Beyond the Promise of Security: Uncertainty as Resource

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1. The Risk of Looking for Security

Living in a "risk society," exposed to the threat of possible future damages, we constantly look for security without ever finding it.[1] The only area that today seems to be able to offer a kind of surrogate security is the economy, in a fascinating but also very curious way. Confronting the possibility of damage—to our business, but also to our home, family, and even to our bodies—we are offered the opportunity to take out insurance coverage. You can insure your wedding, but you can also get insured against divorce, you can insure against the risk of being abducted by aliens, you can insure almost all parts of your body, and you can also insure insurance (through reinsurance). Insurance seems to have become the depository of our need for security in all areas—all risks, no matter how different and incomparable they are, are managed in the same form.[2] In many languages the name itself (in*sur*ance, Ver*sicher*ung, as*sicura*zione) shows that the insurance policy is expected to offer security against the uncertainties of the future.

1. On risk society, see Ulrich Beck, *Die Risikogesellschaft: Auf dem Weg in eine andere Moderne* (Frankfurt am Main: Suhrkamp, 1986), and Niklas Luhmann, *Soziologie des Risikos* (Berlin: De Gruyter, 1991). Risk research has shown long ago that security is an empty concept, in the sense that the denial of risk does not lead to security but only to a different kind of risk: those who choose not to speculate on the stock exchange do not risk losing their money with a hazardous investment, but they run the risk that it will lose value because of inflation, or that it is stolen, or of not getting the profits that speculation would yield. The same applies to all risks: in the face of an open future, you can never be sure that there will not be danger.

2. See Alberto Cevolini, "Die Einrichtung der Versicherung als soziologisches Problem," *Sociologia Internationalis* 48 (2010): 65–89.

Telos 170 (Spring 2015): 89–107.
doi:10.3817/0315170089
www.telospress.com

The insurance promises to protect against the eventuality of damages, and in this sense it should offer guarantees.

A closer look, however, shows that these guarantees are quite strange. The insurance does not ensure at all that the harm feared is not going to happen: you get sick even if you are insured, the house burns down the same, you can have a car accident. Indeed, the term "moral hazard" captures the fact that the probability of damage even increases: knowing to be insured, one tends to be less cautious, and therefore increases the risk of accidents. Put differently, the danger of the future increases. The car of the person who is insured against theft is much more likely to be stolen than that of the uninsured. Insurance merely guarantees that if the damage occurs, we are recompensed with money. This does not give us back our home or our health, but it does give us another kind of asset.

Curiously, this availability of money is interpreted practically everywhere in our society as a form of security. How can money offer an unspecified security, especially with regard to an unknown future? What is the link between the economy and the management of uncertainty?

In this essay I will address these issues, starting with the problematic (and itself uncertain) relationship of the economy with uncertainty (section 2). In general terms, the economy does not welcome uncertainty. It is seen less as an opportunity than as an annoyance, which is preferably ignored—and, if necessary, attempted to be neutralized. Moreover, the recognition of uncertainty by economists came quite late; much later, at least, than its discovery in other areas of society. Section 3 describes the forms developed by modern society (in the eighteenth and nineteenth century) to manage the spread of uncertainty. To the increasingly uncontrollable real reality, modern technologies for managing uncertainty have added other additional realities that are more controlled and reassuring, such as modern fiction and statistics. Both provide reliable references in a world that seems to get more and more elusive and complex.

But why is it the economy that people have eventually endowed with the hope of finding security? And what kind of security is this? Uncertainty concerns the future, and the fundamental tool of the modern economy—money—can be seen as a means of managing in the present an unknowable future. Section 4 deals with the temporal nature of money, and section 5 shows how finance takes this temporal logic to extremes. Selling and buying money, financial transactions actually buy and sell future availability.

Based on the use of models and sophisticated techniques of prediction, the present management of the future promises to offer a form of

security that turns out to be incapable of managing just the most fascinating aspect of uncertainty: the continuous production of an always open and unpredictable future, which depends on present decisions and actions but is not bound by them. While promises of "risk neutralization" must remain empty, there is an alternative approach to dealing with uncertainty. Rather than considering uncertainty as a threat that needs to be eliminated, this alternative approach values it as a resource. Section 6 discusses a concrete example of this change in attitude, which does not attempt to predict one or several possible future courses, but rather predicts and encourages the multiplication of surprises, and thus prepares people to face and learn from them.

2. The Discovery of Uncertainty

Economic theory has only recently discovered uncertainty. At first sight this claim may be counterintuitive. After all, the issue has been present for nearly a century, at least since Frank Knight's book of 1921, which is now an essential reference for all thought on the topic.[3] For a long time, however, the problem of uncertainty was seen as secondary and kept distant from mainstream economic theories. This changed only with the diffusion, in recent decades, of "information economics." Its many proponents, including Nobel laureates George Stigler, Alfred Stiglitz, and George Akerlof, arrive at uncertainty through the analysis of information and its economic relevance.

