Collateral times

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Collateral times

Before Lehman, collateral – as befitting its definition of *subordinate, secondary* – sat on the sidelines of the financial stage. This is no longer the case. The financial crisis has brought collateral to the forefront of theoretical and policy concerns in modern finance, a conversation hitherto consigned to the global regulatory community. Two main traditions have led critical research on collateral: Annelise Riles's (2010, 2011) work in legal anthropology posited collateral expertise in banks' back offices as conceptual and political challenge to a tendency of the social studies of finance (SSF) to fetishize the trading room. Collateral, for Riles (2010), opened new avenues of critique. The more macro-oriented approach of heterodox monetary economics developed in the balance sheet tradition of Hyman Minsky placed collateral prominently at the centre of evolutionary changes in finance, exploring its consequences for modern processes of money creation, central banks and the institutional architecture of macroeconomic management (Mehrling, 2011; Pozsar, 2014; Gabor, 2016; Gabor and Ban, 2016; Gabor and Vestergaard, 2016, 2018; Murau, 2017).[1] These different approaches underpin the two articles in this special feature, yet each transcends their 'home discipline' to make their point: Writing from a SSF perspective, Spears takes up Riles' challenge to argue that in the post-crisis era collateral has not only moved from the back office to centre stage, but come to play an *epistemic* role in financial valuation. Sissoko on the other hand sees the neoclassical assumption of liquidity underlying the 20th century shift to market-based finance as a destabilising instance of SSF counterperformativity. Beyond the benefit of transdisciplinary perspectives to capture collateral's multifaceted character, this goes to show that post-crisis collateral may in fact *enforce* a new cross-disciplinary landscape.

The growing academic interest in collateral should be understood as an attempt to theorise the systemic nature of collateral long acknowledged, albeit quietly, by regulators and central banks. Central banks first recognized the fundamental importance of collateral with the 1998 fall of Long Term Capital Management, described by the Basel-based Committee for

[1] A less prominent, yet radical – pre-crisis – engagement with collateral is Heinsohn and Steiger's (1996) claim of collateral as the missing explanatory variable in the theory of interest and foundation of economic activity as such since the emergence of the legal institution of property. A growing literature on the subject in financial economics since 2010 also shows increasing awareness here that collateral has economic significance and assets derive value not only from future cash flows but also from their ability to serve as collateral (eg Brumm, Grill and Kubler, 2015).

Global Financial Stability as the first crisis of collateral-based finance (Gabor, 2016). In the absence of a theoretical framework to make sense of the monetary aspects of systemic collateral and its implications for financial stability, political incentives to embrace collateral-based finance prevailed, in particular for the conduct of monetary policy. Until the late 1980s, central banks had implemented interest rate decisions by buying and selling government bonds outright, adjusting the quantity of bank reserves to bring market rates in line with the policy rate. Yet outright interventions that saw central banks 'monetise' government debt sat uncomfortably with the monetarist claim for independence from politics. Central banks thus collectively switched to implementing interest rate decisions via temporary loans – known as repurchase or repo agreements – collateralized by government and high-quality private securities (Gabor and Ban, 2016).

In their turn to collateral, central banks sanctioned and accommodated broader structural shifts in the make-up of financial markets. On the demand side, the erosion of welfare states and growing wealth inequalities supported the rise of institutional investors (pension funds, insurance companies, multinational corporations, funds managing wealth of high net worth individuals and institutional investors) that looked for safety in monetary instruments. Banks also began to collateralise OTC derivatives transactions with cash or government bonds to guard against the risk of dealer banks defaulting, especially after the expansion of markets to include banks with higher credit risk, encouraged by the 2002 EU Collateral directive in a bid to promote financial integration between EU states. On the supply side, states were unable to meet the growing institutional demand for safe collateral, instead accommodating, via lax regulatory regimes, the private production of seemingly high-quality collateral through processes of securitization (Gabor, 2016; Thiemann, 2018). Money markets have been at the centre of events of the unfolding crisis from 2008, now widely seen as a run on repo (Gorton and Metrick, 2012; Mehrling *et al*, 2013; Moe, 2014; Ricks, 2016), driven by the withdrawal of repo agreements and competing claims for missing collateral due to rehypothecation. Central banks had to expand their crisis management framework by committing to preserve the liquid collateral status of public and private securities as buyer of last resort. Structural collateral demand and supply have, as will become clear, not only entrenched financial fragility but radically altered the terrain on which political struggles over money and credit creation are being fought.

