of the same approach must await examination when the problem arises. Nothing I have said is intended to discourage the obviously sensible practice of incorporating a guarantee either in a readily identifiable self-standing document or otherwise providing for it as part of the terms of a formally executed document. The Statute of Frauds must however, if possible, be construed in a manner which accommodates accepted contemporary business practice. The present case is not concerned with prescribing best or prudent practice. It is concerned with ensuring, so far as is possible, that the adoption of usual and accepted practice cannot be used as a vehicle for injustice by permitting parties to break promises which are supported by consideration and upon which reliance has been placed".[100]

[99] [2012] 1 W.L.R. 3674.

[100] Ibid. p. 3689.

That being the case, we see no reason, in principle, why an “in writing” requirement could not be met by electronic means, including computer code. However, we would reiterate that the specific context of the statutory provision would need to be considered.

Comments and questions

As noted above, we would be happy to engage with the Panel on any aspects covered by this response, or any other issues that may be of relevant to the Panel.

Annex: historical review and analysis of English personal property law

Structure of Property Law

It is a commonplace that the common law developed thorough the forms of action and that even though they were abolished by the Common Law Procedure Act 1852, following the Uniformity of Process Act 1832 and the Real Property Limitation Act 1833, the forms of action have exercised a significant effect on the substance of the common law.

Property law in England is divided into real property and personal property. This does not correspond to the Roman law classification of corporeal and incorporeal property. The origin of the distinction seems to be provided by the medieval real and personal actions.

The first distinction in personal property is to be drawn between chattels real and chattels personal. The former includes, most importantly, a term of years absolute which, following the 1925 reforms of property law, is one of the only two legal estates in land. As this is not relevant to this consultation no more will be said of chattels real. All other chattels are chattels personal. Chattels personal were known "because for the most part they belong to the person of a man or else for that they are to be recovered by the personal actions".[101] See also Les Termes de la Leye which states that Catals "Personal may be so called in two respects. The one because they belong immediately to the person of a man; as a horse, &c. The other, because when they are wrongfully detained, we have no other means for their recovery but personal actions".[102]

Medieval Personal Actions

The original remedies for interference with chattels personal were appeal of larceny and *res adiratae*[103]. The former was a remedy against anyone in possession of the chattels, and the result of the proceedings could restore to the owner the goods themselves and not just damages[104]. "A part of this remedy was the fresh pursuit of the thief or of the missing goods; and the action lay against any person, in whose possession the goods were found, whether he were the original thief or taker, or had acquired possession of them, honestly or dishonestly"[105]. If the owner were successful in his appeal the thief would be condemned to death for felony. The person found in possession of the goods

[101] Co. Litt. 118 b, Societie of Stationers, 1628.

[102] 1721, p. 104.

[103] Holdsworth, History of English Law, Vol 3, Methuen, p.320.

[104] Ibid.

[105] J and TC Williams, Principles of the Law of Personal Property, 17th ed., Sweet & Maxwell, 1913, p.7 citing Bracton, Fleta and Britton.

might clear himself of larceny by showing he had come honestly by the goods but still had to restore them to the true owner[106].

Res adiratae omitted the allegation of larceny and the gist of the action lay in wrongful detention after a request for delivery.[107] However, in this case the plaintiff had to plead the value of the goods and the defendant could avoid restoring the goods by paying their value.[108] The absence of any real action, such as was available in the case of land, for personal property is at the root of the distinction between reality and personalty that persists today.

Defects in the initial personal actions resulted in the courts developing new causes of action to provide more effective remedies. Appeal of larceny was a risky action as it involved a criminal prosecution, and if for any reason the appeal failed, and the thief were prosecuted by the Crown, the chattels were forfeit to the King.[109] "Thus it came to be considered that the restitution of the stolen goods in an appeal of larceny was made, not as of old, by virtue of the owner's title … but rather by a gracious waiver, in reward for prompt pursuit of a criminal, and of the royal right to have the goods by forfeiture. And the owner's right to recover his stolen goods in an appeal was limited to goods which the King's officer or some other had seized to the King's use".[110] This was only changed by a statute of Henry VIII which gave restitution to the owner of stolen goods after attainder for felony, although the action of appeal of larceny was not abolished until 1819.[111]

Appeal of larceny itself was replaced from the thirteenth century by trespass *de bonis asportatis*, although this action could only be bought against the actual person who had taken the chattels out of the possession of the plaintiff and lay in damages only.[112] A consequence of the reliance of the common law from the middle ages on such actions was to deny a *vindicatio*[113] in English law in respect of personal property similar to the real actions[114].

Detinue

Res adiratae seems to have fallen out of use at the same time as appeal of larceny.[115] According to Holdsworth, detinue probably took its place[116]. Detinue was originally an

[106] Ibid. pp. 7-8.

[107] Holdsworth, *supra*, p. 321.

[108] J and TC Williams, *supra*, p. 8 citing Bracton.

[109] Holdsworth, *supra*, p.323.

[110] J and TC Williams, *supra*, pp. 9-10.

[111] Ibid. p. 10.

[112] Holdsworth, *supra,* p.323.

[113] In Roman law an action for enforcement of ownership in a thing.

