

HOW GEORGE SOROS KNOWS WHAT HE KNOWS

Towards a General Theory of Reflexivity

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In its traditional formulation as an explanatory principle, reflexivity means that any object of thought contains in itself the thinking activity that generates it. Applying the concept of reflexivity to the question of financial markets valuation, Soros concludes that economic reality is actively shaped by the perceptions of market participants. This leads him to a theory of investment radically different from other existing approaches.

Existing approaches try to make sense of market reality by delineating factors that are determinants of price and identifying indicators that can be used to predict the future course of prices. Different theories emphasize different factors, they differ with respect to the definition of factors that determine market events. But the different approaches share the assumption that market events are determined by factors that function like logical units. The unit-like factors function like the discrete terms in a logical calculus, remaining fixed, unchanged through the process of events. What is not covered by such factors is viewed as just indeterminate and unpredictable.

But this traditional explanatory structure, based on deductive logic, cannot capture reflexive processes. The fluidity and particularity that characterizes the unfolding of events do not match the constancy of logico-mathematical patterns. In reflexive processes, we cannot assume discrete entities at the bottom: any factors we isolate might not survive the process of events in their original form.

Consequently, Soros does not offer an alternative particular cut of market reality, a different set of already defined factors. Instead, he operates with that which eludes any particular cut of market reality: intrinsic uncertainty. Rather than assuming a static order, Soros embraces the lack of fixed references in his guiding principle, the belief in fallibility, meaning both the belief in his own fallibility and the belief that the misconceptions and misunderstandings that go into our decisions help shape the events in which we participate.

Soros goes beyond the denial of a static order. He asserts that the concept of reflexivity allows him to structure situations and recognize profit opportunities. These are found when the participants' biases lead prices to diverge from an underlying trend which is itself influenced by market prices – a process which is at first self-reinforcing, then self-defeating. However, Soros could not formulate the general theory of reflexivity he originally intended to put forth. Reflexivity remained mysterious, both at the theoretical and at the practical level: neither his conceptual framework nor the manner in which it gets translated into investment decisions is fully understandable.

Soros did not find a way of speaking in positive terms about that which distinguishes his approach: a thinking without assuming fixed units at the bottom. As a result, he can only articulate his thoughts in the negative: “imperfect understanding”, “fallibility”, “uncertainty”. The reality of his concepts of underlying trend and prevailing bias can never be successfully captured by any given set of terms and definitions. But without

having the alternative to a static epistemology necessary to explain himself, Soros needs to recur to the inevitable mismatch between two sets of discrete units. Soros tells us that reflexivity renders not only standard approaches to investment but also standard economic theory and the standard view of the scientific method inapplicable to the market situation. And leaves us without a clear formulation of what does apply.

Further, when Soros tries to show us reflexivity at work, what his examples seem to reveal is that he is exploiting crass errors in conventional thinking. In retrospect, the fact that the underlying trend has no fixed referent – a main distinction from the standard notion of fundamental valuation that Soros derives from the concept of reflexivity – gets lost.

As a result, Soros' theory of reflexivity is often misrepresented as revolving around the - unremarkable - idea that in the financial sphere reality is affected by the beliefs of market participants and/or as boiling down to the platitude "Life is unpredictable". Family members' testimony that gut instinct and intuition are what inform Soros' decisions is usually drawn in as evidence that Soros' attribution of his financial success to the application of his theoretical framework is far from being the truth. The following widely quoted remark by his son Robert Soros is often used in support of dismissing the theory of reflexivity:

"My father will sit down and give you theories to explain why he does this or that. But I remember seeing it as a kid and thinking, Jesus Christ, at least half of this is bullshit. I mean, you know the reason he changes his position on the market or whatever is because his back starts killing him. It has nothing to do with reason. He literally goes into a spasm, and it's this early warning sign."

This paper resolves the apparent contradiction between Soros' attribution of his success to his theoretical framework and the guidance that his bodily instincts provide him. Combining Gendlin's process philosophy and more-than-logical epistemology with Cymbalista's market theory, it places the theory of reflexivity on firm epistemological and economic theoretical foundations and shows the necessary relationship between Soros' thinking without assuming fixed units at the bottom and the bodily knowledge expressed by his (in)famous backache. A practice derived from the broader reflexivity framework explains Soros' operating principle, the belief in fallibility, as a positive methodology that can be taught and learned.

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Steps towards a general theory of reflexivity

With The Alchemy of Finance, Soros originally intended to put forth a general theory of reflexivity. However, he wasn't able to fully make his case. Not formulating his concepts in positive terms, together with the difficulty of showing it in practice, he could not demonstrate reflexivity as a universally valid way of looking at the evolution of market prices. In the preface to the second edition of the book, Soros retracts his original claim that reflexivity is at work at all times, rendering standard economic theory irrelevant. He now distinguishes between far-from-equilibrium conditions where reflexivity plays a role and near-equilibrium conditions where economic theory applies and reflexivity can be safely ignored.

Since the publication of "The Alchemy", the grip of the axiomatic model has been loosened. In many areas, two-way feedback mechanisms have become well known. This, however, does not mean that the concept of reflexivity is too obvious, as Soros [2000, p. 18] has recently suggested. Rather than being rendered banal by current developments in complexity theory and the theory of adaptive systems, the general theory of reflexivity we believe is implicit in Soros' theoretical framework and practice requires a departure from current modes of explanation that goes beyond what these formal approaches have to offer. The now widely searched conditions for the emergence of novelty cannot be found in logic alone. This is clear, for instance, in the pricing models of the Santa Fe Institute, which do incorporate recursive relationships but where a fundamental value independent of the valuation process still remains the norm from which market prices diverge.

Far from being trivial, formulating the reflexivity implicit in Soros' theory and practice in positive terms requires a reversal of the usual explanatory order. Instead of reducing phenomena to structural units, this requires we take a functional view, giving primacy to functional processes that create structure, that is, viewing content as derivative of process.

The reversal of the usual explanatory order required by reflexivity means we need to jettison the most basic assumption underlying the way standard economic theory explains: the view of the economy as an atomic interacting system.

With the atomic hypothesis, standard theory reproduces the traditional notion of the structure of an explanation, based on deductive logic, assuming that the process of events can be reduced to the sum of atomic units. In an atomic interacting system, the essential characteristics of the system's components are independent from their relationships to other components, such that interaction does not lead to the emergence of new properties. The atoms are conceived of as existing, objective "facts" that have an independent existence. They are fully formed entities, fixed units that not only precede interactions but also last through events in their original form.

The atomic hypothesis – which in Gendlin's terminology is called the "unit model" – permeates standard theory at many levels. It is embedded in the assumption of pre-coordinated results of equilibrium theory, in the notion of value as an objective category independent from the perceptions of economic agents, in the definition of

economic rationality as the representation of this underlying reality. Most important, the atomic hypothesis underlies the assumption of the neutrality of money. Further, the atomic hypothesis legitimizes the universal reducibility of uncertainty to the risk case behind expected utility theory and the rational expectations hypothesis as well as the statistical research methods associated with logical-positivism.

Logical reasoning requires a given set of fixed units, a single set of possibilities. The space of possibilities is pre-defined: we might not know which of the given possibilities will occur, but the space itself does not change; in this sense, it is certain. But reflexive processes are characterized by a changing space of possibilities, being intrinsically, irreducibly uncertain.

