2

IT'S VIRTUALLY MONEY

*Sarah Green**

I. Introduction

> The controversy about the concept of money is not exactly one of the most satisfactory chapters in the history of our science. It is chiefly remarkable for the smother of juristic and commercial technicalities in which it is enveloped and for the quite undeserved significance that has been attached to what is after all merely a question of terminology. The solution of the question has been regarded as an end in itself and it seems to have been completely forgotten that the real aim should have been simply to facilitate further investigation.[1]

To be categorized as money, any medium must currently fulfil three conditions: it must be able to function as a medium of exchange, a store of value, and a unit of account. The public and economic reasons for this are clear. The private law context, however, has a distinct set of concerns and would be better served by focussing solely on the criterion of a medium of exchange. The relevance to private law of units of account and stores of value is limited. Professor Sir Roy Goode has long asserted that: **2.01**

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[1] Ludwig von Mises, *The Theory of Money and Credit* (first published 1912, Skyhorse Publishing 2013) ch 3, s 1.

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> much of the debate on what constitutes money in law is rather sterile and has few implications for the rights of parties to commercial transactions, where payment by bank transfer is the almost universal method of settlement. In most developed countries, where bank failures were until recently infrequent, a bank's unconditional commitment to pay is treated as the equivalent of cash. The crucial question, then, is not what constitutes money but what constitutes payment.[2]

2.02 Professor Goode was making the point because of the near-universal use of bank money in commercial transactions at the time he was writing. The advent of virtual currencies makes his suggested shift in focus even more appropriate. What is important for private law classification and remedial purposes is the *fungibility* of a medium of exchange and the consequent fact that it does not depend on a double coincidence of wants.[3] These qualities set such assets apart from other media, such as goods exchanged for others under a barter agreement: a fungible medium of exchange has an objectivity of value and generic availability which goods lack. Whilst virtual currencies undoubtedly constitute fungible media of exchange, they do not clearly or consistently meet the criteria of being units of account or stores of value. Under current legal conditions, therefore, contracts made with such currencies are deemed not to have been made with money. One potential consequence of this is that those involving a transfer of property in goods will be presumed to be barter rather than sales agreements. The legal notion of barter, however, seems not to capture the essence of a transaction made for fungible value, as opposed to one made for individual and specific goods. According to the current legal position, the principal distinctive feature of a sales contract is the seller's remedial action for the price; something which is not available for breach of a contract of barter.[4] The remedy for debt, however, would seem to be more in keeping with the legitimate expectations of the parties to a transaction in which goods are exchanged for a virtual currency than would a claim for damages. Once something functions as a medium of exchange, it seems artificial and disingenuous to divide mutually agreed payment obligations up into those made on the basis of State-issued (fiat) currency and those not. For private law purposes, therefore, it makes sense to treat virtual currencies as money.

A. What are virtual currencies and why do they present such challenges to existing categories?

2.03 Given that virtual currencies need to be administered by using some form of computing device, it is tempting to align them closely with electronic bank money,

[2] Ewan McKendrick (ed), *Goode on Commercial Law* (4th edn, Penguin 2010) 488.

[3] The phenomenon which must occur in order for an exchange to be desirable when the medium of exchange is not fungible: if A wants B's apples, she must wait until she has something B wants to exchange for those apples. This clearly detracts from the efficacy and efficiency of transactions. Fungible media dispense with the problem.

[4] Michael Bridge, *Benjamin's Sale of Goods* (9th edn, Sweet & Maxwell 2016) para 1-035.

which, for most of us, is dealt with using similar hardware. Why, then, do virtual currencies present such a classificatory problem, when bank money (which makes up more than 95% of the money used in the UK economy, for instance)[5] has long been integrated into our legal understanding? One of the reasons is that, on closer inspection, it is clear that virtual currencies have far more in common with cash than they do with bank money. Yet they are not cash. This is where the difficulties for private law might be said to begin. It is not even easy to say whether virtual currencies are closer to cash than they are to goods: Schatt has described Bitcoin, for example, as something which is '[b]ased on an elegant algorithm and possessing attributes of both currency and commodity'.[6] Since Bitcoin is, at least currently, the most successful example of a virtual currency, it would seem to provide an obvious basis for explaining the technology and its legal implications.

> A bitcoin is a very particular string of bits that exists only on the memory of a computer, on a hard drive, a thumb drive, or even as a long string of letters and numbers printed onto a piece of paper. A bitcoin is just data, very special data. And it's not a coin. It's a highly divisible unit.[7]

2.04 The legal implication of this is that a bitcoin is not a chose in action. The string of data that constitutes a bitcoin is a unique and specific thing in its own right. It is therefore distinct from bank money, which, as a relationship of indebtedness between bank and customer, is a chose in action. It is also unlikely, however, that current common law orthodoxy would hold a bitcoin to be a chose in possession. In *OBG v Allan*,[8] the House of Lords made it quite clear that the category of choses in possession does not include intangibles. Whilst this decision retained the established 'documentary exception', meaning that, for instance, cheques could be possessed, bitcoins would not fit this exception, since they themselves are the thing of value, rather than being a representation of an underlying asset in the way that cheques and share certificates are. There is no question that this model of currency, whilst sharing characteristics with forms of value with which the common law is familiar, does not fit comfortably into any existing classification.

