Case Note

Cryptocurrencies as Property: *Ruscoe and Moore v Cryptopia Limited (In Liquidation)* [2020] NZHC 728

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Abstract: On 8 April 2020, Gendall J, sitting in the High Court of New Zealand, decided *Ruscoe and Moore v Cryptopia Limited (In Liquidation)*, providing the most recent and authoritative common law statement in the world on whether a cryptocurrency is property. The case provides significant guidance for any jurisdiction, common or civil, faced with determining whether cyrptocurrencies are property. This note outlines the approach taken to 'the property question' by Gendall J, in four parts. Part I introduces the property question. Part II provides a brief overview of blockchain and the nature of cryptocurrencies. Part III briefly recounts Gendall J's reasons for the judgment concluding that cryptocurrencies are property. Part IV offers some brief reflections on the implications of the decision for property and for the relationship of property to contract.

I. Introduction

Property plays many roles in contemporary life. The difficulty with property as a concept, however, is identifying precisely when it exists; typically, the need to decide whether property exists arises when a human person (individual) or a legal person (such as a corporation) seeks to protect a relationship in respect of a thing—which can be tangible (such as land or chattels) or intangible (such as intellectual property, shares in a corporation, or money)—against the predations of others, including the state. When that happens, a person who feels that such a relationship is threatened by others seeks legal redress in support of the claim against interference. A court or legislature is thus faced with what we might call 'the property question', the need to resolve a novel dispute concerning the thing in question.[1]

How will a court or legislature respond? The answer 'depends on whether the law will recognize and enforce entitlements (and non-property on the refusal to do so), [and so] it follows that novel claims of property may be validated or rejected by the courts and the legislatures.'[2] Whatever the answer that a court or legislature provides at any given point in time, however, it is important to understand that '[p]roperty is not a static concept, but rather is in a constant state of flux. This fluidity is apparent when disputes over new forms of property erupt.'[3]

A high profile and increasingly significant invocation of the property question arises in respect of cryptocurrencies (such as Bitcoin). In 2016, the United States Bankruptcy Court, in *In re Hashfast Techs. L.L.C.*, dealt with Bitcoin in the bankruptcy context, but did not decide the

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[1] Bruce H Ziff, *Principles of Property Law* (Carswell, 6th ed, 2014) 51-57.
[2] ibid 51.
[3] ibid 51.

property question.[4] In 2018, the Supreme Court of (South) Korea[5] and the Shenzhen Court of International Arbitration[6] both found that Bitcoin was a form of property. In 2019, Thorley IJ, sitting in the Singapore International Commercial Court, in *B2C2 Ltd v Quoine Pte Ltd*,[7] held that Bitcoin does constitute a form of property. More recently, the High Court of Justice of England and Wales, in *AA v Persons Unknown, Re Bitcoin*,[8] agreed, relying for its conclusion upon the Singapore case. A flurry of scholarly literature accompanies this judicial treatment, with most scholars finding that cryptocurrencies can constitute a form of property, largely on the basis of an attributes approach.[9]

On 8 April, 2020, Gendall J, sitting in the High Court of New Zealand, decided *Ruscoe and Moore v Cryptopia Limited (In Liquidation)*[10] ('*Ruscoe and Moore*'); this decision provides the most current statement in the common law world on whether a cryptocurrency is property. Because this is the most recent and most authoritative common law statement, providing a comprehensive analysis of the issues on their merits, as opposed to interlocutory proceedings,[11] the case is of great significance for any jurisdiction which must answer the property question about cryptocurrencies. Of course, it will have persuasive impact in all common law jurisdictions, and while there are difficulties of precise comparison with civil law notions of property, the issue of the treatment of cryptocurrency as property is a live one globally. As such, *Ruscoe and Moore* makes an important and rigorous contribution to the jurisprudence beyond New Zealand.

This note outlines the approach taken to the property question by Gendall J in *Ruscoe and Moore*. It contains three further parts. Part II provides a brief overview of blockchain and the nature of cryptocurrencies. Part III briefly recounts the reasons for judgment of Gendall J for concluding that cryptocurrency is property. Part IV, our conclusion, offers some brief reflections on the implications of the decision for property and for the relationship of property to contract.

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[4] *Order on Motion for Partial Summary Judgment, Kasolas v Lowe* (*In re Hashfast Techs LLC*), No. 14-30725DM (Bankr. N.D. Cal. June 17, 2016); Amended Complaint at 5-6, *In re Hashfast Techs LLC*, No. 14-30725DM (Bankr. N.D. Cal. Feb. 17, 2015). See also Mary E Maginnis, 'Money for Nothing: The Treatment of Bitcoin in Section 550 Recovery Actions' (2017) 20 *University of Pennsylvania Journal of Business Law* 485.

[5] See Chan Sik Ahn, 'South Korea: Confiscation of Bitcoin criminal assets' (2018) *International Financial Law Review* <https://www.iflr.com/Article/3821031/South-Korea-Confiscation-of-Bitcoin-criminal-assets.html>.

[6] See Wolfie Zhou, 'Chinese Court Rules Bitcoin Should Be Protected as Property' (2018) *coindesk* <https://www.coindesk.com/chinese-arbitration-court-says-bitcoin-should-be-legally-protected-as-property>.

[7] *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 03.

[8] *AA v Persons Unknown, Re Bitcoin* [2019] EWHC 3556 (Comm).

[9] See Kelvin FK Low and Ernie GS Teo, 'Bitcoins and Other Cryptocurrencies as Property?' (2017) 9 *Law, Innovation and Technology* 235; David Fox and Sarah Green (eds), *Cryptocurrencies in Public and Private Law* (Oxford University Press, 2019); Renato Mangano, 'The Insolvency of Cryptocurrency Exchanges: Lessons from the BitGrail Case—Reification of Coins, Pari Passu Ranking, and Nominalism' (2019) 35 *Banking & Finance Law Review* 197; Israel Cedillo Lazcano, 'Book Review: Cryptocurrencies in Public and Private Law' (2020) 17 *SCRIPTed* 171; Roee Sarel. 'Your Bitcoin is Mine: What Does Law and Economics Have to Say about Property Rights in Cryptocurrencies?' (February 21, 2020) <https://ssrn.com/abstract=3542545>; Kelvin FK Low, 'Bitcoins as Property: Welcome Clarity?' (February 9, 2020) (forthcoming *Law Quarterly Review*) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3538956>; Chiara Zilioli, 'Crypto-Assets: Legal Characterisation and Challenges under Private Law (February 5, 2020) (forthcoming *European Law Review*) <https://ssrn.com/abstract=3532316>.