Collateral blind spots

In legal terms, collateralisation means the creation of a real right to secure the performance of an obligation (Slovenko, 1958, p. 60). Placed into the family of concepts relating to the pledge, collateral calls up an age-old history of securing an expectation, relation or undertaking that is curiously amiss in the modern disciplines. The pledge spans legal, financial and security aspects, yet has no prominent place in economics or security studies and has only been studied in law since the 19th century. 'One of the oldest relations of the law' (Lloyd, 1917, p. 1940) present in both Greek and Roman law, the pledge was not recognised as a legal concept in English Common law until 1703 (Squillante, 1982, p. 620). With the exception of Riles' (2010, 2011) work and Sissoko (2010), legal scholarship on finance has paid little attention to the footprints of collateral practices.[2]

A possible explanation for the lack of theoretical consideration of collateral in pre-crisis economics is a general assumption of repayment of debt (Spears, this issue). The fact that not all loans are retrievable and that lenders are to accept the risk of default was managed and analysed in terms of credit risk and credit ratings. Likewise, despite functioning as 'security' for a future promise, the crucial role of pledge as a *security device* (cf. Squillante, 1958) has also not been registered in security studies.[3] Conze's (1984) classic conceptual history of security, while noting that the sense of the Roman term *securitas* as a debt security similar to *cautio* is still alive, immediately brackets the 'civil law technical term' as not relevant for the conceptual history of security (1984, p. 832). A notable exception is Der Derian's (1995, p. 27-28) brief allusion to the historical meaning of security as *pledge, bond, or surety that one seeks in the face of danger, a debt or an obligation of some kind* as means to contest the conceptual monopoly of the realist notion of security. Entirely unexplored in security studies however is the historical role of hostages, for example, in securing political agreements and peace treaties (Kosto, 2012; Lutteroth, 1922). From the 5th century BCE hostages are documented in Ancient Greece as a regular feature of internal and external relations, continuing in the Roman Empire

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[2] While collateral is mentioned intermittently in compelling emerging studies of money as legal institution (cf. Desan, 2014; Fox & Ernst, 2016), a sustained theorisation of collateral is as of yet lacking.

[3] The two primary forms of legal security are real security, referring to property, and personal security or surety.

to be employed in the day-to-day management of warfare, diplomacy and domestic affairs (Kosto, 2012, pp. 2-3). As one of the oldest forms of surety the institution of hostages 'feature[s] in nearly every major political-military development or event between the 5th and 15th centuries' as well as in major financial deals of the period (2012, p. 4). From a perspective of social theory, it is notable that the historical institution of hostageship, ceding among European powers only in the 18th century,[4] is closer to collateral than to the current understanding of hostage as a terrorist victim: both are given freely and not taken with violence.

Just as the key social, legal and political institution of hostageship has not received extensive consideration even in history until recently,[5] collateral's protean character may paradoxically explain the ubiquitous lack of attention. For traders and financial analysts, collateral used to belong to a different legal order of knowledge (Riles, 2010; Spears, this issue). Repo in fact not only embodies but thrives on these contrasting points of view, as will be further elaborated below: from a legal point of view, a repo is a contract to sell a marketable asset that is entered into simultaneously with a contract to repurchase it at a specified price and time; from an economic point of view it is equivalent to a secured loan; from a monetary point of view, it entails the creation of shadow money (Pozsar, 2014), that is, promises to pay whose par convertibility is constructed through complex legal and accounting processes centred on collateral (Gabor and Vestergaard, 2018).

Academic neglect notwithstanding, collateral has arguably shown more clout in classic works of literature, which display an enduring fascination with the power of the bond and the sacrifice it may entail. From Shakespeare's *Merchant of Venice*, to Schiller's *The Pledge* to Lessing's *Minna von Barnhelm*, to Goethe's *Faust*, collateral has been the protagonist in dramatic explorations of the (in)stability of societal bonds and indispensable element to secure the great contracts of society: debt, marriage and military conscription (cf. Vogl, 2002; Shell, 1982). As means to assure the binding character of relations, the pledge performs a defining role in the configuration of the social itself. Key to this performance is the value placed on it

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[4] Lloyd (1917, p. 41) quotes Hershey's International Law in saying that the last treaty secured by hostages was that of Aix la Chapelle in 1745.

[5] This is being remedied by a surge of historical studies of hostageship within the Collaborative Research Centre *Dynamics of security: Types of securitisation in historical perspective* jointly held by the Universities of Marburg and Giessen.

either objectively (as marketability) or by the debtor: In the 16th century play *Merchant of Venice*, the merchant Antonio lays down a 'pound of his flesh' as conditional surety (bond) for his friend's loan, for which the 'collateral call' means his death. In the assumption of liability, collateral secures by being put at risk. The capacity of the pledged asset to secure derives as much from being *bound* to the transaction as from remaining *separate* to it. Conceptually speaking, pledge – as well as the related terms of bond, mortgage and *cautio* – throughout their history display a curious ambivalence of referring to the means to secure an agreement (the secondary contract that secures the primary contract)[6] and the agreement itself (the primary contract), or of signifying 'both the instrument and the object which it was the purpose of the instrument to secure' (Long [1875] 2006, p. 259-60). Slovenko (1958, p. 62) attributes this ambiguity to the 'paucity of the legal language', as a result of which 'the term 'pledge' is used to signify… both the contract and the thing given as security under the contract'. Yet here collateral displays an unmistakable affinity to 'representations… that become the thing they originally only represented' (Rowlinson, 2010, p. 14), that is, to the evolution of money. More specifically, the challenge confronting historians of money in telling what is and what is not money has been to distinguish 'between a promise to pay or a token of debt and the money by which debt is actually discharged' (Rowlinson, 2010, p. 14). This connection between collateral and money creation is explored briefly in the next sections.