2.05 In practical terms, what the 'holder' of a bitcoin really has is exclusive access to these unique strings of data, which gives her the power to control them, whether that be for spending, saving, or moving round between accounts. (There is no limit to the number of Bitcoin accounts one can have.) Each user has a public key, which functions like an address to which bitcoins can be sent as a means of payment, and a private key, which protects access to those bitcoins, functioning rather

[5] David Fox, *Property Rights in Money* (OUP 2008) 1.137.
[6] Dan Schatt, *Virtual Banking* (Wiley 2014) 149.
[7] ibid 153. 'There were some 12.6 million bitcoins in existence in April 2014.'
[8] [2007] UKHL 21. See also *Your Response Ltd v Datateam Business Media Ltd* [2014] EWCA Civ 281. Although, for a far more encouraging approach, albeit not absolutely analogous, see *Dixon v The Queen* [2015] NZSC 147 at [51] for the assertion that digital files (in this case photographs) can count as property.

like a PIN or password. Strings of data are thus passed from account to account, as requested by users. Their movement, whilst physical at the level of binary data, occurs therefore within digital correspondence and is not seen or touched by users. This is what makes virtual currency 'feel' like bank money. In legal terms, however, it behaves far more like cash. When bank money moves from bank account to bank account, nothing actually moves at all, and the promise of one bank to pay a customer is substituted for the promise of another bank to pay another customer for the same amount. In other words, a debt is replaced by a different debt. As alluded to above, however, bitcoins are actually valuable physical assets which move from one account (or 'wallet') to another. This has a number of implications, the first and probably most important of which is that bitcoins can be lost or stolen, and that when this occurs, they cannot be recovered except by physical recaption (that is, finding the person who now has the bitcoin in question and persuading him in some way to return it to the rightful holder). It also means that transactions in Bitcoin are irreversible except, again, by persuading the transferee to return the same bitcoin. Significantly, there is no third party to either guarantee or indemnify users against the consequences of incorrect transfers. Some providers of online wallet software offer insurance against such risks, but as ever, the direction of insurance offers serves only to indicate the default bearer of a risk.

2.06 So, have we come (almost) full circle? Have we moved from cash, to bank money, to bank money represented in electronic form, to cash represented in electronic form? Maybe, at least in terms of technical potential. There are several reasons, however, why virtual currencies have not yet come close to replacing cash, at least in most developed countries. It is often said that reliance on virtual currencies is problematic and risky because such currencies are not legal tender. But then, neither is bank money.

> Bank money lacks at least most of the legal characteristics of physical money: it is not issued under the authority of the State, it is not legal tender, it does not serve as a medium of universal exchange, and it is not negotiable.[9]

2.07 Yet bank money accounts for the overwhelming majority of transactions made in modern first world economies. This, therefore, cannot be the only reason why virtual currencies are not (yet) universally used. Rather, the feature of Bitcoin, and indeed virtual currencies in general, which both endear them to some and alienate them from others, is their independence from any third-party intermediary. The distributed ledger technology, or blockchain, which is the really significant feature of Bitcoin, obviates the need for banks, governments, or any central authority. It is a truly peer-to-peer system. Every user who has a copy of the Bitcoin software on her computer thereby has a copy of the entire transactional history of Bitcoin: a record of every transaction ever made is therefore available to all users.

[9] McKendrick (n 2) 489.

The transactions which make up each 'block' in the 'chain' are made and verified across the network by member computers performing immensely difficult equations, in a race to be the one to come up with the correct answer. The computer that finishes first is rewarded with bitcoins and, at the same time, adds the new, verified block to the chain (once the correctness of the winning computer's answer has been checked by its peers). The software is open source so anyone can download and modify it. Thus, the whole system is accessible to, and shared between, its users: there is not only no requirement for third-party intervention but also there is no room for it.

2.08 Governments across the world have had mixed reactions to this, of course (although most have now seen their way to recognizing bitcoins as taxable assets). The absence of a third party in the Bitcoin network is something of a double-edged sword. The lack of any State underwriting of a currency makes it, in the long run, potentially less stable than State-issued currency, and not as directly affected by economic policy. Within some States, this is an unappealing feature, but, in many others, it is its main attraction:

> Citizens of countries such as Argentina, whose governments have a near perfect track record of debasing their own currency and destroying the savings of their citizenry, have shown signs of preferring Bitcoin to their own state's money.[10]

2.09 Initially, Bitcoin was less regulated than State-issued currencies, but there is no intrinsic necessity for this, and the regulation of it is increasing all the time.[11] Historically, Bitcoin has been associated with criminal individuals, wanting to take advantage of its unregulated status, as well as the pseudonymous nature of its transactions. (This is no reason in itself to abandon it as a promising economic medium: the advance of the Internet was vastly accelerated by the commercial porn industry, as was the supremacy of VHS video over the technologically superior Betamax platform, confirming that virtue is by no means a pointer to commercial success.) The criminal underworld is not, however, the only community to have found in virtual currency something that it could not find elsewhere:

> Today, decentralized virtual currencies … deliver more benefits at a lower cost and with greater ease than conventional bank products … Bitcoin is helping to level the financial playing field by offering services to those individuals and businesses around the world unable to engage in financial transactions because of road blocks created by conventional bank products. Banks are excellent at keeping people away from financial services … Bitcoin has the potential to improve the quality of life for some of the world's poorest people.[12]

2.10 It is this divorce between currency and State, however, which seems at the moment to be the most likely reason why virtual currencies would not fit within

[10] John Lanchester, 'When Bitcoin Grows Up' (2016) 38(8) London Review of Books 3, 12.
[11] P Carl Mullan, *The Digital Currency Challenge* (Palgrave 2014) 131.
[12] ibid 88.