In order to capture reflexivity within an economic explanation, a new economic paradigm is needed in which economic interaction is conceptualized as organic. In other words, we need an alternative theory of value, that is, a different conception of what determines scarcity and a corresponding notion of economic choice that allows for intrinsic uncertainty. The first part of this paper presents an economic theoretical framework in which the reflexive relationship between observed conditions and the participants' perceptions of them is an essential characteristic of the system. With reflexivity at work at all times, Soros' original insight is confirmed: standard economic theory is irrelevant regardless of whether or not reflexive interaction is giving rise to a major boom and bust cycle.

How then can we have an economic framework that doesn't begin with individuated units at the bottom? We can do so if we begin with money, a reflexive object par excellence. We need thus to begin with Keynes. As anyone who spends time with Keynesian scholarship soon realizes, there are almost as many "Keynes" as there are interpreters of Keynes. Particular to our Keynes is first of all the use of his early philosophical work on probability theory and how it entered into his economic theory and methodology. Second, the emphases on The Treatise on Money that is characteristic of a recent development of Keynesian value theory known as the "Berlin School of Monetary-Keynesianism", whose founder and main exponent is Hajo Riese. Together they served as the starting point of Cymbalista's On the Impossibility of Rational Valuation under Uncertainty. The title refers to a statement by Nobel Prize winner Robert Lucas asserting that intrinsic uncertainty - as opposed to probabilistic risk - renders economic theory valueless. Cymbalista [1998] refutes Lucas' assertion by showing the fruitfulness of a liquidity-preference approach which has uncertainty at its core. The approach, in which the orthodox hierarchy between the financial and the real sphere is reversed, was shown to both illuminate the shortcomings of the current academic discussion around market rationality and to solve the anomalies that have thrown the efficiency paradigm in what Kuhn calls a "crisis".

Now informed by Gendlin's philosophy, the approach explicates the organic nature of economic interaction. In our organic approach, there are no fundamentals independent of valuation. That is, like the "reflexive fundamentals" associated with the "underlying trend" in "The Alchemy of Finance", fundamentals always already embody the interactive valuation process that generates them. We believe this to be indeed the economic theory which implicitly underlies The Alchemy of Finance. In other words, the

organic framework stands to Soros' reflexive theory of investment in the same way in which Neoclassical economic theory stands to standard fundamental analysis and in which random walk theory stands to the recommendation that investors hold the market index rather than trying to outperform the market by picking assets.

Gendlin's [1997] concept of the space of possibilities renders the progression in economic theory obvious. First, in standard equilibrium theory, the space consists of a fixed, single set of possibilities which are determined by exogenous parameters. Second, with Keynes, money destroys the coherence of this fixed, single set. Third, Riese restores the coherence by – as we can now say - viewing the space of possibilities as a multiplicity of sets, each associated with a given supply of liquidity, that is, with a given macroeconomic budget constraint. The budget constraint, however, is endogenous: it depends on the state of confidence. For analytical purposes one can artificially hold the state of confidence constant – which is what lets us see each of the multiple sets of possibilities as fixed, with each set being an equilibrium path. Last, with reflexivity, we face a changing space of possibilities.

It's intrinsic to equilibrium analysis that unit-like factors last through time. But with a changing space of possibilities the question becomes how new factors are generated and re-generated – and how they can sometimes be discerned while still in the process of being made.

The reflexive theory of economic value demands a corresponding epistemological shift. Standard theory views markets and their participants as information processors – whether perfect, as assumed by advocates of efficiency, or imperfect, as argued by its behavioral finance critics. But with reflexivity we no longer have the fixed set of possibilities required by the logical-representational notion of rationality. Section II derives the need for a more-than-logical epistemology from the economic theoretical framework and presents Gendlin's reversal of the usual philosophical order of priority between conceptual logic and the experiencing process. While in the old order of priority conceptual criteria, rules or distinctions were considered prior determinants of our actions, Gendlin [1962] shows that meaning creation involves implicit functions that include but exceed logic and patterns. These implicit functions are found in our experiencing process. Experience does not consist merely of already formed entities, it always has an implicit, pre-conceptual, only sensed or felt aspect. It's not an axiomatic system working by deductive logic, it's multischematic and non-numeric. But it's not at all arbitrary, rather an intricate, finely ordered on-going change process. The process creates the content-units to which deductive logic can be applied: logic itself cannot determine where logic begins, but after newly formed contents emerge, logic is again needed.

By having a body – rather than a machine – as its conceptual instance, Gendlin's philosophy develops the terms with which we can study first-person activity, the originitive formation of entities from self-organizing, organic processes. A further meaning of reflexivity is introduced, this time not as the relationship between two content variables (the content of the participants thinking and the content of the underlying trend) but as the relationship between content and the living process that creates it.

Gendlin gives us a way to speak about the implicit nature of "facts" while they are still embedded, still in the process of being formed. It's in this state that Soros first

discerns them. The process view lets us describe the unfolding of the market process, the formation and dissolution of consensual frames, the emergence of new “facts” which impinge on conventional valuation and market pricing. The same concepts that capture the object creation process involved in Soros’ generation of investment hypothesis also apply to the market process itself. These concepts allow us to clarify Soros’ notion of underlying trend and prevailing bias – and thus the emergence of profit opportunities - without recurring to the external anchor independent of valuation which alternative approaches based on complexity theory cannot avoid.

The broader reflexivity framework combining Gendlin’s view of the relationship between logical reasoning and bodily felt experience and the organic approach to market valuation allows us to explicate what Soros is actually doing: how his operating principle, the belief of fallibility, gets translated into investment hypotheses. In the third part of the paper we draw on the psychology of uncertainty together with a practice derived from Gendlin’s philosophy in order to reconstruct and explain the different stages of the generation of reflexive investment hypotheses in a manner that is congruent with Soros’ writings.

According to Soros, his investment methodology consists of a combination of analysis and instinct. Informed by his theoretical framework, he instinctively picks up self-reinforcing trends that might eventually be self-defeating: “They send out certain signals that activate me” (Soros [1995, p. 10]). He then articulates the rationale behind the trend – that is, he formulates an investment hypothesis - and follows it. Knowing that any hypotheses is but a cut of market reality which can be neither unique nor indefinitely survive the process of events, he searches for a flaw. Once he finds the flaw, he’s ahead of the curve. He can then watch out for signs that the flaw is becoming salient in the public’s eyes, causing a shift in conventional valuation. At this point he can either simply cover his position when the trend has played itself out or, in the cases where the shift is strong enough to lead to a trend reversal, reverse his trade.

But how does Soros pick up the signals? And how does he find the flaw? At both spots a knowing which at first can only be bodily sensed plays a role alongside his capacity to conceptualize it. The practice created by Gendlin systematically teaches the inner process at work at each of these spots.