Greek beginnings: *symbola* and *horoi*[7]

Seminal works of the new economic criticism (Shell, 1978; Vogl, 2002; Rowlinson, 2010) have explored money creation in relation to the Ancient Greek *symbolon*.[8] The *symbolon* (a more accurate translation than 'symbol' is 'tally' or 'token' (Harris, 2000, p. 23) is thought to have emerged during the archaic age (800-479 BCE) and refers to 'pledges, pawns, or covenants from an earlier understanding to bring together a part of something that had been divided for the purpose of later comparison' (Shell, 1978, p. 33). These could be pieces of bone, coins, clay tablets or similar objects that would be broken irregularly or cut into halves, each party taking one. The *symbolon* thus secures an agreement between two parties through a physical

[6] Cf. Bassanio in the *Merchant of Venice*: 'My bond to the Jew is forfeit' (Shakespeare, III.ii, p. 314-20).

[7] Many thanks to Mairi Gkikaki for invaluable suggestions for classical literature.

[8] Technically, tokens as (ac)counting devices date to the prehistoric Neolithic period and the empires of Mesopotamia (Schmandt-Besserat, 1992) but there is no continuity to later civilisations.

relationship between the items that renders them meaningful only as one (Gauthier, 1972). As visible 'witness to a transaction' (Shell, 1978, p. 32) *symbola* serve as mark and test of a relationship which if validated commits to a particular type of interaction. From the archaic to the classical age *symbola* shifted from unusual precious objects to articles of negligible intrinsic value (Herman, 2002, p. 63), and later in the classical period from denoting part of a two-part tally to one-way tokens which could be used like tickets in exchange for goods. *Symbola* developed out of ritualized friendship (*xenia*), a precursor of political alliance. As 'technology of mutual recognition' (Rowlinson, 2010, p. 3) they found widespread use in early diplomatic relations and 'typically referred to interstate agreements, dealing with legal relations of different states, or between a state and an individual' (The Oxford Classical Dictionary, 2012, p. 1417). *Symbola* served as signs of official identification, admission, and authorization to vote and attend the court, council and assembly, as well as the theatre, bath or bordello. Out of these developed secondary meanings (*symballein*) including contracts and guarantees. *Symbola* were also used in bank depositions as means of identification (Heichelheim, 1964, p. 76), usually in the form of the signet ring that had been used to seal the deposit. This lineage continues to contemporary forms of encryption, verification protocols and biometric technologies of recognition that secure cryptocurrencies and access to bank accounts and payment systems. Similarly, *symbola* secured the payment of obligations, such as states' membership fee (*phoroi*) for the Delos-Attic maritime alliance (Haensch, 2006, p. 259). The money, which personally had to be taken to Athens, was accompanied by an official letter stating the amount due which was sealed with *symbola* to prevent corruption between beginning and end of the transfer.

Shell (1978) build on Pringsheim's (1950, p. 69) distinction between *phanera ousia* and *aphanes ousia* – property which is in sight of everybody and can therefore not be concealed, and invisible property – to trace the shift from visible transfer of property to invisible transfer of property, that is, from *symbolon* to money. Here he suggests a close connection between *symbolon* and the birth of coinage[9], but at the same time maintains a strict functional separation between the two:

[9] 'First, rings were among the most common *symbola* before the introduction of coinage. Second, some of the first coins were ring-coins. Third, the die by which coins were minted was originally the seal of the ring of the king. To some Greeks, a coin (as money) may have appeared to play the same role as a

> ‘As a *symbolon* the broken coin did not function as money which derives its worth from the material of which it is made or which transactors suppose that it represents. Not itself one of the goods transferred the coin as *symbolon* merely provided a necessary symbol of credit or trust’ (1978, p. 33).

Shell was less concerned with the precise historical date of the emergence of coinage and, like contemporary Greeks, sought to understand its origin in mythical terms.[10] His interest was in the impact of money on thought itself and he thus explored the semiology of the shift from visible to invisible mediation in the collective texts of the *Ring of Gyges*, in particular Plato and Heraclitus. Struggling against as well as internalising the impact of monetary exchange, he argues, gave birth to critical thinking, that is, philosophy. Nonetheless, it is noteworthy that *symbola* historically emerged after or contemporaneously with coinage, and certainly after the use of money in the form of weighed bullion that developed in the 8th century BC (von Reden, 2010). Rowlinson (2010) does not contest the historical date of a shift from *symbolon* to money but rejects Shell’s ‘antithesis of symbolic and monetary exchange’ altogether: ‘There is no *a priori* way of distinguishing one kind of exchange from the other’ (2010, p. 27). Circulating tokens are ‘formally indistinguishable from *symbola* – tallies created to bear witness in transactions in which they did not take part – crucially though, creditors in such transactions, left with evidence of a debt owing to them, could transfer it to a third party in a transaction where it would itself appear as an object of exchange’ (2010, p. 8). This transformation from means of identification to means of exchange, and from token of obligation to means of payment that discharges an obligation, is the ‘paradigmatic mode of money-creation in every society where money is used’ (2010, p. 8). However, the essential monetary property of unconditional interchangeability (Simmel) depends on symbolic support such as shared marks and signatures - ‘there is then no monetary exchange without a symbolic guarantor’ (2010, p.