any existing category of 'money'. As well as having to operate as a store of value, a medium of exchange, and a unit of account, in order to have the legal status of money, according to Mann, that medium must also be:

a) issued under the authority of the law in force within the State of issue;
b) under the terms of that law, denominated by reference to a unit of account; and
c) under the terms of that law, to serve as the universal means of exchange in the State of issue.[13]

2.11 The first of these is not only a characteristic which Bitcoin currently fails to exhibit, but is actually something which is anathemic to it. As such, Bitcoin is unlikely to adapt so as to fulfil such a criterion in future. The question arises, therefore, whether this, inter alia, should preclude its recognition as a valid means of payment in a private law context. Economists and governments are likely to disagree with lawyers on this, since the biggest, and undoubted, difference between conventional and virtual payments methods lies in the fact that the latter are privately produced and controlled and, as such, they exist outside of State control.[14] Nonetheless, the concerns of lawyers are specific and contextually defined, and this is certainly true of the private law in relation to payments.

2.12 Charles Proctor, the current editor of *Mann on the Legal Aspect of Money*,[15] says, in reference to such differing views:

> It is, of course, unsurprising that lawyers and economists should differ in their approaches to questions of this kind, for their areas of concern and objectives are also entirely different. The economist may be concerned with such ideas as monetary policy, exchange rate policy, and the supply and soundness of money within an economic area as a whole. Lawyers, on the other hand, tend to be more concerned with the protection of the purely private rights of contracting parties and the discharge of monetary obligations.[16]

2.13 Yet the economist's perspective is inextricably linked with the concept of 'money' as we know it. This is all but inevitable and, for most purposes, unproblematic. Yet, there are areas of private law of increasingly commercial significance, for which the traditional concept of 'money' is less than useful. This is not of course the first time that the common law's definition of 'money' has been challenged by social and technological change. In the past, the law has responded to the increased use of bank notes in the place of coins by expanding its definition of 'money' to include them. When, some years later, it became apparent that there was a growing preference for bank money over both notes and coins, the law

[13] Charles Proctor, *Mann on the Legal Aspect of Money* (7th edn, OUP 2012) para 1.17.

[14] Although, even here, the perceived gulf between the conventional and the novel is not as big as would first appear, bank money is technically also produced and controlled by private entities (banks), albeit entities which are to some extent regulated by the State.

[15] Proctor (n 13) para 1.17.

[16] ibid para 1.08.

adapted once more. It is hardly likely that such technological and social developments will cease. In fact, given that the rate of such developments will probably increase,[17] there is much to be said for liberating the expectations and practices of contracting parties from unnecessary definitional constraints. After all, contracting parties' principal concern is for

> that which passes freely from hand to hand throughout the community in final discharge of debts and full payment for commodities, being accepted equally without reference to the character or credit of the person who offers it and without the intention of the person who receives it to consume it or apply it to any other use than in turn to tender it to others in discharge of debts or payment for commodities.[18]

2.14 This describes a medium of exchange, a feature of traditional money undisputed by either lawyers or economists. Or probably anyone else. As is well established, however, in order to fit the current technical definition of 'money', any medium must also exhibit two other features: it must be both a unit of account and a store of wealth. Virtual currencies fit the first criterion far more easily than they do the second two (as in fact do local UK currencies, such as the Bristol Pound and the Brixton Pound).[19]

B. Universal medium of exchange

2.15 Whilst the function of a medium of exchange is the very least that something must be in order to be considered any sort of currency, the traditional definition of 'money' has a greater attachment to universality than the purposes of private law require.[20] If both parties to a contract are willing to accept a given medium of exchange, either on a discrete or relational basis, private law has an interest in protecting their expectation of enforceability. Whilst currently, and by default, contracts made for goods to be exchanged for anything other than money are treated as barter rather than as sale, true contracts of barter differ significantly from transactions made for a medium of exchange whose intrinsic quality does not immediately fulfil the needs of the parties.

2.16 This distinction is important in delineating the boundaries of private law's treatment of transactions because it imposes an objectivity that would otherwise be lacking. In other words, barter agreements are dependent on the coincidence of

[17] According to Moore's law, the processing power of which newly produced computer hardware is capable doubles every two years. Gordon Moore made his prediction in 1970, and it has turned out to be accurate, although it is generally recognized within the industry that the rate of increase in power is now faster. Inevitably, such improvements in hardware performance beget corresponding software developments. The scale of the algorithmic calculations on which Bitcoin is based, for instance, would simply not have been feasible a decade before it was created.

[18] *Moss v Hancock* [1899] 2 QB 111, 116.

[19] Which are issued and only accepted by merchants within those particular cities. The idea is to encourage people to spend their money with local businesses.

[20] Proctor (n 13) para 1.52.