The practice, Focusing, is a means to explicate one’s implicit bodily sensing of a situation, it teaches people how to think with their gut. It gives a way to engage with organic bodily reactions such that one can access the information they contain. The process works in a zigzag that has both a bodily felt and a conceptual side. Cymbalista has developed it into a procedure for decision-making in financial markets, taking into account both affective and cognitive aspects of the biases that enter into trend formation. These are interrelated and associated with deeply ingrained habitual reaction patterns that stem from an intolerance for uncertainty. With the procedure, the person learns to separate her own individual-psychological habitual tendencies and biases from her implicit sensing of the situation which is uncertain because it’s not finished, it’s still being formed. Explicating one’s bodily apprehension of uncertainty enables a re-cutting of the space of possibilities. It leads to new hypothesis, new questions, new information-gathering and new probes, generating a new kind of information concerning factors that could not have been thought of or isolated before and resulting in better decisions.

Because Soros formulates his propositions in the negative, one cannot see how his belief in fallibility can indeed be a method. Now the fact that a practice developed from the broader reflexivity framework can be systematically taught and learned demonstrates the fact that the belief in fallibility is much more than the awareness of the lack of certainty, of the impossibility of deductive prediction. It is also a positive methodology in which the direct access to uncertainty permits the creation of new entities – new questions, new hypothesis – that in turn permit probing the still ongoing events.

Assuming fixed units at the bottom and a representational notion of rationality, standard theory cannot account for the profit opportunities that Soros finds nor for his manner of doing so. Because its underlying epistemology does not allow for a tracking of the ongoing change in what is possible, according to the standard view Soros' performance can only be attributed to luck.

The market efficiency literature has interpreted tests showing that single sets of individuated and located referents cannot be used as a basis for systematically beating the market as evidence that markets are random. From the reflexive organic perspective, this evidence merely reflects the fact that no single cut of market reality can be expected to survive the process of events. Market events aren't determined by factors that are logical units, but they aren't fully indeterminate either. The intricate order characteristic of organic processes is different from a rigid structure, and yet there is an orderliness in it. With reflexivity, prediction lies elsewhere than usually assumed: There can be a thinking, probing and action that taps into ongoing and always unfinished entity formation. Soros' performance is a brilliant illustration of how the rejection of representational truth can lead us not to arbitrariness but to a deeper understanding.

I. A REFLEXIVE THEORY OF ECONOMIC VALUE

1. Time, Money, Uncertainty and the Mode of Interaction

As an empirical research program, the efficient markets theory stems from an attempt to combine statistical observations of the apparently random character of stock price changes with the Neoclassical theory of value. The fact that empirical research on efficiency emphasizes return predictability makes it easy to overlook that efficient markets theory is closely related to the basic disagreement between Keynesian and Neoclassical economics: the question of the (non-)neutrality of money.

Efficient markets theory embodies the notion that the financial sphere is subordinate to the real economy. It not only asserts that market prices represent an unbiased assessment of an underlying fundamental value, but also defines value as walrasian equilibrium theory: as an objective category determined by the relative scarcity resulting from the interplay of consumption needs, the physical productivity of capital goods and the availability of resources. In other words, the timeless walrasian construct is extended to an intertemporal frame by the rational expectations hypothesis. An implicit assumption is that the qualitative differences introduced by the element of time can be ignored: a stochastic version of the timeless general equilibrium is seen as a good approximation of the process that generates observed prices. Intrinsic, irreducible uncertainty - as opposed to probabilistic risk - is considered intractable and thus outside the domain of economic theory.

The belief in the irrelevance of Walrasian analysis for explaining economic processes in time was the main force that drove Keynes to reformulate economic theory (Keynes [1937]). Once the qualitative differences introduced by the element of time are considered, the atomic hypothesis breaks down. This requires an alternative solution to the coordination problem: acknowledging the role of money between present and future. As soon as money - a social convention or institution - is assigned an independent function, the atomic hypothesis no longer applies; instead, organic complexes become an adequate metaphor for economic reality and uncertainty is no longer reducible to the risk case. In short, uncertainty does not make economic theory useless but mandates a monetary approach.

The relationship between the mode of interaction and the conceptualization of uncertainty was an old interest of Keynes. It's a core theme of his early philosophical work on probability theory. His "Treatise on Probability" [1921] is an attempt to extend the theory of probability beyond its concern for numerical measurability. Keynes differentiates between two dimensions of a probabilistic argument: the probability judgement proper and the degree of confidence one attaches to it ("weight of argument"). Unlike the common definition, in which the dichotomy risk/uncertainty is directly related to the question of numerical measurability, Keynes' treatment of uncertainty is connected with the question of confidence, with the "weight". Examining the conditions under which the degree of belief in a hypothesis is amenable to a mathematical calculus of probability,

Keynes shows that numerical measurability presupposes an equal degree of confidence. He then shows that the universal reducibility of uncertainty to the risk case is only justified if the system observed shows the limited independent variety typical of games of chance. While this is true for atomic systems, it does not hold in case of organic interaction, where the collective behavior of the whole is qualitatively different from that of the sum of individual parts.

The fact that these two threads of Keynesian thought – the non-neutrality of money and the insight into organic interaction - are interrelated is not widely recognized, even among Keynesians. In the course of this paper, both threads will be taken further. Part II, where we present a reflexive epistemology, develops Keynes' original insight into organic interaction further. Keynes original distinction between atomic and organic interaction suffices for a critique of the standard view (Cymbalista [1998]). But his organic whole remains mushy, we do not know much more than that everything depends on everything else. Integrating Gendlin's process view with economic thought, we'll pick up where Keynes himself stopped.

The present section concentrates on the first thread: money. Keynes himself was never able to fully formulate an alternative to Neoclassical value theory. He could not yet show that the non-neutrality of money wasn't only a short-run phenomenon. In other words, Neoclassical long-run equilibrium kept its normative role, even though "in the long-run we're all dead". While Neo-Keynesians (mostly in the USA) created a synthesis of Keynes and the Neoclassical by assuming away uncertainty, and Post-Keynesians (mostly in the UK) continue to emphasize the fact that the uncertainty we find in reality renders equilibrium theory irrelevant, Riese's Berlin School of "Monetary-Keynesianism" rightly recognizes that economic theory can only then inform economic reality if the non-neutrality of money and uncertainty are present also at the normative level. By offering an alternative notion of economic choice which is typified by a bank's credit decision and viewing the supply of liquidity as the endogenous macroeconomic budget constraint of the market system, Riese (1983) offers a full and explicit formulation of a monetary theory of value. We'll present the Monetary-Keynesian framework with the emphases on the organic insight - which plays no role in Riese's original work – already taken in Cymbalista (1998), but now already informed by Gendlin's philosophy.

In sections II and III, where we go into Soros' generation of investment hypothesis, we will show how he, in turn, goes beyond Keynes' thoughts on valuation under uncertainty. For now, let's return to Keynes: to the reversal of the hierarchy of markets by means of which he introduced uncertainty into economic theory.

2. Reversing the Hierarchy of Markets

The Walrasian model is unable to let the present effect the future because it places pre-coordinated exchange transactions in the foreground, without acknowledging the difference between physical resources and wealth categories. Wealth and capital are treated as goods, as a mountain of delayed consumption and/or a quantity of means of production, so that its valuation is subordinate to the exchange of resources. However, the

distinction between physical resources and wealth – between goods and assets - is essential for an analytical grasp of the intertemporal aspect of economic relationships.