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symbolon. In fact, however, coins and *symbola* (and the economic classes they served) were quite different (Shell, 1978, p. 35).

[10] This also however leads to a somewhat imprecise definition of money: On the one hand, monetary exchange refers to transactions made “invisible” by the absence of witness or *symbolon* (1978, p. 34) and money is early on identified with coinage (p. 13), on the other hand the ‘minting and purchase of coin … do not fully represent the money form’ (1978, p. 49).

6). Rather than a historical event, the transformation is never completed and the link retained, as history shows throughout.

Instead of seeing these two studies as antagonistic claims, it is possible however to read them as mutually qualifying contributions, where money creation both depends on security and at the same time renders its security invisible. While symbolic security is much more implicated in money creation than Shell's opposition between visible *symbola* and invisible money suggests, the more credible the promise becomes, the less visible the symbolic guarantor needs to be. Somewhat paradoxically, the severing of the personal bond implied by the historical alienation and negotiability of financial instruments re-grounds their perceived safety in their liquidity and an 'internalised', performative pledge.

Horoi

A more direct source of real security can be found in a different kind of witness to a transaction also dating from Ancient Greece in the form of *horoi* stones. A *horos* was a stone or stone slab that during the archaic period (800-479 BCE) served as boundary marker, property rights having emerged in the Homeric era (1100-750 BCE) (Economou and Kyriazis, 2017). If *symbola* received their signifying power from being brought (back) together, *horoi* stones originally were 'marker of a distinction between this and that' (Ober, 2005, p. 447). From the Peleponnese War onwards (4th century BCE) *horoi* started to indicate that the property on which they were placed had been pledged as security for some obligation (Harris, 2013, p. 127) – a warning to third parties that the property was somehow encumbered.[11] *Horoi* mortgage stones were inscribed with the name of the creditor, the amount of the debt and either the phrase "sale on condition of release" or "lying under an obligation"[12] – the latter giving rise to the literal meaning of *hypotheke* as "a putting down" (Shell, 1978, p. 45, n. 101).

Horoi stones are surrounded by a mysterious discrepancy between written sources and archaeological evidence. While Solon claimed in 594 BC, in the act of disestablishing the *horoi*, to have 'liberated the Earth' (fr. 36), there is a gap of 200 years to the first archaeological evidence of mortgage *horoi* in the 4th century BC (Ober, 2005, p. 446). Moreover, while 4th century orators in court almost invariably use the terminology associated with *hypotheke*, the

[11] 'Deposit' originally means 'warning' (Liddell-Scott-Jones).

[12] A further meaning of real security as *enechyron*, thought to be the precursor for *pignus* in Roman law and pledge as movable chattel, is only found in literary sources (Harris, 2013).

horoi employ the vocabulary of "sale on condition of release" (*prasis epi lysei)* in all but a handful of cases (Harris, 1988, p. 357). The latter amounts to a 'well balanced, concise, juristic formulation' (Thuer, 2008, p. 174) indicating that the property had been sold but could be retrieved by the debtor,[13] while in the court speeches only the context makes it clear when a sale 'was not in fact a sale, but rather part of a loan agreement' (ibid). The distinction, or absence thereof, between a sale with the right to repurchase and a secured loan continues to preoccupy classical scholarship (Finley, 1952; Harris, 1988; Thuer, 2008; Millett, 2016).[14] The answer to the question partly hinges on whether the distinction between ownership and possession that exists in Roman law, already existed in Greek law, which Harris (1988) denies.

At the heart of the difference between provisional sale and secured loan lies a similar question of the security of the transfer of property as that which had preoccupied Shell and Rowlinson. Yet the pledge for the value of the obligation is not equally held between the two parties as in *symbolon*. As Sissoko points out in beginning her piece, 'what constitutes 'safe' debt for a lender is precisely the opposite of what constitutes 'safe' debt for a borrower' (2019, p. xx). Whether loan or sale, security here demands an explicit equivalent: as secured loan, *horoi* pledge the value of property as security; in a provisional sale, the piece of property acts as security for its own purchase price – mortgaging the uncertainty of the agreement on one party or the other. As a contract unites not only two parties but also two previously distinct moments of time (Davy, qu. in Mauss, 2004, p. 88), the perceived need for security increases with one or both of two factors: *social distance* and *temporal distance.* Thomsen (2015, p. 158) thus notes the *absence* of any references to real security in the context of the Greek collective *eranos* loan that obliged friends or relatives of the debtor, stating: 'Inasmuch as security implies social distance it seems less than compatible with a friendly loan.'[15] In contrast to social relations of debt, both *symbola* and *horoi* stones establish formal relations over time through security, that is, as public witnesses of a commitment. Here however *symbola* and *horoi* call

[13] This corresponds to 'equity of redemption', that is, the right of a mortgagor over the mortgaged property, especially the right to redeem the property on payment of the principal and interest.