Information and uncertainty are apparently different issues. If one reflects on the concrete use of information, however, one soon comes to see that actors actually always operate with imperfect, i.e., incomplete and deficient information.[4] At the moment of decision, they never have

3. See Frank H. Knight, *Risk, Uncertainty and Profit* (London: The London School of Economics and Political Science, 1921). Keynes of course knew the problem of uncertainty, and so did a group of scholars of high reputation but often of limited fame. Cf. G. L. S. Shackle, *Uncertainty in Economics and other Reflections* (Cambridge: Cambridge UP, 1955); Paul Davidson, "Some Misunderstandings on Uncertainty in Modern Classical Economics," in *Uncertainty in Economic Thought*, ed. C. Schmidt (Cheltenham: Edward Elgar, 1996), pp. 21–37; Hyman P. Minsky, "The Financial Instability Hypothesis: Capitalist Processes and the Behavior of the Economy," in *Financial Crisis: Theory, History and Policy*, ed. C. P. Kindleberger and J. P. Laffargue (Cambridge: Cambridge UP, 1982) pp. 13–39; and Brian J. Loasby, *Knowledge, Institutions and Evolution in Economic*s (London: Routledge, 1999).

4. From a sociological viewpoint the very expression "imperfect information" sounds curious: in the social field, information is always incomplete because it concerns the

all elements available. Decisions are therefore not made under conditions of certainty and complete rationality, but rather under conditions of uncertainty. For this reason information and uncertainty are linked. This concerns, above all, situations in which one observes a dependency among actors ("adverse selection") or an influence of the conditions of observation on the rationality of the decision ("moral hazard"). We see this with particular clarity in cases where one cannot observe the world (the information) without taking into account the perspective of the observer. Uncertainty is, in any case, likely to expand: once discovered, it spreads relentlessly to all aspects of decision-making and economic behavior. This is because the value and the sense of information always depend on how the others consider and use it, which is something one can never predict.

Even if we go back to Knight and Keynes, the discovery of uncertainty in economics occurs much later than the eruption of the topic in society as a whole, where it had fascinated people for centuries and posed knotty dilemmas. The era of uncertainty, in fact, was initially the Baroque age—that rich and complex period between the second half of the sixteenth and the first half of the seventeenth century, in which Western society was faced with the dissolution of the image of society and cosmos as a compact unit that in different ways had been taken for granted until the early modern era.[5] Gone was the idea that the natural and social world is structured by a single, certain, and unchanging order that humans would grasp if only their imperfection did not bind them to their doubts and errors. For those who were able to grasp it, information was believed to be perfect and univocal—one simply had to collect enough data, which, if correct, would all be in agreement. Uncertainty, where found, was only a problem

relations between individuals who are mutually dependent on each other—we say that they operate under conditions of "double contingency" (Talcott Parsons, "Interaction: Social Interaction," *International Encyclopedia of the Social Sciences*, vol. 7 [New York: Macmillan Co. & The Free Press, 1968], p. 436). The information is not therefore "imperfect"; rather, it is the only form of information available—and its incompleteness is the foundation of the very possibility of the social. This necessary incompleteness is symbolized by the "blind spot," a partial blindness that is the condition for being able to see. See Heinz von Foerster, *Observing Systems* (Seaside, CA: Intersystems Publications, 1981), ch. 12. On the relationship between information and uncertainty in the economy, cf. Norman Clark and Calestous Juma, *Long-Run Economics* (London: Pinter, 1987), pp. 88ff.

5. See Erwin Panofsky, *Idea: Ein Beitrag zur Begriffsgeschichte der älteren Kunsttheorie* (Leipzig: Teubner, 1924); Frank J. Warnke, *Versions of Baroque: European Literature in the Seventeenth Century* (New Haven, CT: Yale UP, 1972); Gustav R. Hocke, *Die Welt als Labyrinth: Manier und Manie in der europäischen Kunst* (Hamburg: Rowohlt, 1977).

of men and of their limited capacity, and did not concern the world or the ultimate order of society. The world was and remained certain, even when human understanding was uncertain. Hence, uncertainty in itself was not a relevant issue deserving special attention; it was relegated to the studies of opinion and persuasion—separate and minor areas compared to the primary interest of investigating the truth.

For various reasons—which sociology has highlighted and continues to study[6]—the transition to modernity establishes a radically different approach in which uncertainty is promoted from a superficial to a central concern of society. Surface itself, understood as appearance, becomes autonomous and relevant. New visual techniques, such as trompe-l'œil and perspective, demonstrate that appearances can be seen as independent from any correspondence with the real world. They can build a consistent world of their own. The Baroque era is a period of constant experimentation with paradoxes and appearances, deceptions and illusions.[7] The growing awareness of the irreducibility and reality of uncertainty is accompanied by a strong sense of anguish. Uncertainty becomes a constitutive given of the world, which is not solely dependent upon human limitation and cannot be eliminated by any superior vision or by the gathering of information, because it concerns the fact that the world is made not only of objects but also and above all of individual observers. These observers face the objects and the other observers from their unique and irreducible perspective. Neither is there, nor can there be, a vantage point that would condense the variety of observers into a single, correct perspective. A world of observers is never univocal and never certain; it changes over time and with the diversity of points of view.