[114] Replevin could result in specific restitution, but the process was imperfect and subject to various limitations.

[115] Holdsworth, *supra*, p.324 and J and TC Williams, *supra*, pp. 12-13.

action for breach of contract and lay only against the original contractor. However "[i]t was however extended to the case of the detainor of goods, by one who had gained possession of them by finding, or the finder of lost goods having no right to withhold them from their owner. And in later times detinue was allowed to be brought by the fiction of a delivery or finding against any one, who unlawfully detained goods from their owner, without regard to the means by which the defendant obtained possession of them; and it was laid down that the gist of the action is the unlawful detainer".[117] It follows that detinue could only be brought against a person in possession of the plaintiff's goods. In detinue the plaintiff could recover the goods themselves or their value. However, if the defendant failed to appear then it was not possible to recover in actions bought before 1832. Various remedies were provided in case of a failure to appear but "the plaintiff in a personal action could never obtain final judgment against the defendant in default of his appearance".[118]

Trover[119]

In the sixteenth and seventeenth centuries detinue was largely superseded by the action of trover sur conversion.[120] This was due to its inherent shortcomings. In an action in detinue the defendant could wager his law, swearing that he did not possess the chattel and produce witnesses attesting to his credibility. In this case the plaintiff was denied a determination of the claim on the merits[121] as the case would not be heard and judgment entered for the defendant This was not abolished until the Civil Law Procedure Act 1833. Detinue also did not address the situation where the property was damaged, destroyed, transformed or was no longer in the possession of the defendant.[122]

> "The two essential elements, then, of a conversion are, firstly, a positive act of misfeasance, and, secondly, the diversion of the use and benefit of the chattels from the plaintiff to the defendant".[123]

It is a wrong to the right of possession, as contrasted with trespass which is a wrong to actual possession.[124] There were therefore three main causes of action available: "Trespass *de bonis asportatis* lay for a wrongful taking of the plaintiff's chattels by the defendant from the plaintiff's possession; detinue lay for the wrongful detention of the plaintiffs chattels by the defendant; and trover lay for the wrongful conversion or

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116 Ibid. pp.324-325.

117 J and TC Williams, supra, p. 16.

118 Ibid. p. 18 fn (d).

119 JB Ames, The History of Trover, (1897) XI Harvard Law Review 37.

120 Holdsworth, *supra,* Vol 7, 1st ed., p.403.

121 S Green and J Randall, The Tort of Conversion, Hart, 2009, p. 14.

122 *Ibid*. p. 15

123 Holdsworth, *supra*, p. 403.

124 Ibid.

disposition of the plaintiff's chattels by the defendant".[125] However, the superiority of the action of trover lead the common law courts to expand its scope to progressively supersede detinue[126].

In trover, like trespass, only the value of the goods could be claimed. The power of the common law courts to order specific delivery was only enacted in 1854 and remains a discretionary remedy as in equity.

It will be seen that absent a *vindicatio* the common law has been content to protect ownership of chattels through various tortious actions of which the principal has become conversion. The abolition of the forms of action meant that the need for a separate tort of detinue covering the same ground as conversion lost its raison d'être and when the Law Commission considered the matter in its 18th Report (Conversion and Detinue) it concluded that the only case of detinue that was not also conversion arose in the context of bailment. Section 2 of the Torts (Interference with goods) Act 1977 provides:

> "2. Abolition of detinue.
>
> (1) Detinue is abolished.
>
> (2) An action lies in conversion for loss or destruction of goods which a bailee has allowed to happen in breach of his duty to his bailor (that is to say it lies in a case which is not otherwise conversion, but would have been detinue before detinue was abolished)".

The effect is that any claim that before 1978 would have been pleaded in detinue must now be pleaded in conversion. Trespass to goods remains a separate tort.

Conversion, in the modern law, applies to interference with an interest in chattels and not to choses in action.[127] This was established in 2008 by the House of Lords, and while academic criticism has been forthcoming, the law must currently be regarded as settled on this point. Lord Hoffmann (for the majority) said that in connection with the imposition of strict liability for conversion:

> "Parliament has responded with legislation such as the Factors Act 1889 (52 & 53 Vict c 45), section 4 of the Cheques Act 1957(which protects a collecting bank against liability for conversion of a cheque to which its customer had no title) and section 234(3) of the Insolvency Act 1986, which, in the absence of negligence, protects an administrative receiver who "seizes or disposes of any property which is not property of the company" against liability. But there are no such protective provisions in relation to anything other than chattels. Why not? Obviously because Parliament thought them to be unnecessary. It would never have occurred to Parliament that strict liability for conversion could exist for anything other than chattels. The whole of the statutory modification of the law

[125] Ibid.

[126] Ibid p.405.

[127] *OBG Ltd v. Allan* [2008] 1 A.C. 1, 67.

> of conversion has been on the assumption that it applies only to chattels. There has been no discussion of the question of whether an extension of conversion to choses in action would require a corresponding or even greater degree of protection for people acting in good faith" para [97].

Lord Hoffmann referred to the absence of any precedent for applying conversion or trover to personal property other than goods or chattels: para [100].