Transactions in good markets relate to a point in time: they end with the exchange of a good for another. In contrast, transactions in asset markets only end with a return of the transferred wealth. They're not comparable to exchange but to credit relations and are thus subject to the possibility of loss, that is, of illiquidity. The latter is assumed away by the walrasian pre-coordination of outcomes, which blends out the distinction between resources and the general purchasing power that allows the acquisition of resources: since all transactions are finalized before any transfer occurs, the wealth transfer within the household sector and between the households and the firms always flows back. The auctioneer is a warrantor of the firms' ability to return the assets borrowed from the households, ie. he secures for each the fulfillment of the contracts by the others.

In the walrasian system, we only have present moments: the stable units that went into the interaction hold across the interaction, the outcome is a mere re-arrangement, units are neither lost nor added. In other words, an interaction doesn't change the pre-determined system of possibilities. This uneventfulness is not altered by the attempt to extend the basic model to an intertemporal frame. We then have a linear sequence of time-points, each of them purely present and unrelated to any other. The arrival of information - which is understood as an exogenous shock, that is, a change in preferences, the availability of resources or technology - leads to a new re-arrangement, the interaction itself involves nothing that wasn't already there to begin with, nor does it imply any future occurring.

However, dispositions in asset markets never involve just an actual present. Like a credit relation, they always also entail a tension towards a future time which is part of the present decision. Accounting for the element of time therefore requires a reversal of the hierarchy of markets.

Neoclassical theory subordinates the credit market to the market for capital: the credit supply function is associated with the savings function of the households, dependent on consumption preferences, and the credit demand function is identified with the investment function, itself dependent on the physical productivity of capital goods. The rate of interest is determined at the capital market equilibrium where savings and investment are equalized. Money remains only a reference quantity, a neutral link, a veil over transactions that take place in the real sphere; its sole function - which can be fulfilled by any divisible good - is that of a *numéraire*. This means that the specific institutional form in which a monetary economy is organized is not supposed to affect the way the system works. The quantity of money, which is seen as exogenous, influences only nominal prices but not value formation.

In his well-known critique of Neoclassical capital theory, Keynes shows that a change in income renders the simultaneous determination of investment, saving and the rate of interest unable to generate an equilibrium. Supply and demand curves can no longer be seen as independent and total investment remains undetermined unless the rate of interest is given exogenously. Further, in a monetary economy forgoing consumption and credit supply can fall apart. Investment doesn't presuppose a savings fund but a cash advance:

“The investment market can become congested through shortage of cash. It can never become congested through shortage of saving. This is the most fundamental of my conclusions within this field.” (Keynes [1936], p. 222)

Firms engage in/enter credit relations in order to carry out production processes, which then generate income, which households can consume or save. By saving the households become wealth owners; they then have a choice, which asset to hold. But there's no causal relationship between savings and investment: the choice not to consume doesn't have a direct effect on investment. Rather, it only means a net-decrease of demand for consumption goods, so that a part of the wealth transferred from the firms to the households doesn't flow back to the firms.

Keynes therefore interprets the rate of interest as a monetary phenomenon: it's the price for the temporary transfer of liquidity. Productive capital is itself viewed as an asset and investment as determined not by the physical productivity of capital goods but by the interest rate and the expected money returns. Rather than the real rate of return of productive capital ruling the roost, with the money rate of interest and the returns on financial assets adjusting to that, in Keynesianism the money rate of interest becomes the central coordinating variable of the market economy. The market for productive capital is thus now subordinate to the market for money, that is, to the credit market.

As mentioned above, Gendlin's concept of the space of possibilities makes the progression clear. Neoclassical equilibrium theory sees only one set of possibilities, determined by the exogenous parameters. Keynes shows how the demand for money destroys the coherence of this single fixed possibilities-space. But Keynes could not yet formulate a long-run equilibrium alternative to the Neoclassical notion, that is, an alternative in which the non-neutrality of money wasn't only a short-run phenomenon (this shortcoming comes to light in his famous saying “in the long-run we're all dead”). Riese, the founder of the Berlin School of Monetary-Keynesianism, recognized that the hindrance lied in Keynes' treatment of liquidity preference as a demand category and of the supply of money as exogenous. A full and explicit formulation of a monetary theory of value becomes possible once the role of liquidity preference on the supply side - as well as the role of money as a means of payment - is emphasized.

3. The dual economic decision calculus

Monetary-Keynesian decision theory is, like Keynes' concept of expectations, two-dimensional. Wealth holders have a dual goal: they attempt to both increase and secure wealth. The prototype of a wealth holder is not a consumer but a bank, at the same time debtor and lender.

This formulation of the economic decision calculus is intimately related to the specific function of money that is derived from the institutional organizational form of a monetary market economy. Among all functions of money, Monetary Keynesianism emphasizes its function as a means of payment. A constitutive part of a monetary economy is a dual banking system, where the central bank issues legal tender while the commercial banks supply the public with money. Money enters into the economy when

the commercial banks assume liabilities vis-a-vis the central bank in order to be able to deal in credits. And money is destroyed when the banks redeem their liabilities with the central bank. On the one hand, through credit relations, banks create debts that are fixed in units of the legal tender; on the other hand, the credit beneficiary acquires deposits, which represent a claim to legal tender. A payment chain is created, where all payment transactions and every credit relation lastly recurs to legal tender. While bank deposits and other liquid assets fulfill money functions, legal tender is the only means of payment that redeems liabilities without being itself a liability.

The banks' decision to give credit depends, on the one hand, on a comparison of the credit rate of interest with the expected cost of funds. On the other hand, since remaining solvent is a necessary condition for their business activity, banks' willingness to supply money depends on their estimate of the capacity of the firms to refund the accredited liquidity. This dual goal of banks also applies for the portfolio decisions of the private wealth holders. First, the various assets can be conceptualized like a bank credit, as forms of forgoing liquidity. Equity holding can be seen as an open-ended credit to oneself. Second, wealth holders attempt not only to increase wealth but also to secure wealth.

The capacity of the firms to fulfill their commitments towards their creditors depends on the prices that the produced goods can achieve in the sales markets. But sales lastly depend on the amount of allocated capital, which influences the scarcity of production processes, employment and income. In Neoclassical theory the auctioneer ensures that the proceeds from sales are settled before the exchange of initial endowment actually occurs. Pre-coordinated outcomes thus exclude insolvency, since the transfer of wealth between consumers and producers is guaranteed to reflow continuously. Increasing wealth is subordinated to the aim of maximizing consumption so that holding money is never preferred to the alternative of holding an asset that yields a return. But in a monetary economy the dispositions of the totality of the wealth holders has a bearing on whether the firms will be able to pay off their liabilities. With the introduction of money, uncertainty emerges from the coordination problem. Thus, money creates uncertainty and fulfills the - in the Neoclassical unknown - security goal.

In order to describe the non-pecuniary reward of money, the opportunity cost of forgoing liquidity, Keynes coined the term "liquidity premium". Increasing wealth requires surrendering liquidity whereas liquidity fosters security, so that the decision calculus of wealth holders consists of weighing up the liquidity premium of holding money and the expected return of foregoing liquidity, i.e. the risk premium. In addition to money, all assets are assigned liquidity premia which reflect the ease with which they can be transformed into money. In order for a wealth holder to be willing to forgo liquidity, the sum of the risk and liquidity premia of the asset must correspond to the liquidity premium of money.