This change of approach is particularly evident in reference to time. In pre-modern societies the relationship with time relied on an underlying certainty, even if men faced an obscure future and a past full of gaps. The authentic dimension of time, however, was considered to be an eternity in which everything was fixed and necessary, from presently known past events to still unknown future facts. From the (divine) perspective of

6. See Niklas Luhmann, *Gesellschaftsstruktur und Semantik: Studien zur Wissenssoziologie der modernen Gesellschaft*, vol. 1 (Frankfurt am Main: Suhrkamp, 1980), and Luhmann, *Beobachtungen der Moderne* (Opladen: Westdeutscher Verlag, 1992). See also Anthony Giddens, *The Consequences of Modernity* (Cambridge: Polity, 1990).

7. See Jean Rousset, *La littérature de l'âge baroque en France: Circé et le paon* (Paris: Corti, 1954), and Dorinda Outram, "Masks, Truth, and Nostalgia: Enlightenment Problems and Our Responses," *Figurationen: Gender Literatur Kunst* 2 (2000): 93–107.

eternity, past, present, and future were contemporary and could all be contemplated at the same moment. It was only to man, reduced as he was to the limited perspective of *tempus*, that time revealed itself gradually with the passing of the years and could thus reserve surprises. Such surprises were the corollary of imperfect knowledge.

Our sense of time is profoundly different, articulated in the horizons of a past that is no longer here and a future that is not here yet—and it is not here for anyone, not even for a superior being. No one can know in advance what will happen in the future, because the future is built by our actions and our expectations, in an ever different and surprising way. Today the future events do not exist in any sense, not even in a transcendent one: the future exists only as a horizon of a present. That horizon provides an orientation for making decisions and choices of behavior.[8] The future is the realm of uncertainty par excellence: its uncertainty is radical and unavoidable, for it derives from our actions and projects, and simultaneously tends to thwart these projects by producing innovation and surprises. The open future of modern society is the recognition of a fundamental and irreducible uncertainty, and surprise is not the consequence of poor information: the better you are informed, in fact, the more radical and instructive the surprises will be.

3. Reality Doubling: Fiction and Statistics

The different ideas of time reflect the difference between a kind of inessential sense of uncertainty and one that is radical and cannot be eliminated. As mentioned above, this latter uncertainty was discovered by modern society in the sixteenth and seventeenth century. Only the Baroque age, in fact, faced the problem of radical uncertainty directly. This explains why people reacted with anguish and humor, and experimented with deceptions and masking, artifices, and metamorphoses.[9] Later times developed forms of managing uncertainty that made it possible to contain the spread of arbitrariness and instability. However, if the underlying change was the transition from an ordered cosmos to an unstable and contingent world, all later forms had to reckon with a more complex and articulated sense of reality.

8. See Luhmann, "The Future Cannot Begin: Temporal Structures in Modern Society," *Social Research* 43 (1976): 130–52, and Luhmann, *Gesellschaftsstruktur und Semantik*, pp. 235ff.

9. See Elena Esposito, *Die Verbindlichkeit des Vorübergehenden: Paradoxien der Mode* (Frankfurt am Main: Suhrkamp, 2004), ch. 3.

In reaction to the uncertainty of reality, reality was multiplied.[10] The problem of reality is different when the issue is not only to differentiate what is real from what is not (for example, illusion, deception, falsehood), but also and above all to distinguish several forms of reality, all real in their own way but different from each other. The difference between immanence and transcendence is one example, the differences among the various forms of *Realitätsverdoppelung* (reality doubling) are another.[11] One of these forms of reality doubling is fiction, as we can see in the "bourgeois novel" that emerges at the end of the seventeenth century. The novel narrates fictive events of invented characters. Regardless of this fictitious feature, however, what is written is not a lie.[12] It is rather a more complex way to articulate reality inside itself, "doubling" it in a real reality and in a fictional reality that does not exist in the full sense but has its own structure and criteria. Although Robinson Crusoe never existed, it would be wrong to infer that he is a woman or a nobleman, and it would not be correct to say that his story takes place in Paris. Fiction creates its own references and its own world, which must be consistent and recognizable.

As people began to observe at this time, the fictional world must be "realistic." It must be explicitly presented as an invention, and precisely for this reason must have features that lead the reader to think "it could be real."[13] Apparently only an avowedly unreal world can be realistic. Previous narratives were not a true doubling of reality but kept a vague relationship between the narrated events and the real world.[14] The characters (heroes of the ancient epic, knights of the round table, saints and holy

10. See Esposito, *Die Fiktion der wahrscheinlichen Realität* (Frankfurt am Main: Suhrkamp, 2007).

11. See Luhmann, *Die Religion der Gesellschaft* (Frankfurt am Main: Suhrkamp, 2000), pp. 58ff.

12. See Ian Watt, *The Rise of the Novel* (London: Chatto and Windus, 1957); Leonard J. Davis, *Factual Fictions: The Origins of the English Novel* (New York: Columbia UP, 1983); and Alissa G. Karl, "'Bank Talk', Performativity and Financial Markets," *Journal of Cultural Economy* 6, no. 1 (2013): 63–77; here, p. 64. Already Philip Sidney was aware that fiction does not lie: "Now for the poet, he nothing affirmeth, and therefore never lieth" (*Defense of Poesie* [1595], in *Prose Works*, vol. 3, ed. Albert Feuillerat [Cambridge: University Press, 1962], p. 24).