[10] [2020] NZHC 728.

[11] ibid [85]-[86], citing *Vorotyntseva v Money-4 Ltd* [2018] EWHC 2596 (Ch) (England & Wales) (ex parte freezing order); *Shair.com Global Digital Services Ltd v Arnold* 2018 BCSC 1512 (British Columbia) (ex parte preservation order).

II. Blockchain and Cryptocurrencies

To properly understand the property question about cryptocurrency, one must first understand the nature of cryptocurrency and its platform, the blockchain. A cryptocurrency is a digital currency which can be transferred directly from one party to another within a network without the requirement of a financial intermediary, such as a bank. In its purest form, cryptocurrency constitutes 'a peer-to-peer version of electronic cash'.[12] Its name derives from the fact that it is a non-fiat currency controlled and secured through cryptography (the science of protecting digital data or information through encryption).[13] As of October 2019, some 2,957 cryptocurrencies were being traded globally, with a total market capitalisation of USD $221 billion.[14]

A blockchain is the infrastructure which supports the exchange of cryptocurrencies. It is perhaps easiest to think of a blockchain as a digital form of 'ledger book' in which the cryptocurrency transactions of network participants are recorded.[15] This ledger book is decentralised and distributed across a network of 'nodes' (computers or servers), each of which contains a complete copy of the ledger.[16] Secure encryption arranges the transactions into time-stamped blocks and links them to one another, forming a chain of 'blocks'. Approval and addition of a transaction to the blockchain requires validation by the users on the network, known as 'miners'; this occurs through a complex, cryptographic verification process. Consensus must exist, otherwise the transaction will be rejected. In return for their efforts to ensure the integrity and functionality of the blockchain, miners receive a small reward in the form of a fractional amount of cryptocurrency for each transaction scrutinised. The blockchain is therefore a self-sustaining network which does not require or even use a trusted intermediary. It is, in short, a form of 'distributed ledger technology'.[17]

The original, and by far most well-known (sometimes infamous) cryptocurrency is Bitcoin. In order to function correctly, like all other cryptocurrencies, Bitcoin has no intrinsic commodity value and relies upon peer-to-peer networking within blockchains and the use of cryptography.[18] Its value is ascribed to it by its users. Introduced in 2009 by an anonymous developer known only as 'Satoshi Nakamoto',[19] it is by far the most 'valuable' cryptocurrency in existence today, though it is extremely volatile and experiences dramatic price fluctuations.[20] At the time of writing, a Bitcoin is valued at approximately AUD $11,700, compared to $7,000

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[12] Lam Pak Nian and David Lee Kuo Chuen, 'Introduction to Bitcoin' in David Lee Kuo Chen (ed), *Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data* (Academic Press, 2015) 8.

[13] See generally Arvind Matharu, *Understanding Cryptocurrencies: The Money of the Future* (Business Expert Press, 2018).

[14] Rick Bagshaw and Coin Rivet, 'Top 10 Cryptocurrencies by Market Capitalisation', *Yahoo! Finance* (9 October 2019) <https://finance.yahoo.com/news/top-10-cryptocurrencies-market-capitalisation-160046487.html>.

[15] For example, a transaction would be recorded on the blockchain in a manner such as this: 'Murray paid Reuben 10 bitcoins on March 2 at 4pm'. The parties would not, however, be named on the blockchain; they would be pseudonymous, identifiable only by their public or private 'keys', each being a string of alphanumeric characters which serves as a party's digital identity: Max Raskin, 'The Law and Legality of Smart Contracts' (2017) 1(2) *Georgetown Law and Technology Review* 305, 318.

[16] Michael Bacina, 'When Two Worlds Collide: Smart Contracts and the Australian Legal System' (2018) 21(8) *Journal of Internet Law* 15, 16.

[17] Imran Bashir, *Mastering Blockchain: Distributed Ledger Technology, Decetralization, and Smart Contracts Explained* (2nd ed, 2018) 31; Riccardo de Caria, 'The Legal Meaning of Smart Contracts' (2019) 6 *European Review of Private Law* 731, 732.

[18] Reuben Grinberg, 'Bitcoin: An Innovative Alternative Digital Currency' (2012) 4(1) *Hastings Science and Technology Law Journal* 159, 160.

[19] Rainer Böhme et al, 'Bitcoin: Economics, Technology, and Governance' (2015) 29(2) *Journal of Economic Perspectives* 213, 213.

[20] Michael Miller, *The Ultimate Guide to Bitcoin* (Que Publishing, 2014) 155.

at the same time in 2019.[21] By the time this article is in print, Bitcoin's value may just as easily have doubled or halved. More importantly, though, from a legal perspective, Bitcoin is not legal tender across much of the globe, including Australia.[22] As such, judicial recognition of cryptocurrencies as property, including Bitcoin, generates interesting and important legal questions, to which we now turn.

III. The New Zealand High Court Decision of Justice Gendall

Cryptopia Ltd ('Cryptopia') was a New Zealand based cryptocurrency exchange formed in 2014. By 2017, it was trading 900 types of cryptocurrency, the largest range in the world. In May 2019, Cryptopia went into liquidation, following a hack in January in which about NZD $30 million was stolen. Around 800,000 account holders from 231 countries had a positive cryptocurrency balance with the exchange at the time of liquidation. At that time, Cryptopia was trading 500 types of cryptocoin. The liquidators estimated the value of its holdings of cryptocurrency at NZD $170 million.

The liquidators applied for directions as to whether the cryptocurrency was an asset of the company under the *Companies Act 1993* (NZ), and as to whether it was held on trust for the accountholders. The dispute was between Cryptopia's creditors (and possibly shareholders), and the accountholders. If the cryptocurrency was held on trust for the accountholders, then trade and other creditors (in their capacity as such) were estimated to receive a dividend of less than 50 cents on the dollar, whereas, if the cryptocurrency was an asset of the company and not held on trust, its value would be divided *pari passu* between all creditors, including account holders, and the estimated dividend would then be over 85 cents on the dollar.

Cryptopia held digital wallets for each type of the cryptocurrency. The company maintained 'hot wallets', which were online and facilitated initial deposits by new account holders and for various other purposes, and 'cold wallets', which were offline and thus more secure, and in which about 75% of the accountholders' cryptocurrency holdings with Cryptopia were stored. As Cryptopia was an exchange, trades between Cryptopia users were dealt with by way of an internal ledger entry made by Cryptopia, and each trade did not affect the balances in the company's digital wallets. Each accountholder could transfer their cryptocurrency, either to a privately held digital wallet, or to another Cryptopia account, or to an account held externally on another cryptocurrency exchange.

