



**A Review of ARJUN APPADURAI, *BANKING ON WORDS:  
THE FAILURE OF LANGUAGE IN THE AGE  
OF DERIVATIVE FINANCE.***

**Chicago, IL: University of Chicago Press, 2016, 180 pp.**

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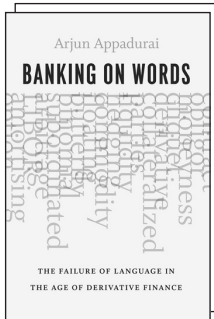
**Abstract:** The book under review is an attempt to understand the latest financial crisis of 2008–9 by analysing the derivatives market through the lens of economic anthropology. The book is more of an open invitation to consider the nature of modern financial market using the example of derivatives. It poses questions, such as the essence of market price, the border between risk and uncertainty, the fair share of financial sector in the economy, but it does not provide the answers. Considered from an economist's point of view, Appadurai's book lacks a clear understanding of the economic gist of the phenomena under study. This, alongside with incorrect and mixed up usage of economic terms and absent understanding of the latest developments of economics science, makes the book a difficult reading for professionals beyond economic anthropology and related fields. However, the questions posed in the book and the opinion from outside of the economic science will provide food for thought for those economists who get through the mentioned difficulties.

**Key words:** derivatives, financial market, risk, uncertainty, economic anthropology.

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**Arjun Appadurai**, *Banking on Words: The Failure of Language in the Age of Derivative Finance*. Chicago, IL: University of Chicago Press, 2016, 180 pp.

The book under review is an attempt to understand the latest financial crisis of 2008–9 by analysing the derivatives market through the lens of economic anthropology. The book is more of an open invitation to consider the nature of modern financial market using the example of derivatives. It poses questions, such as the essence of market price, the border between risk and uncertainty, the fair share of financial sector in the economy, but it does not provide the answers. Considered from an economist's point of view, Appadurai's book lacks a clear understanding of the economic gist of the phenomena under study. This, alongside with incorrect and mixed up usage of economic terms and absent understanding of the latest developments of economics science, makes the book a difficult reading for professionals beyond economic anthropology and related fields. However, the questions posed in the book and the opinion from outside of the economic science will provide food for thought for those economists who get through the mentioned difficulties.

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It should be stressed that from the point of view of innovation in the field of anthropological theory this book should be evaluated by specialists in that discipline, and it may be assumed that this has already been done in the various reviews of the book that have appeared (see, for example: [Fraga 2016; Maurer 2016; Chandra 2017]). What is offered here is entirely an economist's view.

From an economist's point of view, the book poses a number of important questions which are being widely discussed at the moment within the economists community, and an outside viewpoint may be of interest. At the same time, a number of elements in the book will seem debatable, not to say peculiar, to an economist. First we shall formulate the basic theses, as reckoned by an economist, and then see what, on the whole, he or she might derive from *Banking on Words: The Failure of Language in the Age of Derivative Finance*.

As far as one can understand from the introductory chapter and the text of the book itself, Appadurai proposes to examine derivatives

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(contracts, money, banks, debts...) through the prism of contracts, which represent a certain linguistic communication which is liable to distortions of the meaning which it originally contained, and to examine the derivatives market as a certain series of rituals (bargaining leading to concrete deals) which allow its immanent uncertainty to be reduced to a certain (incomplete!) certainty, but only at the circumscribed moment when the ritual is conducted and for a short time thereafter. In particular, Appadurai notes that whereas derivatives were originally contracts intended to reduce the risk of conducting business, as a result of the development of financial markets over the last thirty years derivatives have appeared that bet on a contract's not being fulfilled.<sup>1</sup> It is here, in Appadurai's opinion, that linguistic failure and the defeat of derivatives occur: instead of profiting from the fulfilment of a contract, the parties profit from its non-fulfilment.

At a first reading it might seem to an economist that there is nothing relevant to solving the problems faced by economics here, and there is a high probability that once the introductory chapter has been read, the book will be laid aside as offering nothing of interest. However, by reading on — as well as by reading the introductory chapter more attentively — one will be able to identify a number of intriguing elements that are intimately involved with current debates, above all in the field of economic methodology.