The definition of risk and liquidity premia is analogous to that of the probability and the 'weight' of argument. The risk premium is associated with a probability judgement proper and the liquidity premium with the 'weight'. This difference corresponds to the difference between the best estimates we can make of probabilities and the confidence with which we make them. Unlike the case of atomistic interaction, uncertainty in a monetary economy can't be reduced to a single dimension. In walrasian

analysis the possibility of consumption fluctuation due to exogenous shocks can always be compensated by a high enough rate of return. In contrast, in a monetary economy a shift in confidence doesn't lead directly to higher required returns - a higher risk premium - but to a change in willingness to dispose of liquidity. While the liquidity premium of an asset doesn't depend on the level of expected returns, a high/low liquidity premium increases/decreases the willingness to take on risk.

We can now further clarify the relationship between equilibrium and the space of possibilities as well as the specific conditions under which the standard notion of rationality applies.

In the standard view rational economic man is an independent maximizer of an expected utility function whose expectation formation is a statistical procedure associated with a correct representation of an objectively given probability distribution. Both the consistency requirements of rational choice theory and the stability assumption of the rational expectations hypothesis presuppose a single, fixed set of possibilities. Equilibrium defines such a set. In equilibrium the units to which logic can be applied are already constellated, the content of rational decision making is a given. The same epistemology that underlies the unit-model methodology of standard theory is thus assumed to underlie the decision calculus of economic agents. A fixed set of possibilities ensures that all economic man has to do is to acquire enough data and the quantitative methodology - the "true" formal model plus the econometrical techniques - to gain a true representation of reality and calculate the fundamental equilibrium price.

With Keynes, money - that is, time - no longer allows the space of possibilities to be viewed as a single, fixed set. Because total investment depends on the confidence that agents attach to their hypothesis about the behavior of the totality of agents, outcomes won't show the independent variety typical of games of chance. This renders standard equilibrium analysis irrelevant and deductive prediction impossible. In Gendlin's terminology, outcomes can't be reduced to stable units that last across interactions. An interaction "undoes" the units to which deductive logic and inductive inference can be applied.

The mathematical calculus of probabilities is therefore only then applicable to expectations through an analytical device: holding the state of confidence constant. Fixing the degree of uncertainty permits Riese [1983] to define a monetary equilibrium. A multiplicity of sets, each associated with its degree of uncertainty, thus replaces the single set of Neoclassical theory.

While the standard notion of rationality requires a given set of possibilities, the two-dimensional Monetary-Keynesian formulation of rational choice also allows for changing sets of possibilities. However, it's only within a set of possibilities that rationality can be seen, epistemologically, as representational. Changing sets of possibilities demand a different epistemological foundation - which Gendlin's philosophy provides. This entails a reversal of the philosophical order - between concepts and experiencing - which parallels Keynes's reversal of the hierarchy of markets. But before we look closer into that, we'll show how Riese restores the coherence of economic analysis, offering a monetary theory of value able to encompass reflexivity.

4. Embedding Perceptions in the Notion of Value

In equilibrium there can be no systematic deviations between the value of a firm and the market valuation of its shares. The task of the underlying value theory is to specify the determining factors of this equilibrium value of productive capital. Besides its implications at the level of decision theory, recognizing the role of money leads us to the fact that the market system acquires a macroeconomic budget constraint alternative to the scarcity of physical resources that underlies the notion of fundamental valuation.

Capital has a dual character: it's both means of production and asset. As a means of production, capital shows a marginal rate of productivity: this determines the physical surplus of the produced over the deployed resources. As an asset, it yields a return.

Neoclassical theory doesn't make a distinction between the initial endowment and the budget constraint. Capital is viewed as a mountain of means of production whose marginal productivity determines returns. But if production processes are constrained by the fact that the initial endowment of the households with resources is finite, then we can only derive production prices that reflect production costs. Since firms extend their production until the difference between prices and costs disappears, no net profit is generated, that is, the capital value of an asset is always zero. We thus need to differentiate between the advance needed by the firms to carry out production processes and the means of production themselves:

“For the only reason why an asset offers a prospect of yielding during its life services having an aggregate value greater than its initial supply price is because it is scarce...If capital becomes less scarce, the excess yield will diminish, without its having become less productive - at least in the physical sense.” (Keynes [1936], p. 213)

In a monetary economy the resources employment depends on the willingness of the wealth holders to forgo liquidity. The liquidity advance, an asset, is the value of capital and offers therefore the basis for determining the return on capital. Since producers will only then invest if the expected return is not below the money rate of interest, the money rate of interest coordinates the employment of resources for productive purposes, and it does so independently from the physical productivity of capital goods. The later influences the allocation of capital among alternative production processes as well as the prices of goods, but only within the scope given by asset markets. Instead of determining financial assets' returns, the price-quantity-relationships of the real sphere is thus subjected to the conditions set by asset markets.

This means that the macroeconomic budget constraint - i.e. the quantitative category determining the value of productive capital - is given by the supply of liquidity. The supply of liquidity is not exogenous but controlled by the calculus of banks, which preside over monetary creation and destruction. As seen above, while in the Neoclassical approach the possibility of consumption fluctuation due to exogenous shocks can always be compensated by a high enough rate of return, in a monetary economy a shift in confidence doesn't lead directly to higher required returns - a higher risk premium - but to a change in willingness to dispose of liquidity. When confidence declines, wealth

holders will prefer bank deposits to equity, and banks will redeem their liabilities with the central bank rather than loan to firms. The volume of credit supply is therefore only extended to the point where the advantage of foregoing liquidity, that is, the liquidity premium of money, marginally corresponds to the credit rate of interest. Thus, a change in the state of confidence corresponds to a change in liquidity preference. This is accompanied by a change in the money supply, which, by a given demand for money, result in a change in the rate of interest.

Efficient markets theory asserts that a change in the scarcity relationships on the markets for goods triggers price changes on asset markets. As a result, that the equity returns expressed in money terms as well as the money rate of interest immediately adjust to the real rate of return determined by the physical productivity of capital. In contrast, in a monetary economy the rate of return of productive capital adjusts to the monetary determined money rate of interest. The direction of causality is by no means irrelevant. It changes the nature of the space of possibilities within which the equilibrium value of productive capital can be defined.

In walrasian analysis the rational decision calculus leads to an exhaustion of the potential resources, full-employment characterizes the efficient solution. In contrast, a monetary economy is distinguished by private commitments that arise from credit relations. It is then efficient, when the commitments that have been entered into are also met. The real sphere is then in equilibrium, when expected sales correspond to production costs including interest. The prevailing state of confidence and associated liquidity preference determine the supply of liquidity and the rate of interest, whereby the conformity of the rate of return on productive capital and the money rate of interest is achieved by a variation of the capital stock. What's crucial here is that a hypothetical trendline identified with the reproduction of the capital stock and the fulfillment of expectations can be assigned to any given state of confidence. In other words, a monetary equilibrium can thus be defined for any given degree of uncertainty. That is, each given state of confidence resp. degree of uncertainty defines a set of possibilities, so that the space of possibilities no longer consists of the single set that defines Neoclassical equilibrium but rather of a multiplicity of sets.