wants in a way that transactions using an independent medium of exchange are not. So, if A offers to give her car to B in exchange for a B's bicycle and cycling gear, this is a transaction which depends for its worth on a particular subjective set of facts: perhaps A is moving to Oxford, and B is moving to Birmingham, so that an bicycle will be more valuable to A than a car and vice versa. This is not analogous to an agreement whereby A agrees to transfer her car to B for £3000. This is because, in the former situation, the lack of fungibility of the asset offered in exchange means that there is no certain sum, independent of the parties' particular and immediate wants, which the law can identify as forming the basis of the parties' primary obligations. When parties incur a primary obligation to pay a certain sum of money (or, historically, a quantity of fungibles), they thereby agree to produce something which transcends their particular and immediate requirements in both a temporal and substantive sense. Their ability to fulfil that obligation is not dependent upon the availability of specific things, which may be exhaustible, perishable, and vulnerable to irreplaceable loss, but can instead be fulfilled by a measure of something of general availability. It seems fungibility is the touchstone of distinction here, which would also explain why there exists the possibility of parties agreeing to make what would otherwise be a barter into an agreement of reciprocal sales on the basis of a mutual set-off of prices, as in *Alldridge v Johnson*.[21] The distinguishing characteristic here between a sale and a barter is the *valuation* of the consideration from each side;[22] that is, not five oranges for three apples, but five oranges worth £2.50 for three apples worth £1.75, with, for instance, the difference to be paid in cash. By presenting the quid pro quo in this way, the parties have introduced fungibility into their obligations by giving value in currency as an alternative. *Goode on Commercial Law* defines 'fungibility' as:

> assets of which one unit is, in terms of an obligation owed by one party to another, indistinguishable from any other unit, so that a duty to deliver one unit is considered performed by the delivery of an equivalent unit.[23]

2.17 Von Mises provides a further helpful explanation of why money is the ultimate fungible:

> A claim to money may be transferred over and over again in an indefinite number of indirect exchanges without the person by whom it is payable ever being called upon to settle it. This is obviously not true as far as other economic goods are concerned, for these are always destined for ultimate consumption.[24]

2.18 The presence of fungibility and the absence of consumability seem to identify what is significant and distinctive about media of exchange, as opposed to other

[21] (1857) 7 E&B 885, 119 ER 1476.
[22] Bridge (n 4) para 1-037.
[23] McKendrick (n 2) 487.
[24] von Mises (n 1) ch 3, s 1.

assets used for exchange or barter. For the private law purposes of facilitating, securing, and policing transactions, it is not obvious why the universality of that medium of exchange needs to form part of its definitional status. Virtual currencies such as Bitcoin are fungible for these purposes, at least as much as banknotes are. Whilst coins have no earmark at all, banknotes of course bear serial numbers, meaning that each one is strictly unique. The same goes for bitcoins, since they are all unique strings of digital code. Since, however, the serial number of a banknote or the content of a string of Bitcoin code makes no material difference to payers or payees, the former has always been treated as fungible for payment purposes. There is no obvious reason why a different approach should be taken to Bitcoin. Virtual currencies are also not consumables, but function in a way which corresponds with von Mises's description above, since they are capable of fulfilling payment obligations amongst those willing to use them without ever needing to be settled or converted; they are not perishable, nor dependent for their value either on being spent within a certain amount of time, or used in a particular way. Thus, transactions in which the property in goods passes in exchange for virtual currencies are far closer in legal terms to those made for media of exchange (sale) than they are to those of barter.

C. Unit of account

2.19 It is fiendishly difficult to define precisely what a unit of account is. This may in part be because it is an abstract concept, but one which is redundant without a quantitative value attached.[25] In the United Kingdom, for example, sterling is a unit of account, providing as it does a 'standard of value against which the value of commodities can be measured.'[26] Since 1931, and the abandonment of the gold standard, sterling is also an independent measure of value, since it is not reducible to anything beyond itself (all the Bank of England now promises to pay the 'bearer on demand' is banknotes of different denominations), but it is not clear that this independence is necessary to its status as money. What is clear is that *claims* to money, such as 'notes issues by banks of doubtful credit or bills that are not yet mature'[27] or 'anything more than the simple embodiment of a unit of account'[28] (such as a coin or a banknote) are not units of account in their own right in the way that the traditional definition of 'money' requires. It is also the case that precious metals cannot function as units of account, since their value is subject to fluctuation and the vagaries of market demand,[29] despite the fact that many might regard gold and silver as being at the very least intimately associated with the basic concept of money. Consequently, it would seem reasonable to

[25] Proctor (n 13) para 2.38.
[26] Proctor (n 13) para 1.49.
[27] von Mises (n 1) ch 3, s 1.
[28] Proctor (n 13) para 1.51.
[29] ibid.

conclude that virtual currencies do not function as units of account, since their value relative to sterling is subject to the same fluctuations.[30] Nor are they the lowest common denominations available within the economy, since their value depends on their convertibility into national currencies. Bitcoin, for instance, is a step removed from the debt instrument referred to above; not only does the former have its own denomination, whereas the latter is denominated in sterling, but Bitcoin gives its bearer no claim right, postponed or present. At most, a holder of Bitcoin has a liberty to present those assets to an exchange and request sterling in return.[31] Thus, Bitcoin represents a means of claiming (in the non-Hohfeldian sense) money, rather than being money in its own right.

D. Store of value

2.20 The viability of fiat money as a store of value depends entirely on the credit of the bank of issue. But virtual currencies such as Bitcoin are doubly-dependent: on their own market value, and then on the credit of banks that issue the currency for which they are exchanged. That said, there are several Bitcoin millionaires, so it is a medium which can store and accrue value, albeit with varying stability:

> The total value of all the bitcoin in circulation, as I write [April 2016], is £4.24 billion. That number changes, often with disconcerting rapidity, since the price of bitcoin is sharply variable. This puts outsiders off, since one of the most basic functions of money is to store value; bitcoin is a lousy store of value, as many observers have pointed out. Bitcoin, however, already does an OK job with one of money's other main functions, as a medium of exchange. You can buy plane tickets, book hotel rooms, buy computer equipment, food and pretty much anything else with bitcoin, which is now accepted by tens of thousands of businesses. Indeed, since you can buy gift cards with bitcoin, and use the cards at Amazon and other e-commerce sites, you can in effect buy anything you want using the cryptocurrency. There are even bitcoin cashpoint machines.[32]

2.21 The ability of any medium to function as a store of value, however, is ultimately relative. In Australia, Europe, and the United States, for example, Bitcoin is currently a relatively poor option. In Argentina, Zimbabwe, or India, however, it has looked at least at times a far more appealing prospect than fiat currency.