There are several reasons why this book is hard reading for an economist. The first and perhaps the most important is that many of the concepts under discussion will be new to an economist. While most economists will have heard of Weber, who explained the genesis and evolution of capitalism by the Protestant work ethic (usually understood as frugality, carefulness and the investment of profits in production as the cardinal virtues), they will associate the names of Durkheim, Mauss, Austin and Lévi-Strauss with sociology or anthropology, but by no means with economic theory. From an economist's point of view, a new interpretation of Durkheim's theory, or a comparison of it with Weber, is not particularly interesting, as it does not add much to our understanding of the market, the economy, or finance. It is the particular details that crop up in the discussions as secondary notions that are more valuable.

For economists, the most familiar and comprehensible element of Appadurai's book will be the question of the correlation between risk and uncertainty first distinctly formulated by Frank Knight in 1921, which has become a sort of mantra for economists [Knight 1921].

<sup>1</sup> This relates to CDS (credit default swaps), which are contracts somewhat resembling insurance against the non-fulfilment of contractual obligations by a particular party.

Since Appadurai writes a great deal about Knight,<sup>1</sup> and also about risk and uncertainty, it is worth considering in greater detail how these concepts are used by economists.

To simplify, one might say that risk is that which could be quantified, and uncertainty is that which cannot be expressed mathematically and with some specific probability distribution. On the financial markets, of which the market in derivatives is a part, risk is quantified by assigning securities (particular securities, classes of them or even the market as a whole) a certain probability distribution, the parameters of which are calculated on the basis of historical ranges of prices and which allows assumptions to be made about their expected profitability in the future, *provided the parameters of the probability distribution remain unchanged*.

The presumption that the parameters of the probability distribution do not change is key to the quantification of risk. It is obvious that this is a very strong presumption, because situations change all the time, new and previously unconsidered factors arise, and so on, and economists are practically constantly trying to find ways of weakening it. They use the most diverse means of doing this. The primary ones are complicating the features of the probability distribution that lies at the basis of price dynamics — the hypothesis that there are several (discrete) ‘regimes’ for the operation of the market (for example, a state of stability or a state of unfavourable shock) — changing the parameters themselves in accordance with a particular probability distribution, the introduction of various ‘shocks’, which are random values, and so on.

Another important direction of research in this field is the attempt to take into account what the participants in the market are thinking about the future dynamics of the market (or of particular securities). Expectations have been part of the economist’s arsenal for more than fifty years, but until recently they amounted to two basic alternatives: adaptive (based mostly on past experience) and rational (taking full account of all the available information, including the most up-to-date). It is easy to work with rational expectations: *on average* economic agents make correct forecasts about any economic variable. The hypothesis of rational expectations allows economic models to be greatly simplified. The problem is that expectations are by no means always rational, and this becomes particularly evident at periods of crisis, when the former patterns of behaviour on markets (including financial markets) cease to operate.

At present economists are actively working on combining the ideas of adaptive expectations (which often amount to probability

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<sup>1</sup> Knight is important for Appadurai in connection not only with the discussion of risk, but also with Weber, whom Knight translated into English.

distributions calculated on the basis of historical data) with an attenuated version of rational expectations — limited rationality of dynamically changing expectations depending on some external parameters. One promising idea here is that the rules for forming expectations change depending on the external surroundings. For example, in conditions of low inflation people are inclined to expect more or less the same amount of inflation in the coming period as in the one that has just been. There is no need to use complex forecasting models: one can simply assume that inflation will be the same as last month (quarter, year, etc.). If inflation takes off for some reason, economic agents may at first ignore the fact that their forecasts were wrong, and then they will start to correct their forecasts, taking the accumulated error into account, and if inflation grows into hyperinflation, their expectations will be rational.

The search for a way to describe such dynamically changing expectations is an important element in economics at the moment, and the main spheres for a potential application of new forms of description are the financial markets and macroeconomics. A promising direction in this field was recently proposed by Eric Barthalon [Barthalon 2014] on the basis of the ideas of Maurice Allais, winner of the Nobel Prize for economics in 1988. Allais' ideas resonate with certain speculations of J. M. Keynes, particularly those expressed in *A Treatise on Probability* [Keynes 1973 (1921)], that probabilities are liable to change depending on the accession of new information. We should note that Knight's work was written in the same year, 1921, and that both books came out some years before the appearance of a precisely formulated theory of probability in Kolmogorov's axiomatics. Kolmogorov's probability theory, which is highly suitable for the exact sciences, must evidently be modified when applied to the social sciences, and this is gradually being done, though not in such a radical form as a revision of the axioms of probability theory.