13. As Mary Poovey observes, novels were and remain popular "paradoxically … because they seem to refer to the actual world" (*Genres of the Credit Economy: Mediating Value in Eighteenth- and Nineteenth-Century Britain* [Chicago: Univ. of Chicago Press, 2008], p. 21).

14. See William Nelson, *Fact or Fiction: The Dilemma of the Renaissance Storyteller* (Cambridge, MA: Harvard UP, 1973).

figures), whose stories often referred to real historical events, experienced unrealistic adventures that were quite different from real life events. These fictional worlds abounded with spells and divine interventions, extraordinary acts, and superhuman abilities. The stories were related to reality not by way of their plausibility—they were, in fact, utterly implausible—but by serving as models of moral or religious orientation. The "heroes" of the bourgeois novel, by contrast, usually do not set standards of moral and religious behavior, as they are normal people, very much like those one could meet in everyday experience (housemaids or sailors, teachers or landowners). Though they never existed, they are realistic characters.

The case of fiction illustrates a different relationship of reality with itself, or of society with the observation of the world. From the unitary model of previous societies (a unique reality) one moves to a reality differentiated in several distinct areas—which may or may not exist—that contribute together to shape the expectations, the imaginations, and finally the experiences of the observers.[15] Since the eighteenth century, each observer has been brought to build his image of the world and of himself, of his claims and hopes, on the basis of both direct experience and (especially) of his experience in the practice of fiction, referring to the adventures, loves, and ambitions of the characters of the novels. The fiction in novels, being explicit and declared, has real consequences and contributes to the image of reality for the observers, as well as to the construction of what becomes, through the action for the observers, the real reality. Over the last few centuries our world has been duplicated in two separate kinds of reality—real reality and fictitious reality. Those who are not able to master this distinction do not have the skills required by a society of observers observing each other.[16]

Next to fiction, however, our society has simultaneously developed another way to deal with uncertainty and with the lack of complete

15. Poovey tracks down in the same period, from the late seventeenth century onward, the need to manage in a more complex way the "problem of representation": a relationship between signs and referents that becomes increasingly problematic. She identifies three sets of genres that around the same time developed different strategies to deal with this problem: imaginative writing (the novel), financial writing, and monetary genres (dealing with the abstraction of money, which stands for goods while not being a good itself). See Poovey, *Genres of the Credit Economy*.

16. See Luhmann, *Die Realität der Massenmedien* (Opladen: Westdeutscher Verlag, 1996), ch. 8.

knowledge—or, in other words, with the imperfection of information. Probability theory was elaborated at the end of the seventeenth century as a "calculus of reasonableness," designed to enable non-arbitrary decision-making when one does not have sufficient information.[17] Direct knowledge of reality is supplemented by a statistical or inferential knowledge, made of samples and projections, with its own rules and laws. These, however, do not concern or even aim to concern reality as such, but only our imperfect knowledge of reality and the constructions available on the basis of limited knowledge. The calculus of probabilities was developed as a calculus of ignorance and not as a form of knowledge of the world (a calculus of truth): its object is not nature but human error.[18] Statistics does not work with the real world (which turned out to be uncertain and unreliable) but with models that overlap the intransparent world in order to offer an orientation. Here again, a second structured and non-arbitrary reality is constructed, separated from the real reality in order to shape what becomes a "reasonable" orientation in a world dominated by uncertainty. The indications obtained from statistics (like the experiences drawn from fiction) are used in order to decide real behavior, which then becomes (as in all cases of *Realitätsverdoppelung*) the result of the difference between two distinct orders of reality.

Statistics, like fiction, neither describes nor "imitates" the real reality but builds a second reality, more structured and manageable than the uncertain world modern society has to face. This reality is used to eliminate arbitrariness and to govern contingency, to behave in a "reasonable" way when rationality becomes doubtful and unattainable. If in fiction the awareness of its artificial nature is always present (even when one cries because of the death of the main character), in statistics, instead, the distance from the real reality is often not entirely clear. This is due to the complexity of internal differentiations between descriptive, inferential, or inductive statistics, or to the debate between objective and subjective

17. See Lorraine Daston, *Classical Probability in the Enlightenment* (Princeton, NJ: Princeton UP, 1988), p. 60; Michael Smithson, *Ignorance and Uncertainty: Emerging Paradigms* (New York: Springer, 1989), p. 51; Theodore M. Porter, *The Rise of Statistical Thinking, 1820–1900* (Princeton, NJ: Princeton UP, 1986), p. 72; Edmund F. Byrne, *Probability and Opinion: A Study in the Medieval Presuppositions of Post-Medieval Theories of Probability* (The Hague: Martinus Nijhoff, 1968); Ian Hacking, *The Emergence of Probability* (Cambridge: Cambridge UP, 1975).

18. See Porter, *The Rise of Statistical Thinking*, p. 72.

interpretation. The description of the fictional reality is often treated as if it were a description of the (uncertain) real reality.[19]

4. Money and Future Needs

In a society predominantly oriented to the uncertainty of the future, the economy is the field that deals in the present with a variant of this uncertainty. The economy deals with the concern for the future capacity to satisfy needs that may arise in the future. We are worried in the present about our future ability to satisfy needs that cannot yet be known.