Lord Walker considered the extension of the tort of conversion to things in action:

> "The reshaping would be inconsistent with the basis on which Parliament enacted the Torts (Interference with Goods) Act 1977, after long consideration by the Law Revision Committee. It would have far-reaching consequences which this House is not in a position to explore or assess fully. This is an area in which reform must come from Parliament, after further consideration by the Law Commission" para [271].

Lord Brown considered the suggestion that conversion should apply to things in action was:

> "no less than the proposed severance of any link whatever between the tort of conversion and the wrongful taking of physical possession of property (whether a chattel or document) having a real and ascertainable value. Indeed, I respectfully question whether such a proposed development in the law ought in any event to be welcomed. I recognise, of course, that the tort has long since been extended to encompass a variety of documents, not merely documents of title and negotiable instruments but also any business document which in fact evidences some debt or obligation. But to my mind there remains a logical distinction between the wrongful taking of a document of this character and the wrongful assertion of a right to a chose in action which properly belongs to someone else. One (the document) has a determinable value as at the date of its seizure. The other, as so clearly demonstrated by this very case [OBG], does not. It is one thing for the law to impose strict liability for the wrongful taking of a valuable document; quite a different thing now to create strict liability for, as here, wrongly (though not knowingly so) assuming the right to advance someone else's claim." Para [321].

Lord Nicholls and Lady Hale dissented considering there to be no principled distinction between rights embodied in a document and other contractual rights. However, the reasoning of the majority was that to bring an action in conversion the personal property had to be capable of possession.

As for what constitutes a chattel for these purposes, Blackstone writes:

> "Chattels persons are, properly and strictly speaking, things *moveable*; which may be annexed to or attendant on the person of the owner, and carried about with him from one part of the world to another. Such are animals, household-

> stuff, money, jewels, corn, garments, and everything else that can properly be put in motion, and transferred from place to place".[128]

Halsbury's Laws of England[129] follows Blackstone.

Goodeve, the Modern Law of Personal Property[130] writes:

> "Corporeal goods and chattels, or 'choses in possession,' include all things which, being themselves capable of motion or of being moved, may be perceived by the senses – seen, touched, taken possession of: as ships, household furniture; goods and effects of all kinds; farm stock and implements; horses, cattle, and other animals; corn, money, jewels, wearing apparel, &c; in short, live stock or dead, manufactured goods or raw material, everything capable of touch and not fixed to the soil".[131]

Choses in Action

The second category of personal property currently known to English law constitutes choses in action. This class of property is generally marked by two characteristics, although their importance has changed over time: First, they are incapable of physical possession; second, the rights embodied in in the chose can only be enforced by action. This is brought out by the definition in les Termes de la Leye[132]: "Thing in action is, when a man hath Cause, or may bring an Action for some Duty due to him; as an Action of Debt upon an Obligation, Annuity, or Rent, Action of Covenant, or Ward, or Trespass of goods taketh away, Beating or such like: and because they are things whereof a Man is not possessed, but for Recovery of them they are called Things in Action".[133]

Blackstone refers to choses in action as:

> "Property in *action*, or thing in question; the possession whereof may however be recovered by a suit or action at law: from whence the thing so recoverable is called a thing, or *chose*, in action".[134]

Cowell's The Interpreter states that "*Chose in action*, may also be called *Chose in suspense*, because it hath no reall existence or being, neither can it be properly said to be in our possession".[135]

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[128] Commentaries on the Laws of England, Book II, pp. 387 (W Prest ed., OUP, 2016). Cowell, The Interpreter, William Sheares, 1637, "Cattals" writes that the definition "commeth of the Normans … But as is used in our common law, it comprehendeth all goods moveable & immovable, but such as are in the nature of freehold".

[129] 5th ed., Vol. 80, Butterworths, 2013, para 806.

[130] W Maxwell & Son, 1887.

[131] Ibid., p. 8

[132] "Chose in action", 1721.

[133] P. 126.

[134] Commentaries on the Laws of England, Book II, pp. 396-397 (W Prest ed., OUP, 2016).

Blount's Law Dictionary[136] refers to a chose in action as "a thing incorporeal and only a right; as an Annuity, Obligation for Debt, a Covenant, Voucher by Warranty, and generally all Causes of Suit for any Debt or Duty, Trespass or Wrong".

A more modern definition was provided by Channel J. in *Torkington v. Magee*[137]:

> ""Chose in action" is a known legal expression used to describe all personal rights of property which can only be claimed or enforced by action, and not by taking physical possession".