Importantly, the movement of cryptocoins from one wallet to another required a public and a private key. The public key is analogous to the address of the wallet, with the private key serving as a password. A new private key was generated each time that cryptocurrency was transferred on the blockchain. However, accountholders did not have access to these private keys. Instead, because it performed the function of an exchange, these were held by Cryptopia. Justice Gendall emphasised that this was not a dispute between participants in a cryptocurrency system on a blockchain, such as Bitcoin, but solely a dispute between creditors and accountholders of a limited liability company that operated a cryptocurrency exchange facility.

[21] One of the more notable 'peaks' in value was in December 2017, when one Bitcoin was worth approximately AUD $25,000.

[22] The Reserve Bank of Australia has previously explained how cryptocurrencies like Bitcoins are merely digital tokens with no legislated or intrinsic value, and that they are currently not recognised as legal tender in Australia: Reserve Bank of Australia, 'Cryptocurrencies' (2020) <https://www.rba.gov.au/education/resources/explainers/cryptocurrencies.html>. Of course, the Australian Taxation Office has confirmed that gains made from the disposal of cryptocurrencies are taxable: Australian Taxation Office, 'Transacting with Cryptocurrency' (30 March 2020) <https://www.ato.gov.au/General/Gen/Tax-treatment-of-crypto-currencies-in-Australia---specifically-bitcoin/?page=2>.

On these facts, the issues under the application for directions were: (a) whether cryptocurrency is capable of being 'property' for the purposes of s 2 of the *Companies Act 1993* (NZ);[23] (b) whether cryptocurrency is capable of being held on trust; and (c) if cryptocurrency was capable of such characterisation, whether Cryptopia was a trustee of it in this case. While the liquidators' application for directions was the first stage in a two part proceeding to determine a scheme of distribution of the company's assets, it was crucial to decide these three preliminary issues because, if no trust were possible, the cryptocurrency would not be an asset available for distribution by the liquidator to creditors under s 253. On the importance of deciding these issues, Gendall J cited Sarah Green: "A crypto-coin can never become the subject matter of a trust or a proprietary right of security, nor will it be an asset in a deceased person's estate, unless it is first recognised as an object of property".[24]

The accountholders naturally argued that cryptocurrency was a form of intangible personal property within s 2 of the *Companies Act 1993* (NZ) at common law and that, in any event, it could be held on trust, and was here. Counsel for the accountholders argued that a finding that cryptocurrencies were not property would have 'profound and unsatisfactory implications for New Zealand's law, including insolvency law, succession law, law of restitution and commercial law generally'.[25] Counsel for the creditors argued that cryptocurrency was not property capable of forming the subject matter of a trust, and that any recognition as such was a matter for the legislature.

Justice Gendall considered the two most relevant common law authorities: the recent Singapore decision in *Quoine Pte Ltd v B2C2 Ltd*[26] and the United Kingdom case of *AA v Persons Unknown, Re Bitcoin*.[27] The Singapore case concerned Quoine, a cryptocurrency exchange. The dispute there involved one of the traders on the platform, BC2, which argued that Quoine had wrongly reversed a trade, in breach of contract and breach of trust. The trade which was reversed had come about by an error in the pre-programmed 'smart contract'. The error, before its reversal, favoured BC2. The Court had to decide whether or not the cryptocurrency was held on trust by Quoine for BC2. Quoine conceded that cryptocurrency was 'property' and Thorley IJ agreed with that concession, stating that while it was not legal tender, it had the 'fundamental characteristic of intangible property as being an identifiable thing of value'.[28] Yet, without any analysis, the judge asserted that cryptocurrency met all four requirements of

[23] Section 2 of the *Companies Act 1993* (NZ) confers custody and control over a company's 'assets' to the liquidator (s 248(1)), as well as the primary duty of taking into possession, realising and distributing the assets or their proceeds (s 253). It was common ground that cryptocurrency was an 'asset' within these provisions, but 'asset' was not specifically defined in the Act. For a limited purpose, s 129(2) provided that 'assets includes property of any kind, whether tangible or intangible'. Section 2 of the Act defines 'property' widely as 'property of every kind whether tangible or intangible, real or personal, corporeal or incorporeal, and includes rights, interests, and claims of every kind in relation to property however they arise'. The Supreme Court of New Zealand has accepted that this definition includes 'money', though it is not expressly referenced: see *McIntosh v Fisk* [2017] NZSC 78, [55].

[24] *Ruscoe and Moore* [2020] NZHC 728, [63], citing Sarah Green, 'Cryptocurrencies in the Common Law of Property' in David Fox and Sarah Green (eds) *Cryptocurrencies in Public and Private Law* (Oxford University Press, 2019) 141. Justice Gendall also cited to similar effect (at [64]) the UK Jurisdiction Taskforce, *Legal Statement on Cryptoassets and Smart Contracts* (LawTech Delivery Panel, 2019) <https://technation.io/news/uk-takes-significant-step-in-legal-certainty-for-smart-contracts-and-cryptocurrencies/> ([35]-[37]).

[25] *Ruscoe and Moore* [2020] NZHC 728, [66].

[26] [2019] SGHC(I) 3; [2020] SGCA(I) 2.

[27] [2019] EWHC 3556 (Comm).

[28] [2019] SGHC(I) 3, [142] (Thorley IJ), cited in *Ruscoe and Moore* [2020] NZHC 728, [80].

property identified in *National Provincial Bank v Ainsworth*.[29] He went on to find there was a breach of contract and breach of trust. The Court of Appeal (International) differed from Thorley IJ on the issue of whether or not there was a trust on the facts. In relation to the property question, the Court did not think it necessary to come to a final position, though Menon CJ, having reviewed previous case law and academic literature,[30] wrote: "there may be much to commend the view that cryptocurrencies should be capable of assimilation into the general concepts of property. There are, however, different questions as to the type of property that is involved."[31]

In *AA v Persons Unknown*, Bryan J concluded that cryptocurrencies were property. There, hackers, 'persons unknown' (the first defendants), installed malware on the applicant's computer and then sought a ransom, to be paid in Bitcoin. The ransom was paid, and was transferred to a public address held by a cryptocurrency exchange (operated by the third and fourth defendants). The applicant sought, *inter alia*, an interim proprietary injunction over the Bitcoin, which had an estimated value of USD $910,000. Justice Bryan relied upon the *Legal Statement on Cryptoassets and Smart Contracts*, drawn up by leading barristers in England,[32] not only for their description of the meaning of cryptocurrency, which was also used by Gendall J, but also for the way in which it dealt with the distinction between choses in action and choses in possession (see below for discussion of this issue). Nevertheless, in *Cryptopia*, Gendall J dismissed this case in one paragraph, noting that not only was the applicant the only party whose counsel appeared and filed submissions, but also that apart from the *Legal Statement*, no other argument was addressed to the court on the property question.[33]