As for risk, economists are inventing ever more sophisticated ways of taking it into account, but this does not mean that uncertainty has been done away with. Keynes, and many of his followers, call uncertainty an immanent property of the economic system: we know that the modern economy evolves cyclically, but we cannot predict the beginning and end of a cycle, the moment when the tendency changes, with any degree of certainty; we know that new technologies evolve and that products, services and whole markets constantly appear and disappear, but we cannot predict which technological innovations will receive recognition. This means that the field of events — an important part of the axiomatics of probability theory, which enumerates all possible events — is constantly changing in economics (as it is in any other social phenomenon). After the crisis of 2008–9 this immanent uncertainty, often called Knightian

uncertainty, or more recently radical uncertainty, has once again been at the centre of economists' attention and has led to the series of attempts at a more correct account of risk (and thus a reduction in uncertainty) described above.

Uncertainty should not be confused with so-called 'black swans' — events which are either highly unlikely (but nevertheless expected and therefore theoretically included in the calculation of risk) or else not included in the original field of events but subsequently, *post factum*, rationalised and included as an 'afterthought' in the range of improbable events that were accounted for in the original calculation of risk. The concept of the 'black swan', proposed by Nassim Taleb in his work of 2007 [Taleb 2007], supposes that there is no separation between risk and uncertainty in its Knightian sense; it is a debatable concept and may be included amongst the attempts to improve the evaluation of risk (and / or expectations) described above.

Economists thus have a quite definite idea of what risk is, and what uncertainty is, and also of the limits affecting the calculation of risk in each particular case. In his work Appadurai also appeals to Knight's seminal work which distinguishes the concepts of risk and uncertainty, but the way he discusses both concepts is unusual for an economist.

For an economist the most interesting idea in the book regarding uncertainty is not Appadurai's but Elie Ayache's. In his work *The Blank Swan: The End of Probability*<sup>1</sup> [Ayache 2010] he proposed that the price that emerges in each particular deal involving derivatives should be regarded as a separate event which has nothing in common with previous prices for the same asset. In Ayache's opinion, the fact that the price of the deal is expressed as a number leads economists to the false perception of that price as part of a certain probability distribution of prices for that asset, the parameters of which could be deduced from previous values of prices.

Essentially, this assertion invites economists to pay close attention to what they understand a market price to be. When it is a matter of the price of some commodity (service, financial asset, etc.) traded on the market, economists suppose that competition leads to the appearance of some 'average market price' for the commodity at every moment of time. This does not mean that all buyers of the commodity on that market at that moment will buy it at that price. It means that that is what the price of the commodity will be on average. And it is this average price that economists use in the models that they examine.

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<sup>1</sup> The book's title explicitly refers to the work of Taleb, who wrote a favourable review of it despite the criticism of his own work that it contains.

However, Ayache draws our attention to commodities for which there is either no market at all, or only a very limited one: he develops his theory on the basis of his own experience in trading options, a significant proportion of which are traded on the over-the-counter market, which in practice means a deal between two parties who have agreed to enter into an options contract.<sup>1</sup> In this case we cannot speak of a market or a market price in the sense in which economists understand these terms. Nevertheless, economists speak of a market in options even when the options are traded over the counter. In such cases the price of options contracts is determined by asking the parties who made the deal, or else indicated on the basis of some *evaluation* of what it ought to be.

The real price of an option could be anything. This is the fact emphasised by Ayache, followed by Appadurai. Uncertainty arises, and in the case of the options market it is reinforced by further uncertainty: whether a second party for the deal will be found, whether the option will be exercised by the second party when the time elapses, whether the parameters of the option can be successfully negotiated, and so on.