E. A peculiarly private law concept of 'money'

2.22 Private law's concern with payment rights and obligations is no better served by the conventional concept of money that it is by a more promiscuous idea of what can count as currency. That is not to suggest that the traditional institution of

[30] Although this is would seem to result as much from their status within national economies, as from any of their own intrinsic qualities.

[31] Or, of course, to present them to any party and offer them in return for goods or services.

[32] Lanchester (n 10) 11. I have left in Lanchester's lack of capitalization, although, strictly, 'Bitcoin' refers to the generic currency, whilst 'bitcoins' are the actual tokens themselves.

money has no legal relevance, but that private law should adopt its own derivative and yet independent concept; one which is more responsive to the technological and economic changes for which private commercial activity is so often responsible, and on which it always relies. As private law currently stands, there are a number of effects which depend upon the classification of a transaction as having been made with 'money', and limited by that specific and conventional definition. Those effects are not, therefore, triggered by similar transactions made with virtual currencies, regardless of the expectations and intentions of the parties to any given contract. Given the swift and sustained rise in the use of these technologies, private law's long-established approach looks dated. 'Money', as traditionally understood, has an essential economic and political function, but the time has come to question whether that function coincides with the interests of private law.

> Remote shopping, while entirely feasible, will flop.[33]

2.23 In considering virtual currencies, it is very common to encounter scepticism about the value of such a pursuit. Generally, this seems to be because such currencies are regarded as no more than a technological flash-in-the-pan. Less than a generation ago, similar sentiments were expressed about the Internet.

> History has not been kind to those who have resisted the nearly inexorable force of Internet-connected technologies … By not moving, the banking industry continues to experience disintermediation, the disconnection of consumers from their banks for a variety of functions including payments.[34]

2.24 Vigna and Casey describe the general trajectory of thinking about virtual currencies as moving from disdain through scepticism, curiosity, crystallization, and acceptance.[35] Whilst it may well be that Bitcoin itself either fades into obscurity or crashes in a catastrophic way,[36] the technology on which it is based is here to stay. Few can seriously believe that in another twenty years, people will still be passing each other pieces of paper and metal in exchange for goods and services. The financial industry certainly does not believe this, and most major banks have already committed serious funds to exploring Bitcoin's underlying blockchain technology, with a view to integrating it into their payment protocols:

> The banks have looked into the possibility of better, faster, cheaper systems powered by blockchains, and have concluded that it's possible for these to be a source of disruption and disintermediation of their business. Alternatively, they will be another profitable thing the banks own. They prefer the second option. A number of competing syndicates, funded and largely owned by the banks, are rushing to develop and patent proprietary, finance-friendly versions of blockchain technology.

[33] 'THE FUTURISTS: Looking Forward A.D 2000' Time Magazine (New York, 25 February 1966).

[34] Schatt (n 6) 174.

[35] Paul Vigna and Michael Casey, *Cryptocurrency* (Bodley Head 2015) 11.

[36] Although, at the time of writing, its value has been in the ascendant for a number of months.

> A consortium called R3Cev is backed by 42 financial companies and seeks to develop what would in effect be a private blockchain; Goldman Sachs, one of the firms behind R3Cev, has also filed a patent for a private blockchain-backed currency called SETLCoin; Digital Assets Holdings, another blockchain company, is run by Blythe Masters, the English former J.P. Morgan executive who did more than anybody else to pioneer the credit default swap, the dazzlingly ingenious new financial instrument which was a huge success until it nearly destroyed the global financial system. This is just a tiny sample, and there are many other bitcoin-related initiatives.[37]

2.25 The same technology holds much promise for sectors with particular transactional challenges, such as corporate finance and international sales: the blockchain, which is essentially a distributed, as opposed to a central, ledger,[38] may well provide answers to, for instance, the problems generated by the intermediation of securities[39] and the negotiability of electronic documents. In any event, there is a clear need for private law theory and practice to accommodate virtual currencies. On the basis of its current categories and definitions, that will not be easy.

F. Consequences of a failure to recognize virtual currency as money

1. Barter rather than sale

2.26 In order to qualify as a sale of goods, subject to that specific statutory regime, the consideration given in exchange for the goods must be monetary in form.

2.27 Benjamin tells us:

> It has been observed that 'the full meaning of the word "price" is not actually defined by the Sale of Goods Act, except perhaps by s 2(1)'. The consideration in a contract of sale of goods must in English law be a price in money, either paid or promised. By money is meant legal tender; it does not mean money's worth, so the agreement to transfer goods in exchange for shares is not a sale within the Act. Payment need not, however, be made in cash: a method of payment that enables the seller to obtain money—and not merely money's worth—is within the Act, such as the use by the buyer of a charge card or credit card, or a debit card, or digital cash (smart card or payment by text message through a mobile telephone), or cheque, or banker's draft, or trading check. It is irrelevant that the money payment comes, not from the buyer of the goods, but from the card issuer.[40]

2.28 It is, however, by no means clear that this provision would cover exchanges of goods made for virtual currencies. The 'digital cash' reference appears to refer to the *process* through which fiat currency is transferred, as opposed to the underlying nature of the currency being exchanged. Whilst there is evidence that foreign

[37] Lanchester (n 10) text to n 7.