Of course, as we note in Part I, the meaning of 'property', as well as being dynamic, is also contextual, and must take account of any statutory definition and context. Justice Gendall therefore referred to a number of well-known contexts in which property has been found to exist, though framing these references in terms of equity, given that the context of *Cryptopia* was whether or not there was a trust. Justice Gendall noted, though, that the characterisation of property for the purposes of equity should be no less broad than statutory or common law contexts.[34] As examples, Gendall J pointed to choses in action, and even non-enforceable debt claims;[35] copyright (which is statutory in New Zealand)[36]; shares (whether or not restricted as to transferability);[37] licences and quotas (for example milk supply quotas, mineral exploration licences,[38] and carbon credits)[39]; electronic payments through the banking system, which can be the subject of tracing; and a trustee's right of indemnity conferring a proprietary right in trust assets.[40] Justice Gendall nonetheless recognised that many if not all of these intangible assets do not fit within the category of choses in action.

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[29] *National Provincial Bank v Ainsworth* [1965] 1 AC 1175, 1248 (Lord Wilberforce).
[30] [2020] SGCA(I) 2, [137]-[143] (Menon CJ).
[31] ibid [144] (Menon CJ), cited in *Ruscoe and Moore* [2020] NZHC 728, [83].
[32] UK Jurisdiction Taskforce (n 24).
[33] *Ruscoe and Moore* [2020] NZHC 728, [88].
[34] ibid [89], citing *Armstrong DLW GmbH v Winnington Networks Ltd* [2012] EWHC 10 (Ch), [2013] Ch 156, 176 [59].
[35] *Gwinnutt v George* [2019] EWCA Civ 656 (barrister's unenforceable fee claim was part of his bankruptcy estate), cited in *Ruscoe and Moore* [2020] NZHC 728, [89].
[36] *Copyright Act 1994* (NZ) s 14.
[37] *Money Markets International Stockbrokers Ltd v London Stock Exchange Ltd* [2002]1 WLR 1150 (Cth).
[38] *Swift v Dairywise Farms Ltd* [2000] 1 WLR 1177, 1185 (milk quota); *Commonwealth of Australia v WMC Resources Ltd* (1998) 194 CLR 1 (petroleum exploration licences).
[39] *Armstrong DLW GmbH v Winnington Networks Ltd* [2012] EWHC 10(Ch), [2013] Ch 156.
[40] *Carter Holt Harvey Woodproducts Australia Pty Ltd v Commonwealth* [2019] HCA 20, (2019) 368 ALR 390.

Justice Gendall also considered the New Zealand authorities, two recent cases which found digital information to be property. *Dixon v R*[41] involved downloading a digital copy of CCTV footage without permission. The Supreme Court of New Zealand held that the data was within the definition of property found in s 2 of the *Crimes Act 1961* (NZ). And in *Henderson v Walker*, the spirit of *Dixon* was approved in a case where the plaintiff alleged conversion and other claims in respect of distribution of the plaintiff's private emails to third parties. In principle, Thomas J held that the emails and other computer data could be subject to conversion. Justice Gendall therefore concluded that this could be extended to obtaining and using a private key permanently to deprive the rightful possessor of that cryptocurrency.[42]

Justice Gendall approached the property question in four steps: (i) the four indicia of property set out by Lord Wilberforce in *National Provincial Bank v Ainsworth*;[43] (ii) whether the cryptocurrency was a chose in action or a chose in possession; (iii) whether information can be property; and, (iv) the limitations imposed by public policy. We consider each in turn.

A. *National Provincial Bank v Ainsworth* Indicia

Lord Wilberforce, in *National Provincial Bank v Ainsworth*,[44] wrote that:

> 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.[45]

Most common law courts treat these four indicia as influential in cases at the boundary of the scope of property. Although Gendall J gave short shrift to Bryan J's judgment in *AA v Persons Unknown*, the latter did at least advert to the *Ainsworth* indicia, albeit by way of assertion that each had been met, rather than by analysis. In many cases, the conclusion that an asset falls within the meaning of property has been by way of reasoning by analogy to existing forms of property, looking for shared attributes. There is usually little if any analysis as to whether or not such an asset bears the characteristics of a proprietary right. That is partly a reflection of how the common law, and in particular the common law of property, proceeds by analogy within the cautious confines of the *numerus clausus*. It is therefore refreshing to find Gendall J undertake a comprehensive application of each of the four indicia to the transactions of a cryptocurrency exchange.

That said, it is notorious that the *Ainsworth* indicia tend to be circular and self-fulfilling,[46] overlapping to some degree. Nevertheless, they seem to provide a useful basis for the consideration of novel candidates for acceptance into the class of property. And, in any case, Gendall J did not rely solely on the indicia; instead, in concluding that they had all been 'clearly met', Gendall J reasoned by analogy from other case law and recognised types of intangible property, as well as the UK *Legal Statement*. We consider Gendall J's analysis of each indicia in turn.

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[41] *Dixon v R* [2015] NZSC 147.
[42] *Ruscoe and Moore* [2020] NZHC 728, [93]. Justice Gendall also noted (at [94]) that cryptocurrency seemed assumed to be within the wide statutory definition of property under the *Criminal Proceeds (Recovery) Act 2009* (NZ), s 5, for the purpose of forfeiture, in *Commissioner of Police v Rowland* [2019] NZC 3314.
[43] *National Provincial Bank v Ainsworth* [1965] 1 AC 1175.
[44] ibid.
[45] ibid 1247-48 (Lord Wilberforce).
[46] Low and Teo (n 9).

In relation to whether cryptocurrency constitutes an identifiable subject matter, Gendall J compared the identifiability provided by cryptocurrency in a public address (albeit on a distributed ledger) to balances held in a numbered bank account. Indeed, for Gendall J, the public key might make cryptocurrency more identifiable than some other forms of recognised property, such as copyright.

Similarly, Gendall J found that an asset is identifiable by third parties where an owner has sufficient control over the asset. In terms of the 'liberal triad' of property—the rights of use, excludability, and alienability—Gendall J emphasised that the right to exclude others was a better indicator of proprietary status than the right to use or exploit the asset. In the case of cryptocurrency, the asset was identified through the public key, and the requisite control over it, and thereby the ability to exclude others, was achieved through the private key, which he likened to a PIN. This was because the private key could not be re-used, and a new key was created after each transfer, thereby preventing a 'double spend' of the currency data. Others have commented upon this feature,[47] arguing that the overriding proprietary feature of Bitcoin and other cryptocurrencies is the right to have one's public address appear as the last entry in the blockchain for that cryptocurrency. This formulation addresses the fact that a new private key is created for each transfer.