It should be emphasised that when the price of a particular deal is agreed between the buyer and seller and is not divulged by the parties, the concept of market price ceases to be clearly defined. This relates not only to certain derivatives markets (primarily options, swaps and forward contracts; futures are most often traded on the exchange), but also to the markets for many ordinary physical commodities, such as oil. We are used to hearing about the price of oil almost every day, but few of us pay any attention to what sort of price that is. In fact it is most often understood as the price of a futures contract for oil, traded on the New York or London stock exchanges. This does not at all mean that oil is actually being sold for that price (or one close to it) in deals that are really being closed on that day. One can retrospectively discover the price of oil in a particular segment by, for example, analysing customs declarations and finding out the price at which, on average, Russia exported oil over a particular period. We do not, however, know the price in real time or for each individual deal.

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<sup>1</sup> An option is a derivative according to which the buyer of the option has the right, on a certain date, to buy from the seller, or sell to the seller, the asset on which the option is based at a previously agreed price. We stress that the buyer of the option has the right to exercise the option, but (s)he may decline to do so, if it is more profitable for him / her to buy / sell the underlying asset on the relevant market at the current market price. For having such a choice (option), the buyer of the option pays a premium to the seller. Most options, both for financial instruments and for commodities (such as oil, coffee, etc.) do not presuppose an actual purchase or sale of the commodity at the date when the contract expires, but only the transfer of the appropriate sum of money from one party to the contract to the other.

This is an important aspect of methodology, which has not yet been fully assimilated by economists and financiers (for the distinction between economics and finance, and Appadurai's commentaries on the subject, see below). In a certain manner uncertainty 'trickles down': from uncertainty in the macroeconomic sense we descend to the uncertainty on the microlevel of each particular deal. In addition to this, the questions of the gathering of information, its initial processing and the quality of statistics once again arise. From here it is but one step to the position that economists should stop trying to make exact forecasts (for example, forecasting a country's economic growth to an accuracy of 0.1%, which is far below the statistical margin of error), and only indicate the general tendency that is to be expected.

What has been said above shows that the problem raised by Ayache with regard to the market in derivatives (in the first place, options) may be considerably extended and applied, if not to all markets, then at least to many of them, including commodities traded on the exchange, the assets of the financial market (and not only derivatives) and even a whole range of other goods and services. While Ayache's book's concentration on derivatives is evidently logical, since the author is relying on his own experience, the explanation why the emphasis is on derivatives in Appadurai's book can only be that he is trying to show that the whole enterprise of derivatives has come to a dead end with the appearance of CDS.

Let us remind ourselves that CDS is a derivative contract which leads to the payment of money in the event that one of the parties to a different contract (who may be entirely unconnected with the parties to the CDS) does not fulfil his / her obligations. In some respects this resembles insurance against an unfavourable result, with the difference that this insurance is not issued by a specialised insurance company, but is the result of an agreement between the two parties to the swap.

Appadurai supposes that the problem with derivatives that led to the crisis of 2007–8 belongs to the sphere of linguistic failure and is connected with CDS: 'They not only pile promises on promises, as all derivative contracts do, but actually allow one group of debtors to profit when one party to a different contract is unable to fulfil his obligations' (p. 152). In his opinion, this turns the logic of a contract upside down: instead of the fulfilment of obligations leading to monetary gain for one or both parties to the contract, there arises a contract for the obligation not being fulfilled. Herein, in Appadurai's opinion, lies the linguistic failure of all derivatives.

It is hard for an economist to agree with this assertion. Firstly, insurance against various kinds of negative consequences, including



the non-fulfilment of obligations by one party, is not, in principle, a new type of contract. What is new here is only that such contracts have been concluded by passing the insurance companies, on different principles of risk calculation, a number of the assumptions of which have proved erroneous. Secondly, Appadurai's book silently presumes that derivatives are the outcome of the last thirty years' deregulation of the financial system, which is essentially untrue. Derivatives have existed for some time, but over the last thirty years information technology has allowed a multitude of special derivatives to be invented and implemented which it would have been hard, purely technically, to introduce before the appearance of modern communications systems and computers.

Here we come to the book's ideological underpinning. Appadurai makes it quite clear that he is an ideological opponent of modern financial capitalism. In his opinion the existing world order is unjust and allows a small group of people to enrich themselves at the expense of the rest. It is hard for an economist to comment on his proposals for creating a juster society, because he uses extremely abstract terms in this discussion, but it is impossible not to notice serious gaps in his argumentation regarding the injustice of the modern financial system.