It's not only that the general market clearing does not offer a monetary economy its efficiency criterium. In addition, since extending production reduces the prices that can be achieved in the sales markets, monetary equilibrium is always characterized by an underemployment of resources. In order to secure the reflow of liquidity and enable the generation of profit, wealth holders keep the advance for production process scarce. The scarcity of capital can therefore be said to be intersubjectively determined, not objectively given, meaning that capital is not scarce but kept scarce by the rational, self-interested decisions of financial market actors.

Applying Riese's macroeconomic framework to the question of financial markets valuation, Cymbalista derives the statement "there are no fundamentals independent of valuation". Viewing the macroeconomic budget constraint as intersubjectively determined - ultimately dependent on the degree of uncertainty that agents attach to their

hypothesis about the behavior of the totality of agents - allows for the role of perceptions to be embedded in the notion of value. Rather than mirroring (perfectly, as efficient markets theory advocates, or imperfectly, as most of its critics suggest) an exogenous fundamental value, the financial sphere shapes economic processes. Thus, we have an economic explanation in terms of the reflexive relationship between observable conditions and the economic agents' perceptions of them. Gendlin's epistemology then lets us re-state Cymbalista's proposition positively: in a monetary economy, fundamentals always already embody the interactional process that generates them.

The monetary approach does not change the fact that in equilibrium stock prices correspond to the present value of future earnings. But an equilibrium always requires a given budget constraint that then defines a fixed set of possibilities among the multiplicity of sets. Equilibrium, by definition associated with a constant state of confidence, is a construct of theory and not a state ever observed in reality, where we face a changing space of possibilities. Conditions such as those described in the "Alchemy of Finance" as "near-equilibrium" are periods of stability, which can only be maintained by a constant flow of liquidity in and out of the system. They are, however, nowhere near the general equilibrium of standard economic theory. The state of confidence, even when constant, is a determinant of economic value. In this sense it's a "fundamental", a fundamental for which there can be no role in standard theory. As originally suggested in "The Alchemy of Finance", reflexivity is at work at all times, rendering standard theory irrelevant even in relatively stable situations.

II. A Reflexive Epistemology

1. Organic Intricacy: The Nature of Uncertainty in Markets

In the world of standard economic theory, uncertainty is assumed to be universally reducible to risk. But intrinsic uncertainty is different from risk. Risk is a concept that presupposes we have already reduced what we are studying to unit-like factors, where uncertainty stems from the fact that events are not determined by factors that are logical units. Risk refers to errors within a model, that is, within a particular “cut” of reality. When we talk about risk, we’re thinking within a set of possibilities. We are already seeing market reality through a “grid”, and whatever doesn’t fall into one of our boxes seems random and unpredictable. Ambiguity, a further term that is sometimes used as synonymous to uncertainty, refers to a lack of certainty about the right “cut”, that is, a lack of certainty between different models, among different “cuts”. When we talk about ambiguity, we have already conceived of the space of possibilities as a multiplicity of sets, a multiplicity of grids, each of them given. In contrast, intrinsic uncertainty means that reality is such that logical reasoning first requires a “cutting” and also that we cannot assume that a cut will last through time.

When we think in terms of a shifting, confidence-dependent supply of liquidity constraining the economy as a whole as well as each and all of its sub-systems, the organic, intricate nature of economic interaction becomes apparent – as well as the limitations of reductionistic approaches.

In a monetary economy, all decisions involve disposing of liquidity. We usually think of a market as liquid when there are enough buyers and sellers, so that we can buy and sell without changing prices. We also think of it in terms of low transaction costs: the more liquid the market, the less difference there is between buying and selling prices. In both cases, what’s at play is the nearness of the asset to money – the most liquid of all assets. Money IS liquidity. We can thus think of the demand for any asset as the reverse of the demand for liquidity.

Market prices result from the totality of the decisions of market participants pursuing their goals of increasing and securing wealth. When a market participant buy, he is injecting money into the market, and, the other way around, when he sells, he is withdrawing liquidity from the market. When he increases his exposure, he is foregoing liquidity (either at present, when he buys, or in the future, when he sells short and later has to cover) in order to increase his wealth, and when he decreases his exposure, he is securing his wealth by recouping liquidity. For each individual, the exact compromise that is reached between the conflicting goals of increasing and securing wealth depends on the confidence that he attaches to an investment hypothesis. A high degree of belief in his estimates will lead the investor to increase his exposure, a low degree of belief will lead him to decrease it. Markets contract and expand with the changes in the supply of liquidity that result from the totality of the decisions of the participants. Liquidity thus both provides security and functions as the budget constraint of the system. This is true

for the economy as a whole as well as for each and every subsystem: it's true for the market of a single asset no less than for the wider market system.

With money, economic reality is one interpenetrating system. It is like an organic process, where every aspect of order involves every other aspect. From a given point of view, some aspects can be studied as units, but even a slight shift in point of view will require different modes of isolating units. A given model can only fit some orderly aspects or relations. But the simultaneity of many orders makes the actual order more intricate than any given model can represent.

While logical inference can only be applied to discrete units with a fixed content – and within a fixed, unique set of possibilities defined by an equilibrium, the units to which logic can be applied are already constellated - economic reality does not come already “cut” into such units. For a changing space of possibilities we need to conceptualize an “unseparated multiplicity” as primary, an original interaffecting that can be “cut” in many different ways.

We usually think of things one by one, we isolate certain factors and relationships, but any event always has more facets than what could be listed sequentially. The way we divide it up is never final or definitive. Re-dividing, re-cutting in different ways allows the relevance, or irrelevance, of certain factors to appear in a different light. This is why so many different, apparently contradictory investment strategies can succeed, the reason why a multiplicity of models and strategies can co-exist and potentially serve as a basis for making money in markets.

Further, what we call a “factor” never acts as we think it does. Any aspect you can isolate will affect and be affected by all others. Each one changes what the others really are. A factor never acts alone, but only as it changes and is instantly changed by being in interaction with all other factors. But these interactions are not interactions between factors that have an independent existence, that exist separate from each other and only then interact. The factors are entities that we ourselves constellate, we pull them out from the “unseparated multiplicity”, where they are continuously acting on the forming of all others. Interaction comes first. In time, it re-generates what the factors are.

Intrinsic uncertainty thus stems not only from the fact that events do not consist of discrete aspects, but also from the fact that the market process is not a series of discrete events, a chain of completed occurrences, of finished happenings. The future is uncertain because it's always in the process of being formed. It's not a point in a timeline that already exists and is just waiting for its turn. Rather, it's continually in formation. Uncertainty is therefore not just the absence of certainty about an outcome: it is also the presence of the ongoing process of events.

Further, intrinsic uncertainty leads not only to the impossibility of deductive prediction from a set of entities that are assumed to last through change: it also entails the positive process of creating new entities from which Soros' hypothesis for investing emerge. Once the ongoing happening can change the factors and the system of possibilities - so that no single set of factors, rules or relationships can be just assumed to hold through - there has to be a transformation into some new units, if investing is to be worthwhile.

With a changing space of possibilities, the question then becomes how new units are generated and re-generated. The endogenously changing space of possibilities characteristic of a monetary economy thus calls for an epistemological shift that allows for more-than-logical thinking.