According to J and TC Williams, The Law of Personal Property[138]: "The term *choses in action* appears to have been applied to things, to recover or realize which if wrongfully withheld, an action must have been brought; things in respect of which a man had no actual possession or enjoyment, but a mere right enforceable by action".[139]

Holdsworth states:

> ""chose in action" includes all rights which are enforceable by action - rights to debts of all kinds, and rights of action on a contract or a right to damages for its breach; rights arising by reason of the commission of tort or other wrong; and rights to recover the ownership or possession of property real or personal. It was extended to cover the documents, such as bonds, which evidenced or proved the existence of such rights of action. This led to the inclusion in this class of things of such instruments as bills, notes, cheques, shares in companies, stock in the public funds, bills of lading, and policies of insurance. But many of these documents were in effect documents of title to what was in substance an incorporeal right of property. Hence it was not difficult to include in this category things which were even more obviously property of an incorporeal type, such as patent rights and copyrights. Further accessions to this long list were made by the peculiar division of English law into common law and equity. Uses, trusts, and other equitable interests in property, though regarded by equity as conferring proprietary rights analogous to the rights recognized by law in hereditaments or in chattels, were regarded by the common law as being merely choses in action".[140]

It should be noted that the treatment of intellectual property rights as choses in action has been seen by some as controversial as they do not confer any right against anyone but an infringer, and as they may never be infringed there may not be any cause for an action to be brought. Perhaps for this reason section 30(1) Patents Act 1977 provides

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135 "Chose", William Shears, 1637.

136 Nomo Lexikon, J. Martin & H. Herringman, 1670.

137 [1902] 2 K.B. 427, 430 approved in *Murangaru v. Secretary of State for the Home Department* [2009] I.N.L.R. 180. .

138 17th ed., 1913.

139 Ibid, p. 29.

140 Holdsworth, The History of the Treatment of *Choses* in Action by the Common Law (1920) XXXIII Harvard Law Review 997-998.

that “Any patent or application for a patent is personal property (without being a thing in action)”. It is therefore no longer a thing in action but remains personal property.

Halsbury’s Laws of England[141] lists the following as choses in action:

> debts;
>
> rights under a contract;
>
> rights or causes of action;
>
> shares, stock in the public funds, stock;
>
> certain intellectual property rights; and
>
> equitable rights.

However, an export quota or a carbon trading allowance is not a chose in action[142], nor are certain other rights and remedies.

It is clear that the reason for the classification of such a heterogeneous variety of rights can only be justified on historical grounds. Holdsworth attributes the rise of choses in action to personal actions, such as debt, detinue or trespass.[143] Although, from the sixteenth century it is extended to cover rights under real actions, the roots of which lay in claims arising out of obligations: contract and tort.[144] During the sixteenth century, the concept of a chose in action was extended to documents which were necessary evidence for such a right.[145] Holdsworth states:

> “in I535 a bond was said to be a chose in action; and in I584 in Calye's case it was said that charters and evidences concerning freehold or inheritance, obligations, and other deeds and specialities, all came under this head. When the law had reached this point it was inevitable that the many new documents which the growth of the commercial jurisdiction of the common-law courts was bringing to the notice of the common lawyers should be classed in this category. Thus during the seventeenth, eighteenth, and nineteenth centuries such documents as negotiable instruments, stock, shares, policies of insurance, and bills of lading were declared to be choses in action; and this classification was

[141] Volume 13, 5th ed, Butterworths, 2017, para 5-10.

[142] *Attorney-General of Hong Kong v. Nai-Keung* [1987] 1 W.L.R. 1339 and *Armstrong DLW GmbH v. Winnington Networks Lt*d [2013] Ch 156, 177.

[143] Holdsworth, The History of the Treatment of Choses in Action by the Common Law (1920) XXXIII Harvard Law Review, p. 1001.

[144] Ibid, p. 1002-1003.

[145] Ibid., p. 1011.

> sometimes recognised by the legislature when it provided that, though choses in action, their legal incidents should be in some respects varied".[146]

It follows that the concept of chose in action has been stretched to cover cases where there is no immediate right to bring an action. For example, a debt payable *in futuro* is a chose in action: "A chose in action is no less a chose in action because it is not immediately recoverable by action"[147]. The same applies to a share, where the entitlement to repayment of capital is realisable only in a winding up and where the declaration of dividends is at the discretion of the directors.

Other Personal Property?

Does English law recognise a residual category of other personal property that is not a chose in possession or a chose in action? In *Colonial Bank v. Whinney*[148] Fry LJ. stated categorically "all personal things are either in possession or in action. The law knows no *tertium quid* between the two".[149] On appeal to the House of Lords Lord Blackburn agreed:

> "I think it was hardly disputed that, in modern times, lawyers have accurately or inaccurately used the phrase "choses in action" as including all personal chattels that are not in possession".[150]

On the basis of these dicta, it has been accepted that the categories of choses in action and in possession are mutually exclusive, and that there is no intermediate category of property. Lord Blackburn cited no authority for his proposition so we propose to concentrate on the analysis of the dissenting judgment of Fry LJ. in the Court of Appeal that was upheld in the House of Lords.

Fry LJ. cites *Fulwood's Case*[151] and *Ryall v. Rolle*[152] in support of the binary distinction. The former case was concerned with an assignment of real property, and no personalty was involved. Coke reports that:

> "eight points were unanimously resolved by Sir Christopher Wray, Chief Justice, and the whole Court. 1. That whereas it was objected that in case of a sole corporation or body politic, be it created by charter or prescription, as bishop, parson, vicar, master of an hospital, &c. no (a) *chattel, either in action or possession, shall go in succession*, but the executors or administrators of the bishop, parson, &c. shall have them, no more than the heir of a private man can

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[146] Ibid.