Appadurai repeats insistently that the appearance and evolution of derivatives has led to the creation of wealth in the financial sphere on a scale previously unthinkable. There is a certain subtlety here: wealth is created in the sphere of the production of goods and services, while the financial market does not create wealth, it merely redistributes it. When the buyers of certain securities lose their investment, and the buyers of others make a profit, this is only a process of the redistribution of monies that have been earned or borrowed against future income. Wealth is created or destroyed in the course of the activity of those firms, individuals and states whose securities circulate on the market.

The financial market redistributes monies among economic agents, it does not create liquidity (another of Appadurai's mistaken assertions in the eighth chapter). Liquidity is created by the banking market, which, strictly speaking, is not part of the financial market, and until recently these two markets have been regulated by separate authorities in almost all countries. Only banks (both central banks and commercial banks) can create money, which is a synonym for liquidity. Securities of any other kind only allow the redistribution of liquid assets from those who have an excess of them to those who are short of them. We emphasise again: the creation of money and liquidity and their redistribution are not in themselves the creation of wealth. However, services to create liquidity and its redistribution do increase the wealth of society, and therefore the profit of the

financial sector is part of society's wealth. It would thus be more correct to criticise the growth in profits of the financial sector<sup>1</sup> and the shift in its favour of the distribution of the overall wealth in the economy.

In this connection there is another subtlety, of which economists themselves, let alone anyone else, are hardly aware: the difficulty in determining profit in the financial sector. In the sphere of services any evaluation of expenditure is to a large extent arbitrary, and in the sphere of financial services particularly so. This is connected with the impossibility of putting a specific value on each particular financial service (for example, the transfer of money from your bank card to an internet retailer), and therefore it is hard to tell how much of what is earned by the banking and financial markets goes to cover expenditure and how much is profit. Economists have gradually been becoming aware of the problem of evaluating the share of the financial sector in the economy as one of the most important problems: it is on the basis of the evaluation of this share that the most ardent critics of the existing system derive their arguments, while the banks, insurance companies and the largest players on the financial markets base their own importance (and the necessity of supporting them through difficult financial circumstances) on this share. However, this problem is significantly wider than the problem of the distribution of various derivatives.

It is evidently this failure to understand that the financial sector is essentially an intermediary that has prevented Appadurai from proposing solutions connected with crypto-currencies and blockchains as 'medicine' for the injustices that arise when the rich are getting richer and the poor are getting poorer. The financial markets and banking system, which were going through a difficult period, began to take a serious interest in bitcoin not because a crypto-currency threatened the banks' monopoly on the issue of money (private currencies of various kinds already existed and always will exist), but because an essentially new technology for information storage would considerably lower the need for intermediaries, and in some cases allow people to do without them altogether. Moreover, the ideological foundation of crypto-currencies appears to be close to Appadurai's outlook.

The book's text can quite predictably be criticised for using economic terms without explaining what precisely the author means by them. As a result terms are frequently used incorrectly. One of the hardest things for non-economists, as practice shows, is to make the proper correlation between the concepts of money, credit, debt,

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<sup>1</sup> Economists include in the concept of the financial sector banks, the financial market and the insurance companies.

and securities. Appadurai systematically substitutes the concept of credit for the concept of debt (particularly in the seventh and eighth chapters). But these are different concepts. Credit is a debt to a bank, against which the bank creates new money (liquidity). Debt has many forms, including credit and obligations in the form of bonds, promissory notes and many others. Debt is not identical with credit, money or obligations, still less with derivatives. It would be right to say that when a derivative contract is concluded, the parties take on certain obligations and / or rights, but from an economic point of view it is admissible to say that a debt arises only when the obligations cannot be fulfilled on time. We should take note that all these terms are also expressed by different words in English.

The author's correlation of price and worth, or value, is also problematic. Modern economics applies the term *value* either to models of consumer choice in which economic agents assess the value of the options open to them, or to finance, when it refers to the change in the value of money over time. In neither of these cases is there any question of identifying it with price. In identifying these two terms, Appadurai evidently follows the Marxist tradition (and the labour theory of value); however, given the difficulty in assessing expenditure in the provision of financial services noted above, such a correlation is incorrect.