From this perspective, the object of economics is, first of all, time. Without referring to time one cannot understand economics, its functioning, and its role for society as a whole. It is Keynes, again, who said this, and he was supported later on by other authors like Shackle and previous thinkers like Voegelin.[20] It is for this reason that economics turns to statistical fiction and integrates it in its mechanisms in such a deep way that it runs the risk of being blinded by it.[21] Statistics promises to deal with the uncertainty of time, and this is the basic problem of the modern monetary economy.

The basic tool of the modern economy is money, and money cannot be understood without reference to time. Indeed, in its essence "money is saved time," and its operations must be explained in the first place by referring to time and its management.[22] This sociological perspective is in line with Shackle's claim that the function of money can be understood only by referring to time. More than as a unit of account, a medium of

19. See Jens Beckert, "Imagined Futures: Fictionality in Economic Action," Max-Planck-Institut für Gesellschaftsforschung, Cologne: MPIfG Discussion Paper 11/8 (2011), p. 11.

20. See John Maynard Keynes, *The General Theory of Employment, Interest and Money* (London: Macmillan, 1936). For G. L. S. Shackle, see his *Business, Time and Thought* (London: Macmillan, 1988), and *Time, Expectations and Uncertainty in Economics*, ed. James L. Ford (Aldershot: Edward Elgar, 1990). For Eric Voegelin, see "Die Zeit in der Wirtschaft," *Archiv für Sozialwissenschaft und Sozialpolitik* 53 (1925): 186–211.

21. See Brian Snowdon, Howard Vane, and Peter Wynarczyk, *A Modern Guide to Macroeconomics: An Introduction to Competing Schools of Thought* (Cheltenham: Edward Elgar, 1994); Roger E. Backhouse, *Economists and the Economy: The Evolution of Economic Ideas* (New Brunswick: Transaction, 1994); Robert Heilbroner and William Milberg, *The Crisis of Vision in Modern Economic Thought* (Cambridge: Cambridge UP, 1995), pp. 44ff. and 101ff.

22. Christoph Deutschmann, "Soziologie kapitalistischer Dynamik," Max-Planck-Institut für Gesellschaftsforschung, Cologne: *MPIfG Working Paper* 09/05 (2009), p. 20.

exchange, or a store of value (its "classical" functions[23]), money is actually a "medium of deferment and of search" that serves to address and handle the uncertainty of the future.[24] Money, one could say, incorporates the future: it stands for the possibility to act and for the availability of alternatives in a time to come, which is still unknown (as is always the case). Owning money makes available these options, even if the options are yet unknown: since everything contributes to capital, everything can be translated into a sum of money (as long as others are ready to accept it).

In this interpretation, too, the point of reference of the economy are the needs that under conditions of scarcity activate a complex social dynamics.[25] With the introduction of money and its increasing autonomous circulation, future needs become the central problem; the economy reflects the present concern for what will be needed in a still unknown time to come. The present defines itself as the past of a future it tries to prepare, where it sees first of all a multiplicity of possible needs. I do not know what I will need tomorrow, but I would like to act in such a way as to ensure that I will be able to get it. If I have money, I know that in the future I will be able to satisfy my needs, and I already know it today even if I do not know them. Therefore money provides a guarantee against the uncertainty of the future; this is why there is never enough money. If present needs can be finite, future needs are never exhausted, because the future is and remains unknown.

The great relevance of the economy in modern society, its often amazing ability to motivate, and the obsessive value it can assume are related to its fundamental relationship with the future, with uncertainty, and with the unspecific assurance that money seems to offer. The economy, which in its modern form manages money,[26] manages the relationship between

23. Cf., among many others, Marc Bloch, *Esquisse d'une histoire monétaire de l'Europe* (Paris: Colin, 1954); Geoffrey Ingham, "Introduction," in *Concepts of Money: Interdisciplinary Perspectives from Economics, Sociology and Political Science* (Cheltenham: Edward Elgar, 2005), p. xiii; also Max Weber, *Wirtschaft und Gesellschaft*, vol. 1 (Tübingen: Mohr, 1922).

24. Shackle, *Time, Expectations and Uncertainty in Economics*, p. 213; see also Shackle, *Epistemics & Economics: A Critique of Economic Doctrines* (Cambridge: Cambridge UP, 1972), p. 160, and Paul Davidson, *Money and the Real World* (London: Macmillan 1978), p. 146.

25. See Luhmann, *Die Wirtschaft der Gesellschaft* (Frankfurt am Main: Suhrkamp, 1988), pp. 59ff.

26. In a functionally differentiated society the specific operation of the economy are payments—not production, nor the consumption of goods. Cf. Luhmann, *Die Wirtschaft der Gesellschaft*, pp. 131ff.

present and the future—the uncertainty of the open future and its construction. What will be possible in the future depends on what we do or do not do today. In their monetary form, moreover, these possibilities are already handled and managed in the present. Credit shows this: it creates wealth through the present use of a future availability, which is anticipated by the creditor and should offer the possibility to get more than the anticipated sum.[27] This, of course, develops a huge potential, which, however, generates a high complexity. Finance takes to extremes the use of money, i.e., the management of the future in the present. Finance, therefore, takes the use of fiction to extremes and reveals its contradictions in the most explicit way.