[38] See the introduction for a detailed description of distributed ledger technology.

[39] Eva Micheler, 'Custody Chains and Asset Values: Why Crypto-Securities Are Worth Contemplating' (2015) 74(3) CLJ 505, 532.

[40] Bridge (n 4) para 2-044.

currency is an acceptable alternative,[41] the presumption here must be that the foreign currency concerned is one backed by a State or States, although, in some case, this is no guarantee of stability or value. According to Bridge:

> it is no objection to the characterization of an agreement as one of sale that the buyer pays with a cheque or banker's draft, for here the instrument serves as a conditional payment until the bank, acting as agent for the buyer, puts the seller in funds with the amount of cheque or draft. The instrument itself may not be money but it is the means by which the seller obtains money.[42]

2.29 The editors of the current edition of Benjamin's Sale of Goods do, however, suggest:

> payment using 'money' issued by local communities or traders, such as the Brixton Pound in London, may constitute money for the purposes of a sale contract where the scheme gives holders of the notes the right to exchange them for legal tender and in so far as a holder of such a note uses it to pay for goods.[43]

2.30 This, in part a concession to the Societary theory of money, is notable for the powerful condition that such independent currencies must give to their holders the right to exchange them for legal tender. The Societary theory of money is one which holds that the recognition of money results from social usage alone, and thus is not dependent upon State recognition. Whilst recognizing that this theory 'plays a greater role than the adherents of the State theory would wish to admit', particularly in times of financial chaos and instability, Proctor concludes that 'the Societary theory cannot be reconciled with the undeniable monopoly of modern States over their currencies and the effective recognition of that monopoly by international law.'[44] At the time of writing, in most countries, it is this, and only this Societary recognition, which facilitates the function of virtual currencies. The growth of both virtual and local currencies suggests perhaps that the Societary theory of money should not be dismissed too quickly. The most recent edition of Mann, however, suggests that, whilst

> it becomes attractive to adopt a functional approach—money is that which serves as a means of exchange—subject to the crucial proviso that its functions must have the formal and mandatory backing of the domestic legal system of the State or area in which it circulates. For anything which is treated as 'money' purely in consequence of local custom or the consent of the parties does not represent or reflect an exercise of monetary sovereignty by the State concerned, and thus cannot be considered 'money' in a legal sense.[45]

[41] *Daewoo Australia Pty Ltd v Suncorp-Metway Ltd* (2000) 33 ACSR 481; Proctor (n 13) para 1.83

[42] Michael Bridge, *The Sale of Goods* (2nd edn, OUP 2009) para 2.28.

[43] Bridge (n 4) para 1.034, n 233.

[44] The example he uses is that of the hyperinflation in Zimbabwe, which reached its nadir in 2009. During that time, the locals simply ceased to use their own currency (ultimately redenominated at 1,000,000,000,000 to 1), preferring instead to deal in US dollars, and other foreign currencies.

[45] Proctor (n 13) para 1.15.

2.31 It is an interesting and open question whether holders of bitcoins currently have a right to exchange them for legal tender (and indeed what rights such holders have in any respect).

> When determining the value behind a digital currency unit, the linchpin of this equation is the point where digital units are swapped for national currency. Without convenient exchange points which allow for the conversion of digital currency units into national currency value, thus creating liquidity for the currency, a digital currency system will never appeal to a commercial audience.[46]

2.32 It would seem as if the holding of a bitcoin in itself generates no such right. The location of any such right could lie only in the contractual agreement between the holder and the exchange which swapped her national currency for bitcoins in the first place:

> In decentralized virtual currency systems, such as Bitcoin, there is no administrator and third-party agents are always responsible for the exchanges between digital currency and government-issued fiat money.[47]

2.33 In Hohfeldian terms, it is hard to identify a claim right here. It seems easier to argue that the holder has a power, a power to exchange that currency for fiat currency. In fact, the relationship between the holder of Bitcoin and the exchange would seem to be similar to a sale in itself, which might suggest that bitcoins are in this sense more like commodities. This would make them unlikely to be regarded as money, capable of being exchanged for goods in subsequent sales transactions. Both English and Australian Sale of Goods legislation defines the subject matter of its concern as 'all personal chattels other than things in action and money'.[48] In the absence of a more expansive notion of 'money' and 'currency', therefore, virtual currencies are liable to be excluded from this, which will often conflict with the commercial expectations and intentions of those who deal in them.

2.34 Strictly, in the context of sale as the law currently stands, it is important that the exchange be made for money, rather than money's worth. 'A clear and liquidated financial advantage accruing to the "seller" will not … amount to money as such: money is not the same as money's worth.'[49] Historically, the common law has remained fairly committed to the requirement of money being the medium of exchange in contracts classified as sales. In *Simpson v Connolly*, Finnemore J said:

> [T]he general principle of English law in regard to sale is that a sale means the exchanging of property for money. That applies … to a sale of land and to a sale of chattels equally.[50]

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[46] Mullan (n 11) 10.

[47] Although, in this, is it so different from the Brixton and Bristol pounds? See s 5 (.5) of Bristol Pound terms and conditions: <https://bristolpound.org/resources/> (accessed 2 August 2018).

[48] eg Sale of Goods Act 1979, s 61(1).

[49] Bridge (n 42) para 2.28.

[50] [1953] 1 WLR 911, 915.