The third indicia, whether the asset is capable of assumption by third parties, reveals a degree of circularity amongst the four indicia; in other words, it is fundamental to a proprietary right that it will affect third parties to a bilateral arrangement. This seems to be a consequence, rather than a prerequisite, of property. Nonetheless, Gendall J found that this feature was present because there clearly was a market in cryptocurrency, and the rights of cryptocurrency owners were respected and subject to remedies for interference.[48]

Finally, Gendall J found that the degree of permanence or stability added little to the other three indicia. For Gendall J, some assets, such as a ticket to a short performance or a sporting match, may have little permanence and nonetheless be property rights. Others, such as funds in a bank account or cryptocurrencies, may have a short duration due to replacement with another equivalent asset. Justice Gendall also noted that the nature of the blockchain and the distributed ledger gave stability and permanence to cryptocoin prior to being spent. And while cryptocurrencies may be hacked or private keys wrongfully used, those risks of fraud or criminal behaviour do not detract from the inherent permanence or stability of the asset.

Justice Gendall therefore concluded that cryptocurrency satisfies the *Ainsworth* indicia:

> They are a type of intangible property as a result of the combination of three interdependent features. They obtain their definition as a result of the public key recording the unit of currency. The control and stability necessary to ownership and for creating a market in the coins are provided by the other two features - the private key attached to the corresponding public key and the generation of a fresh private key upon the transfer of the relevant coin.[49]

[47] ibid, cited in *Quoine Pte Ltd v B2C2 Ltd* [2020] SGCA(I) 2, [142] (Menon CJ).
[48] *Ruscoe and Moore* [2020] NZHC 728, [120], citing *Attorney-General of Hong Kong v Nai-Keung* [1987]1 WLR 1339 (PC), 1342 (Lord Bridge) (theft of export quota).
[49] *Ruscoe and Moore* [2020] NZHC 728, [120].

Having so concluded, Gendall J turned attention to whether cryptocurrency could be analogised to a chose in action or a chose in possession.

B. Chose in Action or Chose in Possession

While significant scholarly commentary posits that an asset may not constitute a new form of property if it cannot be categorised as a chose in action or a chose in possession, there are clearly exceptions, most notably in the case of intellectual property (although some of these types of property may be justified on the basis that they are statutory). Justice Gendall, though, made short work of this objection, dismissing it as 'a red herring'. As he had earlier observed, many other forms of intangible property he had listed—licences and quotas, and shares—are not choses in action, in that they are recognised other than through and by reason of enforcement of rights in respect of them.[50] Justice Gendall found that it would be ironic if an asset with more proprietary features than a simple debt is not deemed to be property.

The dictum of Fry LJ in *Colonial Bank v Whinney*,[51] that the law 'knows no tertium quid', has been frequently cited and discussed as the font of this bifurcated choice. Justice Gendall dismissed this debate as being 'not about the limits of what can be recognised as "property" but simply about the number of categories of "property" one needs'.[52] Justice Gendall interpreted Fry LJ not to mean a narrow view of 'property', but rather simply wanting to push all types into one of the two categories. For Gendall J, that dictum did not prevent cryptocurrencies being treated as property; at most, it might mean they would have to be classified as a chose in action.[53] This conclusion is consistent with that of the UK *Legal Statement*.[54]

C. Information is Not Property

In *Your Response Ltd v Datateam Business Media Ltd*,[55] the English Court of Appeal held that a database of customers was information and not property, so that a business contracted to maintain it could not claim a lien over it for their fees. Justice Gendall dismissed this case as having been decided on its facts, for three reasons. First, cryptocurrencies are more than mere 'information'.[56] Instead, the system of private keys analogous to a PIN for a bank account meant that cryptocurrency could be traded; it was more than a mere record of information. Secondly, contracts, too, could be treated as property, not due to the words or the promise, but because equity recognised a unique relationship between the parties and provided a system for transfer of contractual rights. Finally, the view that information was not property because it was 'open to all who have eyes to read and ears to hear'[57] did not apply to cryptocurrency, which could not be infinitely duplicated due to the combination of unique public keys and the inability to transfer without access to the corresponding private key.

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[50] See Michael G Bridge et al, *Law of Personal Property* (Sweet & Maxwell, 2nd ed, 2018) [8-006], emphasising the 'panoply of remedies available to a modern court'; see also [1-018].
[51] *Colonial Bank v Whinney* (1885) 30 ChD 261, 285 (Fry J) (CA).
[52] *Ruscoe and Moore* [2020] NZHC 728, [123].
[53] ibid [124].
[54] ibid [85]. See *Quoine Pte Ltd v B2C2 Ltd* [2020] SGCA(I) 2, [143]-[144] (Menon CJ). See also Bridge et al (n 50) [7-128]. The dictum of Fry LJ is still seen as presenting difficulty for a wider category of intangible property beyond choses in action, see *Your Response Ltd v Datateam Business Media Ltd* [2014] EWCA Civ 281, [26] (Moore-Bick LJ).
[55] *Your Response Ltd v Datateam Business Media Ltd* [2014] EWCA Civ 281.
[56] See also in *Commissioner of Police v Rowland* [2019] NZHC 3314.
[57] *Boardman v Phipps* [1967] 2 AC 46, 127 (Lord Upjohn) (HL).

D. Public Policy

While the parties and earlier cases did not raise it, Gendall J set up, only to dismiss, the argument that cryptocurrency was used for criminal activity, thus violating public policy and rendering it incapable of constituting property. The same could be said about the existing banking system. And more importantly, cryptocurrency was being adopted by the traditional banking sector, with legitimate commercial developments potentially hindered by a failure of the general law to recognise cryptoassets as property. Of course, Gendall J recognised that this may signal a need for more formal regulation of cryptocurrencies.

Based upon each of the grounds canvassed in the judgment, Gendall J found that cryptocurrencies are 'property' within s 2 of the *Companies Act 1993* (NZ) and 'also probably more generally'. Justice Gendall also concluded, without further discussion, that being property, cryptocurrency was therefore capable of forming the subject matter of a trust. The balance of Gendall J's judgment focused on whether, on the facts of this case, including the terms and conditions of the exchange, Cryptopia was a trustee of the cryptocurrencies at dispute. That issue, turning largely on the requisite certainty of intention to create a trust, is not dealt with in this note. Instead, we turn to some brief reflections on the implications of Gendall J's judgment for property and for the interplay between property and contract.