[147] *Kwok Chi Leung Karl v. Commissioner of Estate Duty* [1988] 1 W.L.R. 1035, 1040 per Lord Oliver of Aylmerton.

[148] (1885) 30 Ch.D. 261.

[149] Ibid. p. 285.

[150] (1886) 11 App. Cas. 426, 440.

[151] (1590) 4 Co Rep 64b.

[152] (1749) 1 Atk 165.

> have them; for succession in a body politic is inheritance in case of a body private. But otherwise it is in case of a corporation …".[153].

From this Fry LJ. states that the references to chattels in action or in possession is "as if the two alternatives were the only possible ones".[154]

Ryall v. Rolle was a bankruptcy case concerned with advances on a conditional sale of goods without delivery. Lord Hardwicke had to consider whether any mortgage or conditional disposition or conveyance of any goods was within the proviso to 21 *Jac.* c. 19 ss 10-11. He stated:

> "1st , If the enacting clause extends to all goods in the custody of the bankrupt, whether his own originally or not, or whether it is to be restrained by the preamble, to goods only, that were originally the bankrupt's.
>
> Or, 2dly , Whether choses in action are within the clause?".[155]

Lord Hardwicke concluded that:

> "choses in action are properly within the description of goods and chattels in this clause".[156]

Fry LJ. states that Lord Hardwicke "speaks of personal property whether in possession or in action only, as equivalent to all kinds of personal property".[157]

Whether Coke CJ or Hardwicke LC actually intended to draw the distinction that Fry LJ. drew may be doubted. The question before the court of whether the law knew a *tertium quid* was not before the court and in *Ryall v. Rolle* the question was whether choses in action were within the scope of the reputed ownership clause. Doubtless neither judge referred to other personal property as such did not yet exist, and care must be taken applying inconclusive dicta to classes of assets that did not exist at the time the cases were decided.

Fry LJ. also relied on Volume 2 of Blackstone's Commentaries where he writes:

> "Property in chattels personal, may be either in *possession*; which is where a man hath not only the right to enjoy, but hath the actual enjoyment of, the thing: or else it is in *action*; where a man hath only a bare right, without any occupation or enjoyment".[158]

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[153] (1590) 4 Co Rep 64b-65a.

[154] (1885) 30 Ch.D. 285.

[155] 1 Atk 182.

[156] Ibid.

[157] (1885) 30 Ch.D. 286.

[158] Commentaries on the Laws of England, Book II, p. 389 (W Prest ed., 2016).

Although Blackstone adopts a binary taxonomy, the point may be made that these were the only forms of personal property existing at the time he wrote. It has also been argued that "Blackstone's argument had more to do with the nature and enforcement of property in tangible objects than the larger categorization of things in which property might exist".[159] This is predicated on the view that all 'chattels personal' "were tangible objects ultimately capable of physical possession"[160]. This certainly was not the case at the time that Blackstone wrote and the Commentaries instantiate debts, bonds, covenants and contracts.[161]

Fry LJ.'s categorisation was approved by Slesser LJ. in *Allgemeine Versicherungs-Gesellschaft Helvetia v. Administrator of German Property*[162] where the Lord Justice referred to:

> "The equally well known observations on this subject made by Fry L.J. in *Colonial Bank v. Whinney* and by Lord Blackburn in the same case clearly show how the two conditions of chose in action and chose in possession are antithetical and how there is no middle term".[163]

Fry LJ.'s exposition has been accepted by later writers as authoritative and is stated as representing the law by almost all modern writers on the subject.

Halsbury's Laws of England states "Property in chattels may be in possession or in action. It is in possession where the possessor has not only the right to enjoy, but the actual enjoyment of, the chattels, the chattels being in that case sometimes called 'corporeal chattels'. Where only a bare right to enjoy exists, the property is said to be 'in action', and the chattels are called 'incorporeal'"[164]. See also Goodeve, The Modern Law of Personal Property[165], Gleeson, Personal Property Law[166], Smith and Leslie, The Law of Assignment[167], Bridge, Personal Property Law[168] and Bridge et al, the Law of

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[159] D Fox, Cryptocurrencies in the Common Law of Property para 6.37 in D Fox and S Green, Cryptocurrencies in Public and Private Law, OUP, 2019.

[160] Ibid., para 6.36.

[161] Commentaries on the Laws of England, Book II, p. 397 (W Prest ed., OUP, 2016). Blackstone did not accept, unlike earlier writers, that actions in tort were choses in action, but nothing turns on this for the purposes of the argument.

[162] [1931] 1 K.B. 672.

[163] Ibid. p. 704.

[164] Vol. 80, 5th ed., 2013, para 806.

[165] W Maxwell & Son, 1887.

[166] FT Law and Tax, 1997, p. 30.

[167] 3rd ed., OUP, 2018, paras 2.53 and 2.54, although noting "that a limited number of exceptions to this traditional approach have developed in recent years". Fn 66 referencing this text refers to patents, and certain types of statutory licence or quota. All these rights arise from legislation and, as mentioned above, Parliament is able to expand the common law notion of property.

[168] 4th ed., OUP, 2015, pp. 13-14.