5. The Use of the Future in Financial Operations

The modern, monetarized economy manages the uncertainty of the future through money. It manages present possibilities to produce future possibilities, which are always uncertain because they do not yet exist and will be the product of present decisions (whether our own or those of others observing one another). The monetarized economy, in short, faces extraordinary contingency. It is not surprising that modern economics resorts to the use of models, and that these models are mainly based on statistics—which, as we have already seen, builds a fictitious reference that allows us to manage uncertainty with certain procedures. Statistics promises to manage in the present the uncertainty of the future. Facing an uncertain future, the monetarized economy therefore turns to statistics in order to gain a means of orientation that is non-arbitrary and controlled.

27. This, incidentally, is the reason why throughout the Middle Ages credit was harshly condemned by the Church: it created wealth through the use of time, but time does not belong to man but to God, who gave man the chance to live it, not manipulate it. Cf. Jacques Le Goff, *La bourse et la vie: Économie et religion au Moyen Age* (Paris: Hachette, 1986); Karl Pribram, *A History of Economic Reasoning*, vol. 1, *The Development of Economics into an Independent Discipline, Thirteenth through Eighteenth Centuries* (Baltimore: Johns Hopkins UP, 1983), pp. 35ff.; and Joel Kaye, *Economy and Nature in the Fourteenth Century: Money, Market Exchange, and the Emergence of Scientific Thought* (Cambridge: Cambridge UP, 1998), pp. 19ff. The moneylender is worse than the thief. Like the thief, he appropriates something that does not belong to him. But while the thief steals from another man, the moneylender steals from God. The stigmatization of debt and its social presuppositions has been reinterpreted by David Graeber (*Debt: The First 5,000 Years* [New York: Melville House, 2011]) in a proposal to set credit as the primary economic given from which coins and the market will later be deduced.

However, economics does not always remain aware of this fictitious character of its models, especially when its constructions become more refined from a computational point of view: the complexity and rigor of calculations often operate as substitutes of empirical reference. This tendency, with its related lack of transparency, has become much stronger in recent decades, in correspondence with the so-called "financialization" of the economy.[28] Observing the evolution and problems of finance, one can actually also observe the relationship between economics and uncertainty, its advantages and blindness.

The ongoing processes are numerous and complex, and they reveal, as a whole, what we could call a prevalence of the fictional over the real.[29] Fiction makes itself autonomous and follows its own criteria, just as finance seems to get increasingly independent from production, or the "virtual" aspect of the economy from real processes. As in all cases of fiction, reality results from the combined contribution of both components, even if it appears difficult to maintain an awareness of the distinction, i.e., of a reality given as the difference between real reality and fictitious reality.

Financial operations buy and sell money. If time is money, as Shackle and many others maintain, it follows that finance buys and sells time. And if it is true that time is articulated in a real present and a fictional future[30] (in the form of one or many fictitious realities), the prevalence of fiction corresponds to a prevalence of the future over the present. However, the construction of the future is handled as if it were the real reality. In other words, finance has recourse to formalized models (e.g., CAPM, value-at-risk, etc.) that no longer take as their main object goods and services but rather the direct management of risk. Financial risk management largely relies on derivatives, whose interesting feature is their reference to goods or assets only in the form of the "underlying": what is sold and bought is a "promise," i.e., the future possibility of performing an operation on the underlying.[31] Those who buy a derivative buy the possibility to do

28. Cf. Christoph Deutschmann, "Limits to Financialization: Sociological Analysis of the Financial Crisis," *Archives of European Sociology* LI.3 (2011), pp. 250ff., who describes, with many references to the literature, a continuous process over the last thirty years, linked to the growing dominance of the FIRE (Finance, Insurance, and Real Estate) sector.

29. Cf. more thoroughly, Elena Esposito, *The Future of Futures: The Time of Money in Financing and Society* (Cheltenham: Edward Elgar, 2011), ch. 7.

30. Besides the past, of course.

31. Cf. Edward J. Swan, *Building the Global Market: A 4000 Year History of Derivatives* (The Hague: Kluwer, 2000).

something in the future, regardless of what will happen and how reality will develop. What they buy is, in a sense, a bit of future.[32]

These operations of dealing with risk—i.e., with the future—are organized into models that perform a large amount of operations and combine them in an extremely complex way, using statistical formalizations and computer calculations. The various operations would ideally compensate each other, diversifying and articulating the overall risk of the investment through the construction of a series of scenarios that would cover all the possibilities of market evolution. The models claim to consider all possible future courses and to develop a strategy for each of them. They promise a "risk-neutral" world, in which the inevitable risk of an open (hence unpredictable) future is not deleted (which is, evidently, impossible) but rendered harmless. One does not know which future will come, but one can count on having a strategy ready for any of them.

The problem is that this risk-neutral world, as any future elaborated by calculation, is a fiction like statistics, an alternative reality with its own rules and criteria. It is defined as different from, not identical with, real reality. The future courses considered by the models are only "present futures" (in the sense developed by Koselleck: horizons of the future from the perspective of the now current present, on the basis of today's available information and knowledge)[33]—or, at best, all possible futures that can be constructed from the perspective generated by the available information of the present. The neutralization of risk only concerns these fictitious future realities. The real future reality (the "future present")[34] will be something different: it will not be a fiction, even if fiction prepares and affects it.