As a random example of the misuse of an economic term we may cite the author's use of the concept of *backwardation* (p. 117). In finance, as applied to derivatives, this term means that the participants in the market expect that the price of the underlying asset of the relevant derivative contract will fall in the future. In a wider sense the term means a discount in the event of the delivery of goods sooner than initially envisaged in the contract. Appadurai, however, uses it to mean evaluations of the current and / or future price of a derivative contract on the basis of its past dynamics.

And indeed one would like to know which assets the author includes in the class of derivatives that he is discussing. In the course of the text one can most often conclude that it is basically about options (the author supposes that if he knows the term 'Black-Scholes equation' he understands the details of pricing this sort of asset, but his constant (mis)use of the term only underlines his ignorance of the question), or in certain cases swaps, and only very occasionally forwards and futures. But not everything that applies to options or swaps can be applied to other types of derivatives. The list of wrongly and incorrectly used economic terms, theories and hypotheses could be extended. Perhaps it would be worth recommending to authors who are writing on subjects at the boundaries of more than one discipline that they must include in their work a glossary giving

definitions of the basic concepts, so as to exclude the possibility of variant readings.

After reading this book one is left with a feeling of incompleteness, not only because it has been written largely to outline a problem area and possible lines of work, but also because a number of discussions are left in suspense. For example, four lines of argument are mentioned in the discussion of Ayache's book, after which three of them vanish from the examination without any comment (p. 85). Moreover, one of them — the management of liquidity (not the creation of liquidity!) — returns in the next chapter, but completely unconnected to the previous mention of it (pp. 140–1).

The discussion of Mauss's *The Gift*, regularly appealed to by Appadurai, is also left in suspense. However, when he discusses the necessity of a *return gift* in Mauss, the author makes no comment on the fact that in a number of European languages the word is used for the return on investments, credit, or securities, which emerges quite logically from the understanding of credit or investment as a 'gift' which requires a return.

Almost lost among the arguments is an interesting comment that finance as a part of economics has in the last thirty years been transformed from an 'ugly duckling' into a 'swan'. This really is so: financial economics has been transformed from a kind of book-keeping exercise into a serious discipline, competing with neoclassical economics for first place on the podium of the social sciences. What, one might ask, has prevented finance from developing within the framework of mainstream economics, particularly considering that the financial theory was founded by outstanding economists, and several Nobel Prizes have been awarded for financial economics?

The answer is very simple, but evidently only economists know it. Neoclassical economics, the kernel of the modern economic mainstream, takes no notice of what lies at the heart of every financial transaction, even the simplest — money. If one looks at a quite up-to-date macroeconomic model, one finds that money exists on a separate money market cobbled on at the side, which has no correlation with the financial market (on which, in macroeconomics, there is no money, only savings and investments), and that the need for credit has no correlation with the realities of the process of production. One of the results of the crisis of 2008–9 has been a gradual awareness of this failure by economists and specialists in the field of financial economics, and this is expressed in the appearance, slow though it is, of more realistic macroeconomic models.

One cannot help noticing the very evident repetition of the same ideas, and not only in different chapters, which could have served as

a reminder, but on adjacent pages in practically the very same words. This sort of style reminds an economist of American economics textbooks for beginners, in which one and the same idea is repeated five times with different amounts of detail. In this case the idea that ‘repetition is the mother of learning’ only makes one read the text less attentively.

In sum, we may note that the work does contain interesting problems which are relevant to present-day economics: the determination of market price, the separation of risk and uncertainty and the very possibility of this separation, the permissible share of the financial sector in the economy, the emergence of financial economics practically as a separate discipline. However, economists are aware of almost all these questions and are discussing them, and from an economic point of view there are no substantial ideas which would suggest a new direction of research for economists. Returning to one of the book’s central premisses, which amounts to the idea that a derivative is a promise expressed by means of language, an economist might remark that human language is distinguished from animal communication by allowing the expression of abstract concepts, which include, for example, derivatives, the financial market, money, and the confidence that is essential for their existence. It is not a question of where the idea of insuring oneself against the non-fulfilment of obligations comes from, but of where confidence comes from.

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