[14] While Finley (1952) describes *hypotheke* and 'sale on condition of release' as different types of real security in Ancient Greece, Harris' (1988) claim that the difference is not in substance but only in terminology 'demolished most of the sophisticated discussions [on the Athenian law of real security] that had taken place among generations of legal historians' (Thuer, 2007, p. 173).

[15] Relations of friendship or kinship (*philia*) oblige to loan without security or interest, and *eranos* loans were redeemed when possible or not at all.

up two different ways of crediting pledge that may be referred to as *validity* and *value*. As means of accreditation, verification and authorization, *symbola* protect against fraud and illegitimate access. In pledging equivalent value (and stating transfer of title), *horoi* protect against default. These may be seen as two different ways of grounding value in the 'real': As Poovey (2008, p. 80) has noted, the distinction of valid and invalid money tokens is historically closely related to the differentiation of fact and fiction. The pledge of *horoi* on the other hand works as counterfactual insurance – 'a promise to pay if another did not' (Lloyd, 1917, p. 49, n. 44). If both *symbola* and *horoi* activate bonds that exist in latent form[16], *symbolon* both validates and discharges an existing agreement while the *horoi* pledge is actualised when the original agreement fails.

Money-as-pledge

The two different ways of crediting pledge of validity and value receive explicit articulation in 17th -18th century theories of money-as-pledge. Proponents of metallic and non-metallic money disagreed about how to guarantee the value of money and thus the standard of measure and adequate quantity of money in circulation. Here money was explicitly debated in terms of 'pawn', 'pledge', 'security', 'counters' and 'tickets' (Coutinho, 2013, p. 1). So Galiani defines money, in addition to a unit of account, as authorised pieces of metal that are '…quietly given and accepted as pledge and perpetual pawn of receiving from other, whenever wished, an equivalent of what was given in exchange of these pieces of metal' (Galiani, 1751, p.110, qu. in Coutinho 2013, p. 16). 'Security' here is the property of money that '... he that receives it shall have the same value for it again, of other things that he wants, whenever he pleases.' (Locke, 1691, p.12). At first sight it might look as if the controversial point between metallists and non-metallists was about the pledge of *symbolon* vs the pledge of *horoi*, ie whether it was 'extrinsic value' (stamp/ denomination) or 'intrinsic value' (weight/ fineness of metal) that guaranteed this security. Both pledges were threatened: the stamp through arbitrary acts of authority in the form of debasement; metallic weight through the volatile market value of

[16] One feature that ritualized friendship (disappearing in late antiquity) shared with kinship was the assumption of perpetuity: once the relationship had been established, the bond was believed to persist in latent form even if the partners did not interact with one another (Oxford Classical Dictionary, 2012). Later however *symbola* became characterized by singularity, that is, the property to spend and discharge themselves through usage (Gkikaki and Rowan, 2019).

commodities. But rather than monetary value deriving from either mark or metal, the question was what could best underwrite money's pledge to reproduce itself. So while Locke considers the stamp a 'public voucher' for the quantity of metal content,[17] only metal content could secure the function of "money as pledge". 'A bill, bond or other note of debt, I receive from one man, will not be accepted as security by another… nor can by public authority be well made so… because a law cannot give to bills that intrinsic [if imaginary] value, which the universal consent of mankind has annexed to silver and gold' (1691, p. 12).[18]

Law on the other hand assigned the metal content of coinage double uncertainty due to marketable value of specie and sovereign debasement: 'Silver Money is an uncertain value; because liable to be alter'd in the fineness or denomination by the prince' (Law, 1705, p. 32). His paper money proposal sought to guarantee monetary stability by 'lend[ing] notes on Land Security, the debt not exceeding one half, or two thirds of the value, and at the ordinary interest' (p. 372). Against Locke's distinction of credit and money,[19] he sets credit money as proper money but retains money's definition as security in so far as money is the 'most secure value, either to receive, to contract for, or to value Goods, by', that is, to assure monetary stability. Foucault's (2010 [1966]) account of this debate in *The Order of Things* thus sees both advocates of money-as-sign and advocates of money-as-commodity arguing from a common basis of understanding money as pledge: 'The conflict between Law and his critics concerns only the distance between the pledge and what it is pledging' (2010 [1966], p. 198). The difference lies in whether the correspondence of mark and value – that is, so to speak, of *symbolon* and *horoi* pledges – which in turn guarantees the standard of measure and the power to represent wealth, is guaranteed by the material reality of money or a value outside money. Drawing on Shell as well as Foucault, Vogl (2002) describes the problem of money in later 18th century theories of money and price as a perceived conflict between the initial and final mutuality of *symbola* and the closed circle of contract on the one hand, and the marketable

[17] 'The stamp is a mark, and as it were, a public voucher, that a piece of such denomination is of such a weight, and of such a fineness, i.e. has as much silver in it' (Locke, 1695, p.84).