The complexity of the situation, and the ingenuity of the use of models, however, does not lie in the fact that fictions are not real; quite the opposite. They are real descriptions of a fictitious world. As all forms of fiction, the predictions of models are real data that have an impact on the course of the world and on financial markets.[35] They exist as predictions,

32. See Esposito, *The Future of Futures*, ch. 8.

33. See Reinhart Koselleck, *Vergangene Zukunft: Zur Semantik geschichtlicher Zeiten* (Frankfurt am Main: Suhrkamp, 1979).

34. See Luhmann, "The Future Cannot Begin."

35. They are as real as Merton's prophecies, which are fulfilled only if they are wrong (or only by chance). To paraphrase Merton, self-fulfilling prophecies start from a wrong premise, which, however, is believed, giving rise to behaviors that change the situation and a posteriori make the description real. Self-defeating prophecies do the same, but in the opposite direction: they were right, but become false as a consequence of their spreading. This perpetuates a "regime of error" and, in our terms, an irreducible situation of uncer-

and the very fact that they have been communicated contributes to the course of events, producing an additional piece of information they did not (and could not) take into account. This makes the right prediction false. So financial models calculate all possible present futures, and thereby contribute to the realization of the only future they could not foresee: the "future present" that results, in part, from the use and the consequences of models.[36]

This circularity between the predictions of the models and the development of reality has produced the widespread perception that finance is "stealing the future" of society. Binding all possible future courses, finance is seen as eliminating the possibilities on which plans and hopes are built. This accusation, however, uses the same logic as the models: the calculated future is expected to coincide with the real future. Yet the latter comes about in its own way: the more we try to plan it, the more surprising and unpredictable it will be. The extremely high—"wild"—volatility of markets in recent times attests to this. The future cannot be stolen, simply because it does not exist. The protest, however, signals an important point: the "colonization" of the future by finance did not neutralize risk (which is impossible) but the awareness of risk. It is this awareness that creates the drive to experiment and produce possibilities in order to see how they will evolve, and to learn how to proceed. If the binding of future possibilities entails forgetting about the fictitious character of predicted futures, the room for experimentation and learning narrows.

6. Uncertainty as a Resource

Can we imagine a different, more productive use of uncertainty? Uncertainty is not only a threat but can also be a great opportunity for decisions and for the construction of the future.[37] Could we use fiction in a way that

tainty: the true statements become false, and the false ones can become true—but not all of them. And the criteria to discriminate the "right falsities" from the "wrong" ones remain unknown. See Robert K. Merton, "The Unanticipated Consequences of Purposive Social Action," *American Sociological Review* 1 (1936): 894–96, 898–904.

36. Benoît Mandelbrot examines this process following the evolution of implied volatility, taken as a measure of the turbulence (hence the riskiness) of markets. He shows that when the use of models is stabilized, a "skew" is produced that reveals that in the real development of markets the probable trends become improbable and the improbable ones become probable. See Benoît Mandelbrot and Richard L. Hudson, *The (Mis)Behavior of Markets: A Fractal View of Risk, Ruin, and Reward* (New York: Basic Books, 2004).

37. David Stark suggests to move from the passive attitude of the one facing surprises "out there" in the environment, to the active attitude of an organization generating

takes to heart Shackle's insights into the positive value of the imagination and its essential role in the decision-making process in the economy?[38]

This proposal sounds very abstract, but it actually corresponds to procedures that are already used in the economic world, especially (not surprisingly) in finance. In a recent article, Paul Langley describes the transition of financial risk management from probabilistic calculations to non-statistical risk measures.[39] This new outlook is a consequence of the financial crisis and the failure of the models that promised to manage and neutralize risk (typically VAR or "value at risk"). As we have seen, they relied on historical data as a guide to future events. In the occurrence of high-impact, low-probability events that do not have any historical precedents, these models lose all effectiveness. For this reason, the new approach moves to anticipatory techniques for governing the future in the present. These techniques abandon any hypothesis of continuity with the past and "work within, rather than against, the idea that the future is unknown."[40]

purposefully "perplexing situations" and using ambiguity in order to "exploit uncertainty" (*The Sense of Dissonance: Accounts of Worth in Economic Life* [Princeton, NJ: Princeton UP, 2009], p. 6). In an apparently similar way, a "cultivation of strategic unknowns" as a resource has recently been suggested: the use of ambiguity and of "known unknowns" to get more decisional freedom and to absolve inaction or wrong decisions. See Linsey McGoey, "Strategic Unknowns: Towards a Sociology of Ignorance," *Economy and Society* 41, no. 1 (2012): 1–16, and William Davies and Linsey McGoey, "Rationalities of Ignorance: On Financial Crisis and the Ambivalence of Neo-Liberal Epistemology," *Economy and Society* 41, no. 1 (2012): 64–83. Ignorance and uncertainty, however, are different: uncertainty is circular and operational: it concerns an insuperable and continually reproduced lack of information, because it depends on the behavior of the decision maker himself. Ignorance, instead, is presented as an inevitable condition of the world and of knowledge (McGoey goes back to Socrates), due simply to the limits of the decision maker. Ignorance could be reduced by increasing the available information—uncertainty could not, because even the complexity of the relationships and their effects would increase. The strategies for the exploitation of uncertainty are different and more complex than the more traditional strategies for the exploitation of ignorance (typically in politics) and always include a moment of reflexivity.