2. More Than Information-Processing

Efficient markets advocates and their Behavioral Finance critics argue whether markets and their participants are perfect or imperfect information processors. But the organic intricacy of market reality calls into question the computational view.

When we think of rationality as merely information processing, we are implicitly assuming that reality comes already cut into bits, into discrete units with fixed content, the units to which logic can be applied. But the intricacy of market reality means that outcomes can't be reduced to stable units that last across interactions. Interaction "undoes" the units which deductive logic and inductive inference need. Rather than the single, fixed set of possibilities required by the information-processing view, market participants face a changing space of possibilities. This changing space of possibilities can only be conceptualized as an "unseparated multiplicity" from which the content that logical reasoning requires is again and again pulled out. This process by which content is generated and re-generated is an active process, a more-than-logical process that requires a living person capable of directly experiencing reality.

Intrinsic uncertainty contradicts the notion that there is an economic reality independent from the market process, and which market valuation correctly or incorrectly represents. While standard theory views fundamentals as unit-like aspects of the environment, as information bits. But with reflexivity information cannot be said to exist in and for itself. Information is not an inherent property of discrete events but a continuous process, which is created over time as the market participant engages with the events. Consensual frames increase the likelihood that particular forms of information will be constructed; a large number of market participants will not only perceive outside events in a similar way but also share perceptions of transition or stability, thus creating, reinforcing or reversing trends. However, the price trajectories that result from the continuous mutual adjustments of the participants do not converge to – nor diverge from – a true representation of an economic reality that has an existence independent from the market process. Valuation doesn't represent economic value but creates economic value: the market process is constantly changing its content. Markets and their participants are thus neither optimal information processors, as standard theory postulates, nor sub-optimal information processors, as argued by Behavioral Finance: markets and their participants are more than information-processors. They create information.

What's needed then is an explication of how information is created. We know that it's only in equilibrium - which is per definition associated with a given set of possibilities - that we can assume that factors, units, objects, entities last in time, and also that shifts in confidence - which affect the supply of liquidity as they are affected by it - mean that the

space of possibilities is changing. But that doesn't yet give us a theory that can serve as a basis for action. We're still left with the question: if logical inference requires stable content but the market is constantly changing its content, ie. if deductive prediction from given units is impossible, how then do market participants build their investment hypothesis? How do profit opportunities arise? If fundamentals already embody valuation, how can we make distinctions between situations where self-reinforcement is unsustainable and others where this is not the case?

In the “General Theory”, Keynes devotes a whole chapter to the nature of market valuation under uncertainty. In a treatment which he himself calls a “digression” from the theoretical core of the book, he offers a description, based on his own observations, of valuation as a result of the interplay between conventional expectation formation and speculation. He mentions three conventions on which the average investor relies. First, ignoring the possibility of future developments the nature of which is unknown, investors assume that the future will be like the past. Second, the assumption that the current valuation is based on a correct estimate of future prospects. Third, relying on average opinion. We can add to that factors that increase the likelihood that particular “facts” will be attended to: shared models and working tools, meanings supplied by the media, institutional behaviors and arrangements.

Keynes points out that conventions, while having a stabilizing effect, are also precarious, prone to sudden and violent changes, which are concomitant to changes in liquidity preference. But having disrupted Neoclassical equilibrium without a norm to replace it, Keynes is unable to tell us when and how conventional expectations must fail: his market valuation is not yet fully connected with the wider economic process. Further, he cannot tell us the means by which we can detect – and profit from – the formation and dissolution of consensual frames.

Soros goes further than Keynes by postulating not only a prevailing bias – which expresses the aggregation of the imperfect knowledge of market participants – but also an underlying trend – which expresses “fundamental” reality. Prevailing bias and underlying trend both affect and are affected by market action, whereby the prevailing bias stands for the gap between market prices and underlying trend. But since Soros is also asserting that the content variables do not behave like logical terms, the reader remains confused.

The reader cannot understand how Soros’ theory of reflexivity allows him to generate investment hypotheses because in the usual conception of theory, events are either determined by factors that are logical units or they are unpredictable. This assumes that without fixed references we cannot differentiate between truth and non-truth, that we can’t recognize better and worse hypotheses. This is a reason why the market efficiency literature has interpreted tests showing that single sets of individuated and located referents cannot be used as a basis for systematically beating the market as evidence that markets are random.

However, neither the underlying trend nor the participants’ biases can be properly expressed in terms of content. Soros finds profit opportunities in a gap between two interaffecting, changing processes, the reality of which can never be fully captured with any given set of already existing terms.

In order to clarify what Soros is implicitly doing as he generates investment hypotheses, we need to introduce a further meaning of the philosophical concept of reflexivity which captures the relationship between process and content.

3. Reversing the Usual Philosophical Order: Expanding the Concept of Reflexivity

Generating reflexive investment hypotheses mandates a type of knowing which cannot come from logical forms, from defined content. In his elaborate treatment of the interface between direct experiencing and conceptual logic, Gendlin explains the transition from given content to an implicitly intricate process in which new content – new units, factors, entities, objects – are being generated.

This – as mentioned before - involves a reversal of the usual philosophical order parallel to our earlier reversal of the hierarchy of markets. While in the old order of priority conceptual criteria, rules or distinctions were considered prior determinants of our actions, Gendlin [1962/1997] shows that meaning creation involves implicit functions that include but exceed logic and patterns. These implicit functions are found in our experiencing process. Experience does not consist only of already formed entities, it always has an implicit, pre-conceptual, only sensed or felt aspect. It's not an axiomatic system working by deductive logic, it's multischematic and non-numeric. But it's not at all arbitrary, rather an intricate, finely ordered on-going change process. The process creates the content-units to which deductive logic can be applied: logic itself cannot determine where logic begins, but after newly formed contents emerge, logic is again needed.

The reversal of the usual philosophical order of priority between conceptual logic and the experiencing process reveals the role of the body in the formation and articulation of meaning. In Gendlin's philosophy, the body is conceived of as an interaction process. Rather than only a collection of parts envolved by the skin, Gendlin's body is a body-situational process, it's the human body-in-situations process, the process of events as sensed from the inside.

Gendlin reformats the subject/object distinction by calling the subject "the body". The body is that which knows our situations directly, and the body is reflexive in the sense that it knows its environment by sensing itself. The bodily self-sensing includes much more of the actual situational environment than one can say or think in terms of known facts and already constellated entities, our situatedness is always more than already available conceptual distinctions and schemes. Something close to the whole environment with all its detail can only be found in the bodily sensing.

The body-situational process, the experiencing process, consists of a sequence of scenes, each of which is an intricate whole, an unseparated multiplicity. A scene is carried forward when objects fall out. An object is an aspect of the environment which we "pull out" from the unseparated multiplicity and hold steady across many changing versions of the scene. Objects are therefore derivative of the process.

Understanding how Soros uses the concept of reflexivity to generate investment hypothesis thus requires a further meaning of reflexivity, this time not as the relationship between two content variables (the content of the participants thinking and the content of the underlying trend) but as the relationship between content and the living process that creates it. Soros' use of reflexivity cannot be captured by a 3rd person view, it involves not just "out there" objects but the genesis of them in a first-person type of process, a self-sensing process. Object creation cannot be done just in abstract terms, it needs a first-person experiencing the process of events.