Personal Property[169]. Crossley Vaines' Personal Property[170] states that "All chattels personal are in possession or in action".[171]

The only clear dissent from Fry LJ.'s analysis is by Marshall, The Assignment of Choses in Action[172]. Marshall[173] Cites Co Litt 351 as authority for the proposition that a chose may be partly in possession and partly in action. Coke's commentary concerned chattels real which being land may be capable of possession despite their historical categorisation as personalty. This tells us nothing as to whether there is a third class of other personal property. Marshall's second example is a judgment debt which he argues is not solely a chose in action as it may be enforced by levying execution.[174] However, the fact that a judgment debt may be enforced by execution does not make it a chose in possession, although the fruits, if paid by cash, would be. Thirdly, Marshall refers to the rule that at common law a judgment debt owing to a feme sole did not become her husband's upon marriage but only on execution.[175] We derive no assistance from the examples cited by Marshall.

It should be noted that other personal property as a category has been accepted in different contexts. The Theft Act 1968 defines property as including "money and all other property, real or personal, including things in action *and other intangible property*" (emphasis added).[176] It follows that intangible property not constituting a chose in possession or action can be stolen.[177] A similar definition applies to the Fraud Act 2006[178], and the definition of "property" for the purposes of the Proceeds of Crime Act 2002 includes "all forms of property, real or personal, heritable or moveable and … things in action and other intangible or incorporeal property".[179]

Recent Developments

There have been a number of recent cases that have characterised as property rights under UK or EU statutory schemes that actually or implicitly eschew the distinction between choses in possession and choses in action. We will first refer to the cases and then consider whether the cases are capable of modifying the traditional understanding of the common law in *Colonial Bank v. Whinney*.

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169 2nd ed., Sweet & Maxwell, 2018, paras 1-15, 1-18 and 1-19.

170 4th ed., Butterworths, 1967.

171 Ibid., p. 11

172 Pitman, 1950.

173 Ibid, p. 2.

174 Ibid. pp. 2-3.

175 Ibid., p. 3.

176 Section 4(1).

177 *Attorney-General for Hong Kong v, Nai-Keung* [1987] 1 W.L.R. 1339, 1342-1343.

178 Section 5(2).

179 Section 326(9).

In *Re Celtic Extraction Ltd*[180] the Court of Appeal held that a waste management licence was property for the purposes of section 436 Insolvency Act 1986 notwithstanding that it had to be attached to land. Section 436 Insolvency Act 1986 states:

> ""property" includes money, goods, things in action, land and every description of property wherever situated and also obligations and every description of interest, whether present or future or vested or contingent, arising out of, or incidental to, property".

Morritt LJ said:

> "First, there must be a statutory framework conferring an entitlement on one who satisfies certain conditions even though there is some element of discretion exercisable within that framework: *Attorney General of Hong Kong v Nai-Keung* [1987] 1 WLR 1339; *In re Rae* [1995] BCC 102; *Commonwealth of Australia v WMC Resources Ltd* 194 CLR 1. This condition is satisfied by the provisions of sections 35(2), 36(3) and 43 of the Environmental Protection Act 1990. Second, the exemption must be transferable: *National Provincial Bank Ltd v Hastings Car Mart Ltd* [1965] AC 1175; *Attorney General of Hong Kong v Nai-Keung* [1987] 1 WLR 1339; *Commonwealth of Australia v WMC Resources Ltd* 194 CLR 1; *de Rothschild v Bell* [2000] 2 QB 33. This is satisfied by the terms of section 40(1) of the 1990 Act. The requirement that the transferor and transferee should join in the application demonstrates the transferability of the waste management licence even though it takes the form of a surrender and regrant by the agency. Third, the exemption or licence will have value: *Attorney General of Hong Kong v Nai-Keung* [1987] 1 WLR 1339; *In re Rae* [1995] BCC 102; Commonwealth of Australia v WMC Resources Ltd 194 CLR 1. In *In re Mineral Resources Ltd* [1999] 1 All ER 746, 753, Neuberger J commented that there is a market in waste management licences. There was no evidence to that effect in these cases and the agency did not agree that there was any market. However it was common ground that money does change hands as between transferor and transferee. Further the very substantial fees the agency is entitled to charge and in fact receives is a good indication of the substantial value a waste management licence possesses for the owners or occupants of the land to which it relates".[181]

In *Swift v. Dairywise Farms Ltd*[182] Jacob J. likewise held that a milk quota was property for the purposes of section 436 Insolvency Act 1986 notwithstanding that it had to be attached to land. Jacob J. concluded that the tests laid down by Morritt LJ in *Celtic Extraction* were all met.

We consider that although these cases are binding on the construction of section 436 Insolvency Act 1986 they do not compel a departure from the traditional taxonomy of the

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[180] [2001] Ch. 475.

[181] Ibid., p. 489.

[182] [2000] 1 W.L.R. 1177; affirmed [2001] 1 B.C.L.C. 672.

common law. In neither case was *Colonial Bank v. Whinney* cited by the court or counsel.

Of more relevance is *Armstrong DLW GmbH v Winnington Networks Ltd*[183]. The case concerned whether EU emissions allowances were property rights capable of being subject to a constructive trust. *Colonial Bank v. Whinney* was not cited and neither party argued that an emissions allowance was not property[184]. It follows that the discussion of property rights in Armstrong is *obiter dicta*.