IV. Concluding Reflections

A. The Nature of Property

So often, in the judicial treatment of the property question, one finds the adoption of one of two approaches, or a hybrid of them. The first approach involves the institutional role of the law in resolving such novel disputes. A court, in resolving a dispute that raises the property question, typically attempts to look for some external indicator that property in fact exists in a given case (such as a point of comparison), rather than understanding that it is the court's answer to the question, in that very case, that will decide whether there is property in respect of the thing in question. Thus, rather than understand that the outcome to the dispute is what determines whether there is property in the thing in question, judges look at the thing in question and its relationship to the parties in order to determine whether the thing, the relationship, or both, reveal the existence of property. When judges do this, they fail to engage conceptually with property, and look instead at whether the thing or relationship in question looks like other forms of property. Bruce Ziff calls this the 'attributes approach' to resolving disputes about novel forms of property; the focus of 'the enquiry hinges on whether the right being asserted looks like property: one searches for a strong family resemblance'.[58]

To some extent, Gendall J in *Ruscoe and Moore*, begins by taking this attributes approach to the property question raised by cryptocurrency. The *Ainsworth* indicia, Fry LJ's attempt to force all new forms of property into either the chose in action or chose in possession boxes, and the attempt to characterise all new novel things as either information or property, but not both, represent a form of the attributes approach. But Gendall J deftly avoids pinning everything on any such approach. Instead, he understands that there is something deeper, something more profound, about finding property in a novel thing or relationship, and that attributes alone cannot identify that deeper profundity. Justice Gendall's is an important lesson in finding a novel form of property for that reason alone. And yet he goes further.

Once one judge has determined that property does exist in a given thing, as Gendall J did here, subsequent judges and legislators can often fall into the second misunderstanding about

[58] Ziff (n 1) 52-53 (footnotes omitted).

property: to treat the earlier determination as setting in stone the existence of property for all future occurrences of similar things or relationships. In doing so, there is a failure to understand that property is not a static, but a fluid concept, one that can, and often does change as circumstances change. That is true not only in respect of the way in which the concept is applied to novel disputes but also in the way it might have been applied in the past to given things or relationships. In other words, an answer given at any one point in time cannot be determinative of what property is, or of how it might apply to any given circumstance, even one that seemed to have been settled at some point in the past.

If property is about relationship—a shorthand way of saying that it is about rights of use, excludability, and alienability[59]—then what matters in any given case is whether the relevant relationship exists, at that point in time, in respect of the thing or relationship in question. Only then can a court or a legislature conclude that property is present. Ziff calls this approach 'functional'—it involves '[l]ook[ing]…at the policy factors at play'. It takes account of how property, as a tool of social life, should be used. This approach recognizes that property is not an acontextual entity that demands conceptual purity, but a purposive concept, to be used to meet social needs.'[60]

Of course, this is not to say that there are no aspects of the world where it is necessary to provide greater certainty as to when property does and does not exist. This is true of property in land. Over 1,000 years have passed since feudalism and the twin pillars of tenure and estates first began to provide a set of answers to disputes over possession and ownership of land, worked out in the freehold estates, supplemented over time by incorporeal hereditaments, the leasehold estate, and equitable refinements; all of which was crystallised in the contemporary *numerus clausus* of estates and interests in land.[61]

But there are a great many things, largely personal or incorporeal, about which the property question has either not been asked and answered, or about which whatever answer might currently exist there remains a good deal of contingency.[62] Thus, it is by no means clear whether and why property might exist in cases of: cultural appropriation;[63] university degrees;[64] government-issued licences to fish;[65] domain names;[66] one's personality or

[59] For a full explication of this shorthand, see Paul Babie, 'Sovereignty as Governance: An Organising Theme for Australian Property Law' (2013) 36 *UNSW Law Journal* 1075; Paul Babie, 'The Spatial: A Forgotten Dimension of Property' (2013) 50 *San Diego Law Review* 323.
[60] Ziff (n 1) 53 (footnotes omitted).
[61] The classic treatment of the *numerus clausus* is Bernard H Rudden, 'Economic Theory v Property Law: The *Numerus Clausus* Problem' in John Bell and John Eekelaar (eds), *Oxford Essays in Jurisprudence, Third Series* (Clarendon Press, 1987) 239-63. See, more recently, Thomas W Merrill & Henry A Smith, 'Optimal Standardization in the Law of Property: The *Numerus Clausus* Principle' (2000) 110 *Yale Law Journal* 1; Henry Hansmann and Reinier Kraakman, 'Property, Contract, and Verification: The *Numerus Clausus* Problem and the Divisibility of Rights' (2002) 31 *Journal of Legal Studies* S373; Yun-chien Chang & Henry E Smith, 'The Numerus Clausus Principle, Property Customs, and the Emergence of New Property Forms' (2015) 100 *Iowa Law Review* 2275. Some 'border' disputes between contract and property exist in respect of the licence: see *Ashburn Anstalt v Arnold* [1989] Ch 1; Jonathan Hill, 'Leases, Licences and Third Parties' (1988) 51 *The Modern Law Review* 226.
[62] Parts of the following list (with case citations) are drawn from Ziff (n 1) 52-53, nn 265-77, 285, and 287.
[63] Ziff (n 1) 54-6. See also Bruce Ziff and Pratima V Rao (eds), *Borrowed Power: Essays on Cultural Appropriation* (Rutgers University Press, 1997); Michael F Brown, *Who Owns Native Culture?* (Harvard University Press, 2003).
[64] See *Graham v Graham*, 574 P2d 75 (1978).
[65] See *Saulnier v Royal Bank of Canada* [2008] 3 SCR 166.
[66] See *Tucows.Com Co v Lojas Renner SA*, 2011 ONCA 548.

celebrity;[67] patents over such things as mice;[68] genetically modified plant cells;[69] isolated human genes[70] or other genetic material;[71] human pre-embryos;[72] cells extracted from a spleen;[73] the right of next-of-kin to a human brain in paraffin;[74] the distinctive sound of a singer's voice;[75] an entertainment spectacle;[76] and, 'know how'.[77]