This was cited with approval by Upjohn J in *Robshaw Brothers Ltd v Mayer*,[51] and, in *Re Westminster Property Group*, Nourse J said: **2.35**

> The authorities establish that in legislative usage and in the absence of a special context the word 'sale' denotes an exchange of property for cash and not for other property. I was referred to *John Foster & Sons Ltd. v. Inland Revenue Commissioners* [1894] 1 Q.B. 516; *J. & P. Coats Ltd. v. Inland Revenue Commissioners* [1897] 1 Q.B. 778 and in the Court of Appeal[1897] 2 Q.B. 423; *Simpson v. Connolly* [1953] 1 W.L.R. 911 and *Littlewoods Mail Order Stores Ltd. v. Inland Revenue Commissioners* [1963] A.C. 135.[52]

In *O'Dea v Merchants Trade-Expansion Group Ltd*,[53] vouchers were issued alongside purchased goods by a retailer, which could then be exchanged for other goods in the defendant's warehouse. The goods in that warehouse were labelled according to the amount of vouchers required in order to obtain them. Betts AJ said: **2.36**

> By no stretch of the imagination could it be said that the tokens represented money. The actual value of the tokens in money to anybody but the defendant is unknown … There is no separate assessment in money of the actual value of the goods … It seems to be impossible, therefore, to say that where tokens are procured by the customer from retailers are exchanged by the defendants for goods, there is a sale of those goods … There is no money consideration and there is no 'price' in the ordinary sense of that word.[54]

On the other hand, of *Davies v Customs and Excise Commissioners*,[55] a transaction in which trading checks were exchanged for goods, Lord Widgery CJ said, 'I am quite confident that the customer who presents the … check is paying cash and not consideration other than cash'.[56] Trading checks are vouchers transferred to a borrower by a lender, which are then used by that borrower to acquire goods from certain sellers. Those sellers then redeem the vouchers from the lender, sometimes less a commission. The distinction between *O'Dea* and *Davies* lies in the way in which the goods were valued. In the former, they were not valued in fiat money terms, whereas in the latter they were: customers paying with checks bought the same goods, for the same fiat money price as those paying in cash did. It would seem that this point has so far been determinative of the classification of sales contracts: **2.37**

> An exchange of goods for other goods, with no stipulation as to money price, is a barter and is outside the Act … An agreement to provide goods against trading stamps or other tokens is not a sale.…[57]

[51] [1957] ch125, 129.
[52] [1984] 1 WLR 1117 at 1121. Decision and reasoning affirmed by the Court of Appeal at [1985] 1 WLR 676.
[53] (1938) 37 AR (NSW) 410.
[54] At 417.
[55] [1975] 1 WLR 204.
[56] [1975] 1 WLR 204 at 207.
[57] McKendrick (n 2) 220–21.

2.38 Whilst trading checks have little modern relevance, they have much in common with store and credit cards, in that they operate as promises by third parties to pay sellers. Trading checks and credit cards differ from cheques (or at least from non-guaranteed cheques),[58] in that they are not conditional upon the drawer's account remaining in credit. Whilst no longer a novel form of payment, such credit and store cards themselves satisfy our understanding of payment in a far more straightforward way than they do our definition of money.

> It is sometimes loosely said that the credit card is the equivalent of a money consideration, but the reality is that a credit card, like a cheque drawn on a bank account, is the means by which a money consideration can be paid to the seller by the credit card issuer. Where goods are supplied in return for a credit card payment, the contract is one of sale of goods.[59]

2.39 As Bridge points out, as far as the Sale of Goods Act 1979[60] is concerned:

> A contract of sale of goods is defined in s 2(1) as one in which the seller agrees to transfer property in goods to the buyer for a money consideration: it does not say that the price must come from the buyer. The buyer's duty to pay (s. 27) may be 'negatived or varied' (s. 55(1)) so that the seller looks to a third party instead for payment.[61]

2.40 And, according to Chitty:

> Unless otherwise agreed the seller is entitled to payment in cash and in legal currency. But the parties may expressly or impliedly agree that payment may be made in some other manner, e.g. by cheque or by credit or charge card or by credit transfer, and such an implication may be made by course of dealing between the parties or by trade custom.[62]

2.41 It has long been established, even in a sales context, that the entirety of the price need not be paid in money: part-exchange, for instance, is one of the most common means of purchasing a vehicle.[63] Part-exchange describes a situation where asset A is assigned a price by the trader, and where that trader agrees to accept a money payment lower than that price, in combination with the transfer of asset B. Where, on the other hand, a trader agrees simply to exchange asset A for asset B plus a sum of money, but assigns no monetary value to either asset, this would not under the current law amount to a contract of sale.

2.42 This suggests that, on the basis of current analysis, virtual currencies would not be regarded as money for the purposes of the law relating to sale of goods.

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[58] See Hugh Beale, *Chitty on Contracts* (32nd edn, Sweet & Maxwell 2016) para 44-296.

[59] Bridge (n 42) para 2.32. As authority for the final point, Bridge cites *Re Charge Card Services Ltd* [1989] ch 497, 509.

[60] For equivalent provisions, see WA, s 1; Vic s 6(1); Qld, s 4; NSW, s 6; SA, s 1; Tas, s 6; ACT, s 6; NT, s 6.

[61] Bridge (n 42) n 130.

[62] Beale (n 58) para 44-295.

[63] Bridge (n 4) para 1-038.