[18] Bills are 'liable to unavoidable doubt, dispute and counterfeiting and require other proofs to assure us that they are true and good security, than our eyes, or a touchstone' (Locke, 1691, p. 12).

[19] 'Credit will supply the defect of it (money) to some small degree, for a little while. But, credit being nothing but the expectation of money within some limited time, money must be had, or credit will fail' (Locke, 1695, p. 87).

value of specie on the other. Money is both a contractual expectation with no risk ('permanent pledge and pawn') and a variable commodity which 'can only measure value due to the fact that it has a price itself' (2002, p. 123). These two contrary movements converge in the same object, rendering money a 'duplication of witness and object of exchange' (2002, p. 118). The security of pledge, that is, the monetary power to return an equivalent, rests neither exclusively on the validating mark of the Prince, nor on precious metal: in the classic age of representation, money's signifying power derives from circulation and exchange rather than preciousness and varies with the quantity of specie on the one hand and the quantity of wealth on the other. If commodities exceed the quantity of metal, 'each metallic unit will be slightly more heavily mortgaged' (Foucault, 2010, p. 199) in terms of representative force. The problem of money consists in how to govern the relation between the nominal and real value of money and establish reliable relations through calculation (Vogl, 2002, p. 122). With the shift from the analysis of wealth to the analysis of production in the 18th century, money (as well as pledge) disappear from theoretical view in the nascent discipline of political economy and with the monetarist doctrine the task of government becomes one of '[making] sure that money actually is as neutral and insignificant as it is supposed to be' (Tellmann, 2011, p. 292).

Shadow money

In today's era of collateral-based finance (Coere, 2016), pledges are once more changing the shape of monetary spaces. Collateralized promises to pay have taken a central role in the financial architecture since the late 20th century in the form of repurchase agreements (repos). To recall, repos involve the sale of an asset with the simultaneous agreement to repurchase it at a specified time at the original price plus interest, or in other words, an exchange of cash for collateral. While the buyer obtains legal title, the seller retains economic ownership of the asset (ie liability for risks and rewards). The market value of the securities sold, or posted as collateral, is calculated daily and any loss of value compensated through haircuts and margin calls. Through this comprehensive collateral valuation mechanism, at par convertibility is maintained with settlement money at all times, making repo promises *shadow money* (Pozsar, 2014; Gabor 2016).

As Chick (2013) has argued, the 19th century saw the state enter into a 'social contract' with banks, agreeing to support bank money parity to state money and thereby removing convertibility risk from bank money creation. States guaranteed banks' pledges to their depositors through deposit insurance and access to central bank liquidity during times of crisis

(lender of last resort). In exchange for underwriting financial and monetary stability, states demanded control over money creation through regulation and monetary policy. Yet as this systemic insurance comes at a cost, private actors continually seek to circumvent the state's balance sheet and create pledges that credibly pledge moneyness. As Sissoko's contribution notes, repo proved an attractive funding mechanism as it seemingly transforms private debt obligations into 'safe' assets, offering greater safety than bank deposits which are only partly covered by state guarantees (Gabor, 2016), while at the same time avoiding the price the state implicitly charges for its underwriting services. Shadow money yet again presents a distinct constellation of the role of pledge in money creation:

First, today the single most systemic monetary liability is not a means of settlement but the credible promise of convertibility into a means of settlement, that is, *moneyness* (Gabor and Vestergaard, 2018). Convertibility depends on collateral liquidity and the permanent validation of pledge through the market. In market-based finance, as Sissoko demonstrates in her piece, temporary illiquidity cannot be hidden on banks' balance sheets but mark-to-market valuation forces actors to realise losses. The very relation which makes repo money – at par exchange between cash and collateral that finance has developed over last 20 years – also makes finance more fragile and liquidity events 'endemic' as radical uncertainty bites harder and faster.

Second, since the safety of private repo depends on explicit collateral valuation rather than implicit public guarantees, it is somewhat paradoxically grounded in government bonds, that is, the asset with the lowest fluctuation in value (Gabor, 2016). On one hand, this asks for conceptualising the role of the state in the creation of shadow money beyond the simple function of guarantor 'at par' that a broad definition of money alludes to. It requires new coordination between central banks and treasuries and a new 'social contract' in the making where the state 'needs to issue debt not because it needs cash but because private finance needs safe collateral' (Gabor 2016, p. 3). Here repo leverages the perceived safety of state debt which is both a result of historical accreditation (cf. Boy, 2014, 2015; Langenohl, 2015) and the focus of relatively recent regulatory efforts to establish government bond markets as foundation of financial stability (Gabor, 2016). On the other hand, money/ness thus takes the form of secured debt grounded in unsecured (but safe) debt. In the context of the Shell/ Rowlinson contention regarding the (in)visibility of (the security of) money, we now have a curious situation where security (collateral) has not become invisible in money creation, but moneyness in fact depends on the visible (mark-to-market) securing of obligation and permanent witness of the market.