Stephen Morris QC took as his starting point Lord Wilberforce's statement in *National Provincial Bank v. Ainsworth*[185]:

> "On any division, then, which is to be made between property rights on the one hand, and personal rights on the other hand, however broad or penumbral the separating band between these two kinds of rights may be, there can be little doubt where the wife's rights fall. Before a right or an interest can be admitted into the category of property, or of a right affecting property, it must be definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability".[186]

This is a negative and not a positive definition and was given in explaining why a deserted wife's rights to live in the conjugal home were personal and not proprietary in nature. Lord Wilberforce is therefore setting out a necessary but not a sufficient condition for a right to be considered as property. It therefore cannot be taken as a definition of what constitutes property under English law but of what is not property.

Applying the test laid down in *National Provincial Bank* the judge considered that an emissions allowance was property:

> "As a matter of substance, I do not consider that the holder of an EUA has a "right" which he or she can enforce by way of civil action. It is not a "right" (in the Hohfeldian sense) to which there is a correlative obligation vested in another person. It does not give the holder a "right" to emit CO2 in this sense. Rather it represents at most a permission (or liberty in the Hohfeldian sense) or an exemption from a prohibition or fine. But for the entitlement to the EUA, the holder would either be prohibited from emitting CO2 beyond a certain level or at least would be required to pay a fine if he did so. In this way, the holding of the EUA exempts the holder from the payment of that fine.
>
> An EUA is a creature of the ETS. As a matter of form an EUA exists only in electronic form. It is transferable automatically by electronic means within the registry system. Under the ETS legislation it is transferable under the terms of the ETS Directive. It has economic value, first because it can be used to avoid

[183] [2013] Ch. 156.

[184] Ibid. p. 170.

[185] [1965] A.C. 1175.

[186] Ibid., pp. 1247-48.

> a fine, and secondly, because there is an active market for trade in EUAs. The evidence before me establishes that substantial amounts of money change hands between a transferor and a transferee. Each EUA has its own unique number and can be located by reference to that number.
>
> Applying the test enunciated by Lord Wilberforce in *National Provincial Bank Ltd v Hastings Car Mart Ltd* [1965] AC 1175, in my judgment, an EUA is "property" at common law. It is definable, as being the sum total of rights and entitlements conferred on the holder pursuant to the ETS. 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".[187]

As for the precise type of property, Stephen Morris QC rejected the idea that the rights were a chose in possession, stating:

> "Whilst 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".[188]

The judge concluded that the emissions allowances were intangible property applying Morritt LJ.'s three part test in *Celtic Extraction*:

> "in my judgment, applying the three-fold test identified by Morritt LJ in In re *Celtic Extraction Ltd* [2001] Ch 475 leads to the conclusion that an EUA is certainly "property" and intangible property under the statutory definition there in place. First, there is, here, a statutory framework which confers an entitlement on the holder of an EUA to exemption from a fine. Secondly, the EUA is an exemption which is transferable, and expressly so, under the statutory framework. Thirdly the EUA is an exemption which has value".[189]

This was sufficient to dispose of the point.

However, *obiter*, Stephen Morris QC continued:

> "Whilst the cited case law concerned the meaning of "property" as specifically defined in various statutes, in my judgment, the reasoning of Morritt LJ applies equally to the characteristics of property at common law. Indeed, Morritt LJ himself relied upon *National Provincial Bank Ltd v Hastings Car Mart Ltd* [1965] AC 1175. Moreover the terms used in statutory definitions are themselves derived from common law concepts—for example in *In re Celtic Extraction Ltd*, the section 436 statutory definition refers to "things in action" and "every

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[187] *Armstrong DLW GmbH v Winnington Networks Ltd* [2013] Ch. 172-173.

[188] Ibid. p. 173.

[189] Ibid., p. 176.

> description of property"; the meaning of these terms, in turn, must be derived from the common law notion of "property". Further, applying the reasoning of Jacob J in the *Swift* case [2000] 1 WLR 1177, an EUA is also capable of fanning the subject matter of a trust and thus something in which equitable ownership can be held. There is a close analogy between the exemption conferred by milk quota and the exemption conferred by an EUA. Accordingly an EUA constitutes "property" and it is "intangible property".[190]

Stephen Morris QC added that an emission allowance was not a chose in action "in the narrow sense, as it cannot be claimed or enforced by action. However to the extent that the concept encompasses wider matters of property, then it could be so described".[191]

We consider that whilst authority on the nature of property under a statutory scheme, the case cannot be regarded in the same light under the common law. Firstly, both parties to the litigation agreed that the ETS constituted property. Secondly, the relevant earlier case law was not cited. Thirdly, *National Provincial Bank* was a wrong starting point for a definition of property. Fourthly, the fact that the various statutory definitions use common law concepts does not mean that those concepts have the same meaning in the context of the statutory scheme as in a statutory scheme it is the intention of Parliament that prevails. Fifthly, irrelevant case law was cited.[192]

Your Response Ltd v Datateam Business Media Ltd[193] concerned whether there could be a common law lien over a computer database. The Court of Appeal held that the concept of possession in the hitherto accepted sense had no meaning in relation to intangible property; that, therefore, since a common law lien consisted of a right to retain possession of goods, it was not possible for such a lien to exist over intangible property and that the fact that the transfer of the defendant's data to the claimant had resulted in a physical alteration to the claimant's systems did not mean that the electronic database could be regarded as tangible property. Therefore the claimant was not entitled to exercise a common law lien over the electronic database.