Instead, exchanges of such currencies for title to goods fall to be treated as contracts for exchange or barter, falling outside of the remit of Sale of Goods Act legislation:

> The implications of this distinction have not been fully explored. It is, however, clear that the Sale of Goods Act has no direct application to contracts of barter or exchange. There is reasonable agreement among the authorities that it is not open to a disappointed party, who has parted with goods without receiving the expected return, to sue for the value of the goods delivered as a price. The remedy is to claim unliquidated damages for non-delivery of the goods promised in exchange, or possibly to sue the other party in tort on the basis that the property in such goods has passed to that party. It would seem, on principle, that there can be no claim for the price even when the goods have been valued for the purpose of the bargain, unless the transaction can be construed as two reciprocal sales, or a sale with a subsidiary agreement for payment in kind. There may, however, be a claim for a liquidated sum if this is agreed to be paid as part of the exchange, or when, after goods have been exchanged for goods on a running account, a cash balance is agreed to be due.[64]

2.43 The principal consequence for a disappointed seller, having agreed to accept Bitcoin, would seem to be remedial, since she thereby loses the ability to sue for the price.[65] This denies the seller the ability to enforce the primary obligation, and its corresponding advantages:[66] debt claims are not discretionary,[67] nor are they subject to the common law constraints of remoteness, mitigation, or penalties,[68] and it is both procedurally and substantively easier for debt claimants to obtain summary judgment.[69] In both theory and practice, then, the difference in legal treatment is significant enough to query the legitimacy of the distinction currently made between fiat and virtual currencies.

2. Applicability of the bona fide purchaser for value defence

2.44 Another question which arises in relation to the status of virtual currencies is whether the defence of bona fide purchaser for value without notice would apply in this context. David Fox has identified three principal features of the legal conception of money:

> First, its ability to pass as currency, so that fresh indefeasible title is created in the person who receives it as bona fide purchaser for value; secondly, its susceptibility to the principle of abstraction, which allows the legal title to money to pass by simple delivery or transfer regardless of the validity of the underlying transaction in which it is paid; and, thirdly, its relative untraceability at law so that a former owner's

[64] Bridge (n 4) para 1-035.
[65] Although that not always available anyway, depending on when property passes: Beale (n 58) para 44-367; Bridge (n 42) para 11.61
[66] Beale (n 58) para 26.008.
[67] *White & Carter (Councils) Ltd v McGregor* [1962] AC 413, 455 (Lord Hodson).
[68] *Jervis v Harris* [1996] ch 195.
[69] Civil Procedure Rules, pt 24.

> surviving legal title to money is practically extinguished once his or her money has been mixed.[70]

2.45 As Fox goes on to explain, these features exist to protect the economic function of money by eliminating the need to check the title of a transferor or the validity of a given transaction, thereby reducing parties' transaction costs. It also prevents the value of money from being discounted by the transferee to account for the risk of the transaction not being secure because it effectively equates possession with the ability to pass title.[71] In other words, '[t]he proprietary regime applying to money does not so much build trust between the parties as it make the possible absence of trust less relevant.'[72]

2.46 If the bona fide purchaser defence were not to be applied to such currencies, their ability to function as media of exchange comparable to conventional currency would be seriously compromised. *Quistclose Investments Ltd v Rolls Razor Ltd*[73] indicates that that the defence of bona fide purchaser for value extends to bank money, and, given the considerable physical differences between those choses in action and the physical coins in relation to which the defence was first formulated,[74] the reason for this must be one of economic exigency. It stands to reason that the policy behind such an extension is one of facilitating effective commercial exchange and meeting the contractual expectations of the parties to transactions, who have undoubtedly come to regard bank money as being synonymous for all practical purposes with notes and coins. It would be counter-productive at best for the security of minor transactions to be protected by an exception to the *nemo dat* rule, whilst leaving those making larger, bank money transactions vulnerable to the claims of dispossessed third parties.

2.47 It would be reasonable to argue, therefore, that these practical and commercial arguments should be extended to virtual currencies. The significant difference between bank money and virtual currencies, after all, lies not in their private law function as between contracting parties, but in their public status; one as a tool of governmental policy and the other currently independent of it.

> The simple statement that money is a commodity whose economic function is to facilitate the interchange of goods and services does not satisfy those writers who are interested rather in the accumulation of material then in the increase of knowledge. Many investigators imagine that insufficient attention is devoted to the remarkable part played by money in economic life if it is merely credited with the function of

[70] Fox (n 5) 2.01. See also David Fox, 'Bona Fide Purchase and the Currency of Money' (1996) 55(3) CLJ 547.

[71] Fox (n 5) para 2.02.

[72] Fox (n 5) para 2.18. See also James Edelman and Elise Bant, *Unjust Enrichment* (2nd edn, Hart 2016) 371; *Hills Industries Ltd v Australian Financial Services and Leasing Pty Ltd* [2012] NSWCA 380 at [83] (Allsop P).

[73] [1970] AC 567.

[74] Only later was it extended also to banknotes: Fox (n 5) para 2.21

being a medium of exchange; they do not think that due regard has been paid to the significance of money until they have enumerated half a dozen further 'functions'—as if, in an economic order founded on the exchange of goods, there could be a more important function that that of the common medium of exchange.[75]

II. Conclusion

2.48 There is no good reason for private law to distinguish between fiat and virtual currencies. To do so is to provide inconsistent remedial responses to substantively similar commercial arrangements and to undermine parties' legitimate expectations. What is conspicuous to the economist is in this case invisible to the lawyer. It is time, therefore, for private law to free itself of the macroeconomic restrictions that have long been imposed upon it by a definition designed for different purposes.

[75] von Mises (n 1) ch 1, s 3.