‘Collateral-based money’ thus harnesses both the *implicit* backing of safe assets (based on the sovereign’s ‘ability and willingness to pay’, taxation, public credit) and the *explicit* backing of collateral, as well as legal (collateral) and economic (risk-free) notions of security and safety.

Yet thirdly, this is a form of secured debt that, as indicated above, legally takes the form of a sale (and repurchase agreement) of a security, that is, a separation of legal ownership and economic possession. Assets sold as collateral in a repo remain on the balance sheet of the seller even when they are rehypothecated. If collateral was moved off the balance sheet of the seller, it would disguise his leverage.[20] Rather than an esoteric feature of a niche market, this is a defining feature of contemporary finance: ‘both securitisation and repo markets are made possible by (the exploitation of) a distinction between legal and economic ownership’ (Gabor, 2016, p. 972). Interestingly then, one critical element of shadow moneyness rests on the same principle that Finley (1952) attributed to the Greek *horoi* stones: ‘Outward form, then, is sale, the essence hypothecation’. This discrepancy between legal form and the reality of the balance sheet has been described as a *legal fiction*. So Finley (1952) continues: ‘One is reminded of Maitland’s famous dictum on the mortgage deed: ‘That is the worst of our mortgage deed – owing to the action of equity, it is one long *suppressio verio* and *suggestio falsi*. [It does not in the least explain the rights of the parties; it suggests that they are other than they really are’ (Maitland, 1936, p. 182)].[21] Similarly, Hitzig (1895) terms it a ‘Scheinkauf’ – a fictitious, or ostensible, purchase.[22]

The ‘refreshingly ambivalent epistemological stance’ (Riles, 2010, p. 802) of the legal fiction results from it being a kind of knowledge that is consciously false and thus irrefutable (unlike a hypothesis that demands verification) (Vaihinger, 1924). A legal fiction – such as corporate personality – is a ‘known falsehood of practical utility that meets functional needs’. Courts thus see through this fiction: As Slovenko (1958) remarks, ‘the general rule of law is that if the purpose of a transaction is to transfer property for security only, then the court will hold the transaction a pledge, even though in form it may be a sale’ (1958, p. 62). This, in fact, had been the problem of repo in the 1970s and 1980s – as Sissoko (2010) has shown, the strong

[20] Lehman Brothers and MF Global are both culpable of this prior to the crisis.

[21] *Suggestio falsi* (suggestion of an untruth) = misrepresentation without direct falsehood – *suppressio verio* (suppression of the truth) = a tacit misrepresentation, a silent lie.

[22] To be distinguished from ‘Scheinkauf’ as criminal investigation tactic in black markets.

likelihood that repo agreements would be subject to Article 9 of the Uniform Commercial Code, 'applicable to any transaction (regardless of form) which is intended to create a security interest in personal property' (2010, p. 4), led to intense lobbying efforts on behalf of US repo lenders. As secured loans, repo would in bankruptcy be subject to 'automatic stay', that is, counterparties to a bankrupt firm would be prevented from selling the collateral. The success of lobbying efforts granted US repo lenders, and later swaps, exemption from given rules, or 'safe harbour', and permission to re-use collateral for their own purposes (short-selling, hedging, selling to a third party), effectively producing what Sissoko has termed 'the legal foundation of financial collapse' (Sissoko, 2010).

Collateral exposures

In post-crisis finance, collateral is no longer 'a tool of forgetting, of putting to one side' until future reevaluation (Riles, 2010, p. 803). The two articles in this section each explore this emergence into view in more depth. While Sissoko provides the broad contours of two different liquidity and safety regimes in bank-based and market-based finance systems, Spears offers a detailed empirical account of how the crisis has pulled collateral into financial valuation practices. Prior to the crisis, Spears observes, interest rates derivatives were discounted with reference to LIBOR, the rate that banks charge each other for short-term, unsecured loans. With the demise of LIBOR as risk-free anchor of valuation, quants at dealer banks turned to discounting the cashflows of collateralised derivatives – that is, secured lending – as the relevant OIS (Overnight Indexed Swap) rate. The organisationally and cognitively separate activities of collateral management and derivatives pricing – into back and front office, legal and financial orders of knowledge – had provided the starting point for Riles' (2010) empirical challenge to the SSF's exclusive focus on modelling cultures. Spears' analysis, one might say, suggests that her call for connection was unwittingly heeded first and foremost by financial practitioners themselves. The inclusion of collateral knowledge into quants and traders' own practices has led to profound changes in quants' modelling culture, the complexity of which, he argues, threatens the very existence of interest rate derivatives markets.