38. Being uncertain about the future, actors cannot rely on traditional rationality. Nevertheless they do not behave irrationally nor follow uncontrolled fantasy. Actors rely on "constrained imagination" based on what one knows to be plausible at that time. See G. L. S. Shackle, *Imagination and the Nature of Choice* (Edinburgh: Edinburgh UP, 1979). According to Poovey, the relation of the economy with fiction is "an increasingly complicated, increasingly misrecognized relationship of mutual indebtedness masked by mutual disavowal and misunderstanding" (Poovey, *Genres of the Credit Economy*, p. 9).

39. Paul Langley, "Anticipating Uncertainty, Reviving Risk? On the Stress Test of Finance in Crisis," *Economy and Society* 42, no. 1 (2013): 51–73.

40. Ibid., p. 69.

The relationship with the future is completely different here. The new techniques do not try to stop a future event from happening, but very pragmatically aim to "prepare" the system to deal with an unforeseen and unpredictable future. The specific example discussed by Langley is the SCAP (Supervisory Capital Assessment Program), the crisis management enacted by the U.S. administration since 2009 and known as the bank stress test. This program uses the available historical data and quantified assumptions about economic data like GPD growth, unemployment rate, and house pricing; not, however, in order to project them forward but rather to imagine forward-looking "what if"–scenarios that include subjective assessments and identify a number of factors considered particularly relevant. Fiction (statistics) is not rejected, but it is used to imagine, in a controlled way, alternative hypotheses that are "severe but plausible"[41]—or, as we would say: realistic, but not real. These factors and scenarios are then used to test the vulnerability of banks. Crucially, they are largely independent of statistical probability: the imagined events have a low degree of probability, yet they would have a substantial impact on the state of finance were they to come true. A bank passes the test if it proves to be properly prepared to handle the occurrence of these events.

Interweaving "the imaginative and probabilistic, the novel and historical," this approach successfully uses fiction and statistics to "govern by uncertainty."[42] It does not reject formalization, but uses it to learn, not to predict—to get prepared for surprises, not for precise events.

The difference can be seen in the management of the inevitable performative effect of models, which, as we have seen, is usually their weakness. In this case performativity is expected and even exploited: the model "expects" that the markets react to the test—but not so much to its results (which concern highly improbable and hence little informative events) but rather to the fact that the test has been carried out (literally: performed). And the results show the whole circularity of performativity, which is based on possibilities, not on facts. The program was part of CAP (Capital Assistance Program) and presupposed the availability of funds to intervene concretely to heal situations at risk, but the success of the test made the use of CAP funds unnecessary. The possibility had to be available in order to not have to be used.

41. Ibid., p. 56.
42. Ibid., p. 55.

The very success of the project relies to a large extent on the management of the possible. It is based not on a real intervention in the situation of banks (funding) but rather on an action designed to (performatively) activate the self-observation of markets. The aim was to restore confidence, and it worked. The program is considered the beginning of the end of the crisis in the United States. But this confidence did not rely on positive data. The results of the stress tests in the United States referred to very unlikely events that, precisely because of their unlikelihood, had very little informative value in themselves. Moreover, the results were by and large negative. Taken literally they should have projected a threatening and worrisome future. The return of confidence—of a positive image of the future—was not based on what is known in the present but on the expectation that the unknown future will be addressed with competence. In other words, the return to confidence resulted from the perception of the preparedness of banks to manage the unknown and from the credibility of the administration and its tests—as shown by the negative results. No one knows what will happen, and the simulated events had a very low degree of probability; but it is assumed that, whatever happens, the banks will be able to handle surprises.

Paradoxically, then, the negative result of the banks tests activates a positive dynamics in the markets, while a positive result tends to activate a negative dynamics (in accordance with the circular structure of self-fulfilling and self-defeating prophecies). This is borne out by the case of the European Union, which adopted a similar stress test. In Europe only seven banks out of ninety-one were deemed unreliable, but this apparently reassuring figure had no positive effect on market confidence. The prevailing opinion is that the stress test failed in Europe—presumably because it did not provide information about the ability to handle future surprises, i.e., about the ability to use uncertainty. The lack of credibility of the institutions and the way in which the test was carried out made it ineffective for the management of the future.

This example can be read as a demonstration of Shackle's exhortation to deal with uncertainty as a resource rather than as a problem to be neutralized. If the future were knowable there would be nothing to imagine and to project. The alternative to reality would be mere fantasy, without connection to reality and its constraints and without prospect of being accomplished. The beauty of the future, instead, is that it is not here but will be—in a non-random way. Future reality depends on today's choices

and decisions, even if we cannot predict or determine them. This is the fundamental resource of planning and the challenge for those who work with "real fictions," such as models and formalizations. Tapping into this resource requires awareness, when referring to reality, of the fact that correctness is essential in order to produce effects and to understand what is happening, even though these effects will (almost) always be different from those we could expect. Fiction cannot and does not want to be the image of reality, and we should not expect it to be. Without fiction, however, one could expect nothing—at least not in the sense of controlled expectations, structured by models. Nor could one learn from experience and thus change one's expectations in order to produce a new future, ever different and surprising.