The leading judgment was given by Moore-Bick LJ. He observed that "In the protection of rights of personal property the common law historically drew a distinction between tangible and intangible property. Tangible property, usually referred to as chattels but sometimes as choses in possession, could be the subject of physical possession and thereby physical control, whereas intangible property, consisting of rights to benefits obtainable only by action (and thus known as choses in action), could not".[194] Moore-Bick LJ. added:

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[190] Ibid.

[191] Ibid.

[192] See e.g. *F.C. Jones & Sons v. Jones* [1997] Ch. 159 and *Lipkin Gorman v. Karpnale Ltd.* [1997] 2 A.C. 548 which both concerned money.

[193] [2015] Q.B. 41.

[194] Ibid, p. 48.

> "the claimant was unable to identify any case in which a right to exercise a lien over intangible property has been recognised. The reason is not difficult to find: whereas it is possible to transfer physical possession of tangible property by simple delivery, it is not possible to deal with intangible property in the same way. Although it is now possible by virtue of statutory provisions to transfer the legal title to choses in action, it is not possible to transfer possession of them in any physical sense".[195]

And:

> "Although an analogy can be drawn between control of a database and possession of a chattel, I am unable to accept Mr Cogley's argument. It is true that practical control goes hand in hand with possession, but in my view the two are not the same. Possession is concerned with the physical control of tangible objects; practical control is a broader concept, capable of extending to intangible assets and to things which the law would not regard as property at all".[196]

Moore-Bick LJ. referred to the taxonomy of property under English common law:

> "Mr Cogley's fourth argument was that, if the database cannot be regarded as a physical object for these purposes, it is a form of intangible property different from a chose in action. As such, it is capable of being possessed and wrongful interference with it will constitute the tort of conversion. I am unable to accept that. In *Colonial Bank v Whinney* 30 Ch D 261, the court had to decide whether shares in a joint stock company were to be classified as choses in action for the purposes of the proviso to section 44(iii) of the Bankruptcy Act 1883 (46 & 47 Vict c 52), by which property in the order or disposition of the bankrupt in his trade or business with the consent of the true owner, other than choses in action, was made available for the satisfaction of his debts. In the Court of Appeal the case provoked a great deal of learned debate about the history and nature of choses in action, much of it contrasting choses in action with choses in possession. In the end Cotton and Lindley LJJ held that shares were not choses in action for the purposes of the statute, although they both regarded them as a form of intangible personal property. Fry LJ dissented. In his view "all personal things are either in possession or in action. The law knows no *tertium quid* between the two". He therefore held that shares were choses in action.
>
> The view of Fry LJ was subsequently preferred by the House of Lords (1886) 11 App Cas 426. Lord Blackburn, who gave the principal speech, noted that there had always been a difference between personal property, which was capable of being stolen, taken, and carried away, and thus the subject of larceny at common law, and other kinds of personal property which could not be the subject of larceny or be taken in execution, because they could not be seized. In my view that decision makes it very difficult to accept that the common law recognises the existence of intangible property other than choses in action

[195] Ibid., p. 49.

[196] Ibid, p. 51.

> (apart from patents, which are subject to statutory classification), but even if it does, the decision in OBG Ltd v Allan [2008] AC 1 prevents us from holding that property of that kind is susceptible of possession so that wrongful interference can constitute the tort of conversion. It follows, in my view, that it is equally not susceptible to the exercise of a possessory lien".[197]

Floyd LJ. added a further reason for rejecting the argument that a database was intangible property capable of possession:

> "I would add only one observation in connection with the wider implications of Mr Cogley's submission that the electronic database was a type of intangible property which, unlike choses in action, was capable of possession and thus of being subject to a lien. 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. As to this, see most recently per Lord Walker of Gestingthorpe in *OBG Ltd v Allan* [2008] AC 1, para 275, where he is dealing with the appeal in *Douglas v Hello! Ltd* (No 3) and the discussion of this topic in Green & Randall, The Tort of Conversion (2009), pp 141–144. If Mr Cogley were right that the database could be possessed and could be the subject of a lien and that its possession could be withheld until payment and released or transferred on payment, one would be coming close to treating information as property".[198]

The most recent case is *The Queen on the application of Monarch Airlines Limited (in administration) v. Airport Coordination Limited*.[199] At issue was the ability of an airline in administration to exchange airline landing slots for less valuable slots so as to realise a profit for the benefit of the creditors in the administration. The case turned on the construction of Council Regulation (EEC) No 95/93 and no question of whether slots were property rights at common law arose.

[197] Ibid., p. 52.

[198] Ibid., p. 56.

[199] [2017] EWCA Civ 1892.

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