This is why Gendall J's judgment in *Ruscoe and Moore* becomes so important, providing a novel way of looking at when or when not property may exist, a novel approach to the property question. For in raising, if only to dismiss, the public policy issue, Gendall J clearly understands that property is about so much more than mere attributes that may be analogised to existing forms of property. Justice Gendall understands, instead, that property is a central tool in social life, and that it must be recognised by law—by the courts and by legislatures—in order to meet social needs. Justice Gendall understands that cryptocurrency is meeting a socio-economic need in the financial sector, one that requires the stability and certainty (to borrow from Lord Wilberforce, albeit in a novel way!) that only property can provide. A narrow attributes approach, reasoning by analogy from what the law already recognises as property, may fail to provide answers as to what ought to be property. In short, Gendall J provides a new roadmap for making use of the functional approach to finding novel forms of property, one that can be used not only in relation to cryptocurrency, but also in respect of other novel forms of personal intangible property.[78]

B. The Interplay of Property and Contract

One might wonder why it matters that a cryptocurrency be treated as property. We know, on the basis of *Ruscoe and Moore*, that one reason is that it is necessary for a trust of cryptocurrency to exist that the cryptocurrency itself must be property. There is a wider reason. Property has implications for the operation of contract; or, put another way, there is an interplay between property and contract. Here, we briefly identify two dimensions of this interplay.

First, irrespective of whether cryptocurrency is property, the question arises as to whether it may constitute valuable consideration substantiating a contract. For an agreement to be binding as a contract, it must involve an exchange of something valuable in the eyes of the law.[79] Of course, the bar for legal sufficiency is not high; consideration need only be sufficient, not adequate, and a peppercorn (or chocolate wrapper) can satisfy the test.[80] But as discussed in our Part II, cryptocurrency is not legal tender and derives its value not from government, but from its users. The law of contract is indifferent to the subjective value assigned by the parties to the things they are exchanging. The consideration doctrine flatly dismisses the motives

[67] See *Athans v Canadian Adventure Camps Ltd* (1977) 17 OR (2d) 425.
[68] See *Harvard College v Canada (Commissioner of Patents)* [2002] 4 SCR 45.
[69] See *Monsanto Inc v Schmeiser* [2004] 1 SCR 902.
[70] See *Association for Molecular Pathology v Myriad Genetics*, 569 US 576 (2013); *D'Arcy v Myriad Genetics Inc* (2015) 258 CLR 334.
[71] On the ownership of human sperm, for instance, see *Re Leith Dorene Patteson*, [2016] QSC 104; *Chapman v South Eastern Sydney Local Health District* [2018] NSWSC 1231; *Re Cresswell* [2018] QSC 142.
[72] See *Davis v Davis* 842 SW2d 588 (1992).
[73] See *Moore v The Regents of the University of California* 793 P 2d 479 (1990).
[74] See *Dobson v North Tyneside Health Authority* [1997] 1 WLR 596.
[75] See *Midler v Ford Motor Co*, 849 F2d 460 (1988).
[76] See *Victoria Park Racing & Recreation Grounds Ltd v Taylor* (1937) 58 CLR 479.
[77] See *Roth v R*, 2007 FCA 38.
[78] This finds support in Stuart Hoegner (ed), *The Law of Bitcoin* (iUniverse, 2015) II.1.1.4.
[79] *Currie v Misa* (1875) LR 10 Ex 153, 162 (Lush J); *Australian Woollen Mills Pty Ltd v Commonwealth* (1954) 92 CLR 424, 456-57 (the Court).
[80] *Chappell & Co Ltd v Nestle Co Ltd* [1960] AC 87, 114-15 (Lord Somervell).

underlying a bargain.[81] Something can be legal property, yet not be consideration to support a contract. A child's preschool artwork, for instance, is a chose in possession but will almost certainly, at the time of creation, have no legal value; rather, it will have only strong sentimental value to the child's parents.[82] Applying similar logic, given a cryptocurrency's lack of intrinsic value, some scholars have queried whether they can be traded through contract.[83] The Court in *Quoine Pte Ltd v B2C2 Ltd*,[84] however, concluded that contracts existed in what was effectively an exchange of Bitcoin for another cryptocurrency, Ethereum (described by the Court as contracts between 'the buyers and the sellers').[85] If cryptocurrency can be valued by reference to a fiat currency, then one would think it has value in the eyes of the law;[86] even if 'inherent value is difficult to ascertain', volatility is not an issue.[87]

There is no doubt that cryptocurrency exchanges, commonly facilitated through autonomous 'smart contracts', involve an exchange of obligations sufficient to satisfy the bargain requirement of consideration.[88] What is perhaps less clear is whether the subject of those exchanges (i.e. cryptocurrency) can amount to a sufficient legal benefit or detriment, as required by established common law authority.[89] This point is certainly debatable, though the recent case law lends support for the idea that cryptocurrency is legal consideration.

More importantly, though, is the effect of finding cryptocurrency to be property in respect of remedies available for breach of contract, in particular, specific performance.[90] The question arises, in other words, as to the circumstances in which a court will order that a party perform a contractual obligation involving the transfer of (or a dealing with) a cryptocurrency. Specific performance is an equitable and discretionary remedy through which the court orders a party to perform a contract.[91] Whether specific performance should be awarded in a given case depends on a variety of factors, including whether supervision is required,[92] whether there was any delay in seeking the order,[93] and whether there would be any hardship to the defendant in

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[81] *Eastwood v Kenyon* (1840) 11 Ad & E 438; 113 ER 482.

[82] Robert Chambers, *An Introduction to Property Law in Australia* (LBC Information Services, 2001) 11.

[83] See, eg, Nishith Pathak and Anurag Bhandari, *IoT, AI, and Blockchain for .NET* (Apress, 2018) 195:

> [Bitcoin] is not backed by tangible value, but rather intangible value, i.e., trust. It has value just because a member of the group believes it has value and Bitcoin should be used to exchange in lieu of a good just like any currency. The only difference is a normal currency's trust comes from government backing. Out here, it is from the people.

See also Nick Furneaux, *Investigating Cryptocurrencies* (Wiley, 2018) 4 ('How can you trade something that doesn't really exist, such as a Bitcoin?').

[84] *Quoine Pte Ltd v B2C2 Ltd* [2020] SGCA(I) 2.

[85] ibid [50] (Menon CJ) (delivering the judgment of the majority) (approving the judgment at first instance: see [2019] SGHC(I) 3, [131] (Simon Thorley IJ)).

[86] *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 3, [142] (Simon Thorley IJ) ('an identifiable thing of value').

[87] *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 3, [255] (Simon Thorley IJ) ('Courts are accustomed to assess[ing] damages in relation to volatile assets [similar to Bitcoin]').

[88] See, eg, Mark Giancaspro, 'The Consideration Myth About Smart Contracts' (2020) 1(1) *ANU Journal of Law and Technology* 35; Eliza Mik, 'Smart Contracts: A Requiem' (2019) 36(1) *Journal of Contract Law* 70, 81-82.