In the context of Sissoko's analysis, this shift from unsecured to secured lending as epistemic foundation and measure of liquidity may be seen as a counterperformative effect of the neoclassical foundation of market-based finance more generally. Ironically, she argues, the stability and liquidity of bank-based finance had the effect of breeding a theory that *assumed*

liquidity and saw no need for pricing it. In the move to market-based finance, the financial system evolved to rely so heavily on market liquidity that it is now 'designed' to cause liquidity to fail. Here the contractual structure of repo making debt *too safe* for creditors through overcollateralization, safe harbour and the right for collateral calls plays a crucial role. The persistent instability resulting from the extraordinary protection provided to lenders by borrowers in repo also explains the decline of the risk-free interest rate and excess demand for safe assets even in normal times, as these assets are supposedly immune to liquidity crises (see also Gabor, 2016). This view corroborates Spears' findings: derivatives markets were initially founded on the assumption of bank-sourced liquidity – that is, on the ability of dealer banks to borrow and lend at LIBOR – an assumption that was gradually undermined with the growth of market-based lending. Yet two somewhat different takes on liquidity also emerge: if Sissoko held the neoclassical abstraction from the liquidity-stabilising function of bank-based systems to be the epistemic cause of the instability of repo-based finance, Spears sees the abstraction from the legal underpinnings of derivatives trading – that is, from the back office – entailed by LIBOR discounting as *enhancing* liquidity. His conclusion that the attempt of market participants to make collateral itself the social basis of liquidity by standardising its features has been of little success, however, concurs with the endemic illiquidity of repo described by Sissoko.

Conclusion: a new agenda for security

This discussion has given a brief conceptual overview of the pledge of collateral and its relation to the pledge of money in three historical constellations. The first moment depicts the two pledges of *symbolon* and *horoi* as somewhat distinct security devices for a contract. The *symbolon* pledge secures an obligation or bond by establishing and proving its validity, which is paradoxically confirmed in the act of discharging or spending it, as for instance in exchanging a *symbolon* for the financial reward for voting in the Athenian assembly. *Horoi* stones on the other hand designate a relationship of unequal value and serve to re-establish and secure equality of value in the future, that is, the repayment of debt. The two are further distinguished in that when *symbola* circulate 'unsecured' as marks of debt, they acquire a performative, internalised pledge of value and come to stand for the transaction itself. The equivalent value pledged by *horoi* on the other hand must remain separate in order to secure against the contingency of the obligation, even if this separation is conceptual since in sale-for-repurchase, the property is 'sold' in exchange for 'cash', acting as security for its own purchase

price. In 17th – 18th century pledge theories of money these two aspects become entangled in money as 'duplication of witness and object of exchange'. The monetary power of pledge to secure equivalent value is based on the correspondence of nominal and real value: this correspondence is threatened both by arbitrary violations of government's own truth claim through debasement as well as by the variable marketability of metal – which however at the same time constitutes the source of its value. While also securing through value, metal here however performs a constant security in contrast to the contingent activation of the pledge of *horoi*. The 19th century 'social contract' which sees the state underwriting private money creation shows that the unsecured circulation of pledges is underwritten by the function of lender of last resort, an arrangement which is receiving a distinct re-articulation in the age of market-based finance. In *shadow money,* the monetary power to recall equivalent value rests on repo claims backed by tradeable collateral, promising unconditional convertibility into settlement money. In combining secured debt with safe debt, repo marries the legal fiction of sale with the economic fiction of creditworthiness, yet the 'as if' of safety and collateral refers to the precise opposite: for safe assets the fiction means being considered risk-free,[23] while Riles reads the fiction of collateral underlying rehypothecation in swap agreements to act as if the debtor has already defaulted, that is, 'as if the collateral already belongs to [the counterparty] in the present … giving it full rights over the collateral' in a 'perspective from the end' (2010, p. 802, 803). Yet together these fictions produce the 'as if' of moneyness, and as Sissoko shows, the excessive safety of repo now in a sense drives excessive demand for safe assets. The new regulatory demands of market-based finance have become explicit with the financial crisis. The fact that credit markets are driven by trust in collateral rather than trust in banks, demands a radically new role for central banks to back collateral, rather than bank, liquidity (Dooley, 2014). At the same time, the crisis has produced in Spears's words a 'fragile

[23] Safe assets 'can work as conventional legal fictions, for example, when it comes to the legislative, regulatory, or judicial designation of certain financial contracts as risk-free' (Gelpern and Gehrling, 2016, p. 6, n. 11). Nonetheless these authors 'hesitate to sweep the entire safe asset phenomenon under the heading of *legal* fictions because the role of market practice in the life of safe assets goes beyond the familiar realm of legal fictions' (ibid). The fiction of creditworthiness underlying safe assets is less a negation of given affairs by the 'as if' principle than the result of a complex process of historical accreditation in which literary genres of fiction have played an important role (cf. Brantlinger, 1996; Boy, 2014).

infrastructuralisation' of collateral in practices of financial valuation which once more evokes the close relation of epistemic and economic pledge. In stepping into the open, collateral also calls forth the broader spectrum of securing contracts that is so curiously absent from the modern bodies of knowledge and yet remarkable for its constant presence in human history. Further study of the entanglement of legal and economic security, of real security and personal security and of (visible) security and (invisible) safety is needed.