[89] *Currie v Misa* (1875) LR 10 Ex 153.

[90] Compare Jeannie Paterson, 'Smart Contracts, AI Informed Automation and Specific Performance: Considering the Reflexive Potential of Equity' (Conference Paper, Equity and Trusts in the Digital Economy Conference, University of Queensland, 20 February 2020).

[91] JD Heydon, *Heydon on Contract* (Thomson Reuters, 2019) 991 [27.10].

[92] *JC Williamson Ltd v Lukey* (1931) 45 CLR 282.

[93] *Fitzgerald v Masters* (1956) 95 CLR 420.

making the order.[94] As a general rule, the order is only made if damages are an inadequate remedy.[95]

If cryptocurrencies are property, this raises important questions in the context of specific relief, for the simple fact that it frames the enquiry. Specific performance is routinely ordered in the case of contracts for the sale of land.[96] But it is rarely ordered in the case of contracts for the sale of a chattel – the chattel needs to be rare or unique,[97] or the price of the chattel must be so volatile that it warrants relief on hardship grounds.[98] Likewise, only unique circumstances warrant an order of specific performance for a contract to pay money;[99] the claim is in debt, not for breach of contract.[100] The difficulty with a cryptocurrency is that if it is property it sits somewhere between fiat currency and intangible personal property. While cryptocurrency may be personal property, it may not be a chose in action (like a customer's credit balance in a bank account); it cannot be enforced through a debt claim.[101] It is similar to a security, such as a share, and like a share, it is fungible and it has an ascertainable value based on fiat currency. And, significantly, specific performance of a contract to sell or allot shares is usually only ordered if there is not an available market for the shares.[102] If there is an available market, damages are an adequate remedy, quantified as the difference between the contract price and the market price at the date of breach.[103]

In *B2C2 Ltd v Quoine Pte*,[104] the Singapore International Commercial Court looked to the market value measure in determining whether specific performance should be ordered such as to require a transfer of Bitcoin. Justice Thorley QC refused to make the order because, by reason of the dramatic increase in value of Bitcoin between the date of breach and the date of judgment, specific performance would cause hardship to the defendant.[105] To put it differently, specific performance was not ordered because, pursuant to such an order, the transferor would have had to pay substantially more for the Bitcoin than it would have had to pay at the date of breach. Seddon and Bigwood argue that in the case of contracts to pay money in foreign currency, a buyer may be entitled to specific performance *because* the foreign currency increases in value between the date of breach and the date of judgment.[106] Hence, in the case of cryptocurrency, if we apply the market measure to assess the adequacy of damages and to determine whether there is any hardship to the defendant, a substantial increase in the value of

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[94] *Patel v Ali* [1984] Ch 283 (EWHC).
[95] *Beswick v Beswick* [1968] AC 58, 102 (Lord Upjohn).
[96] See *Adderley v Dixon* (1824) 1 Sim & St 607; 57 ER 239.
[97] See, eg, *Dougan v Ley* (1946) 71 CLR 142 (sale of taxi and taxi licence plates).
[98] See, eg, *Sky Petroleum v VIP Petroleum Ltd* [1974] 1 WLR 576 (injunctive relief, akin to specific performance, was granted to prevent a seller of fuel from cutting of fuel supply, in circumstances where the market price for fuel had dramatically increased).
[99] For example, specific performance may be ordered if the recipient of the money is not a party to the contract: see, eg, *Beswick v Beswick* [1968] AC 58; Heydon (n 91) 1012 [27.410].
[100] *Young v Queensland Trustees Ltd* (1956) 99 CLR 560, 567-68 (Dixon CJ, McTiernan and Taylor JJ).
[101] Compare Low and Teo (n 9) 246.
[102] See, eg, *Duncuft v Albrecht* (1841) 12 Sim 189; 59 ER 1104 (specific performance of a contract to sell shares in a railway company); *Lionsgate Australia Pty Ltd v Macquarie Private Portfolio Management Ltd* (2007) 62 ACSR 522, 536 [64] (Barrett J) (NSWSC).
[103] *ANZ Executors & Trustees Ltd v Humes Ltd* [1990] VR 615, 630 (Brooking J); Heydon (n 91) 1005-06 [27.270]-[27.280].
[104] *B2C2 Ltd v Quoine Pte Ltd* [2019] SGHC(I) 3.
[105] Ibid [254]-[256] (Simon Thorley IJ). A decision not apparently contested on appeal: *Quoine Pte Ltd v B2C2 Ltd* [2020] SGCA(i) 2.
[106] NC Seddon and RA Bigwood, *Chesire & Fifoot Law of Contract* (LexisNexis Butterworths, 11th Australian ed, 2017) 1246 [24.6], citing FA Mann, 'Specific Performance of Foreign Money Obligations' (1968) 31 *Modern Law Review* 342.

the cryptocurrency (between date of breach and date of judgment) could cut both ways. A moderate increase could perhaps warrant an order of specific performance (requiring a transfer of cryptocurrency) because damages are inadequate to compensate for loss caused by the breach. By contrast, a substantial or extraordinary increase could defeat a claim to specific performance because of hardship to the defendant.[107] As such, while volatility probably does not undermine the inherent value of cryptocurrency (as consideration for a contract), it may well determine whether a contract to sell cryptocurrency is specifically enforceable.

The property question, when asked in respect of cryptocurrencies, reveals important theoretical considerations as to when a novel thing or relationship may constitute property. These considerations focus upon the social function played by property, and whether novel forms can be found based upon a narrow attributes-analogy exercise applied by a court, or a wider, functional approach, which asks what socio-economic purposes property aims to serve. But more importantly, whether cryptocurrency is property will have significant practical implications for the operation of doctrinal categories of law, such as trusts and contracts. The High Court of New Zealand decision in *Moore and Ruscoe*, then, has both theoretical and doctrinal implications for the future understanding of property and its interplay with other areas of law.

[107] It is questionable whether hardship of this nature is sufficient under Australian law, considering that 'great hardship' is required: see *Dowsett v Reid* (1912) 15 CLR 695, 705 (Griffith CJ); Seddon and Bigwood (n 106) 1248-49 [24.8]. But see *Co-operative Insurance Society Ltd v Argyll Stores (Holdings) Ltd* [1998] AC 1, 15 (Lord Hoffmann) (hardship to a tenant (in being ordered to continue to run a business at a loss) was taken into account in determining whether injunctive relief should be granted), discussed in Heydon (n 91) 1026 [27.700].