The failure to distinguish between content and the living activity that creates it is also at the core of the Cretan self-reference paradox. In the paradox, what the sentence says is applied also to the process of saying the sentence. The sentence itself presents no paradox. But if the fact that a Cretan is saying it is treated as if it were also just a content, then there seems to be two contradictory contents of the sentence. The paradox (and Goedel's proofs employing it) arises from ignoring the reflexive process which generates and speaks sentences. Gendlin "solves" the paradox by no longer treating the activity of operating the calculus as if it were a term within the calculus: the human activity of speaking and thinking is not a "what" but a process which produces a series of "whats".

4. A Process View

In Gendlin's epistemology, there's a reflexive identity of living actors and events, between thinking and "facts". Each bit of bodily process is also an environmental event, and any relevant change in the environment is also a change in the body that lives with this environment.

Environmental changes are only relevant at the moment they enter into the living body-environment events. That is, in order to impinge, an event has to become part of the events which are body-environment interactions.

Environmental changes that will later enter into the process can be noticed by an external observer before they enter into the process, but this observer is an observer from within the process rather than the external observer we find in traditional scientific models. In Gendlin's philosophy, the space-time system of science is itself a reflexive product of the process of events consisting of body-environment interactions.

The traditional scientific space-time system requires a hypothetical external observer, the so-called "idealized observer" (or, with Einstein, more than one). Events are conceived as space and time points that do not relate to each other of their own accord. A point does not have its own internal time-relationship to other points. As Kant has shown, the system derives its continuity from the hypothetical external observer that assures continuity by providing the missing relations, by imposing external relationships between the points. The space and the content are thus presented before someone – who is not present(ed) in the space. What happens occurs in a pure present, and the external observer gives it import for the future.

But events don't happen in a pure present. Rather, events produced by reflexive interaction include not only their occurring but also their import. What a fact "is" is its implicit effect on other facts. These effects will become visible in the future. A fact is the changed future which it has just made. Therefore any occurring is also its changed implying of further eventing.

"Implying", one of the basic concepts of Gendlin's process philosophy, expresses the internal time continuity of events. Rather than having only already-cut objects perfectly present or not there at all, living processes are always incomplete. "Implying" captures the biological intentionality essential to organic, living processes, a tendency or directionality that is never completely formed at any one moment.

When content is viewed as if it were a separate, cut-off thing subsisting just as itself in empty space and time, the generative process which is always on-going and is now changing the implying of future objects remains hidden. Implying reveals the process which the world of entities hides, the process that is on-going generating and re-generating them.

In "A Process Model", Gendlin conceptualizes the fact that the process of events does not consist just of explicit occurrences by retaining the positional time, the linear series of what occurs, and adding a co-existing series of implying. Every occurrence is also an implying. Insofar as the occurrence moves from the implying, it changes the implying – but not just in what the implying was (since it does not consist of already-discrete finished entities) and also not into something else, but into something continuous with what the implying was. This kind of continuity, which we all know from experience, Gendlin calls "carrying forward".

In the process of events, occurring and implying are staggered: any one happening both occurs into (and changes, that is, carries forward) the last implying, and is the changing implying of the next event. Since implying does not consist of only a set of already defined possibilities, the next-implied event is not an already formed event, that is, it does not yet consist of a set of entities. Each moment is a whole, and occurring carries the whole unseparated multiplicity forward, into a new implying. The implying is the focal salience of the unseparated multiplicity which actually functions just then.

An organic process always implies its next step. It moves by means of the effect on it of the actual occurring of the environmental feedback which it itself implied. The next occurring event can either change the implying in the way it itself implied, that is, carry it forward, or not. An occurring that does not change the implying in the way that it itself implied is a stoppage. With a stoppage, the implying remains the same, unchanged as long as it is missing. At this juncture, we can encounter the implying as such.

Through stoppages, the original interaffecting gets differentiated. A certain aspect of the environment separates itself by being absent. When an aspect separates itself, we can speak of "a" process that is separated and being stopped, a separable process from the whole process. Some of the usual process will not go on, a distinction has been created, there's the stopped process and some other process which does continue, and the body is the new process which does continue. The stopped process will continue to be implied,

and what continues is different than if there were no stoppage. The continuing bodily-process carries the stoppage.

The part that separates itself and stops a process by its absence is an object. The object is implied by the carried stoppage, the carried stoppage is the body-version of the missing object. When the object occurs, the whole complex process which was stopped by its absence resumes. When the process resumes, the object is no longer implied. But the body does not imply the object by having some kind of copy of it, what is implied is a further body process, the recognition of the object is the resumption of the process.

While we can distinguish strings of separate processes, these are not separate all along their way. When the process resumes, there will be a new whole. The interaffecting precedes the differentiation and continues with it, the processes are then coordinately differentiated, that is, there aren't separate strings as such. A stopped process is "carried" by the differently ongoing process. The body's own implying is the focaling of the many processes.

Implying cannot be externally observed - since the process only exists for an experiencing person, for an observer internal to the system. But we can sense it: the kind of continuity that carries forward an implying can be directly experienced. Gendlin's theory of how human bodies carry implicit experiencing of situations and of facts still in the process of being made shows how we experience the demandingness characteristic of organic processes by sensing ourselves. We shall go further into it as we explain the role of Soros' bodily knowing in the generation of investment hypothesis. But before we can do that, we need to see how the process view explicates his theoretical framework. With the process view, the same concepts that capture the object creation process involved in Soros' generation of investment hypothesis also apply to the market process itself.

5. The Underlying Trend

Soros' underlying trend is not a trend in the ordinary meaning of trend. Nor are the fundamentals which it captures fundamentals in the conventional sense.

In its conventional usage, a trend is related to "trend extrapolation", where one uses a model (whether linear or non-linear) to fit a line or curve to a set of points tracking some variable through time. Saying that the trend will continue means that for at least some time into the future the new data points will fall reasonably close to the projected trend line. One of the meanings of the assertion in efficient markets research that prices are unpredictable is that such trend extrapolation cannot be the basis of a profitable trading strategy. But Soros' trend is not a fitting, it rather represents a changing process. The type of forecasting that this kind of sequence permits involves seeing, at any point in time, what has become possible and what has become unlikely, and this entails judging what is relevant and what became irrelevant to possible future developments. The reality of an underlying trend can never be successfully captured in any already given set of terms and definitions.

In the organic approach, money introduces an “implying” into the system. Investing is not just an actual present fact but also always involves a tension towards a future time which is part of the present decision. While in standard theory money is treated as an external system of numbers that reflects but does not affect value formation, money creates an internal time-relation. Money is inherently time generating, it generates a relationship to a future event. This event does not already exist as a point in a time-line, just waiting for its turn. Because implying does not consist only of a set of already defined possibilities, money creates uncertainty.

Concomitant to the series of prices that occur as a result from the totality of decisions of market participants, we have a series of the average liquidity premium implicit in investors’ decisions summarizing the confidence that agents have in their hypothesis about future occurrences. While the confidence-dependent supply of liquidity constraints the economy as a whole as well as each and all of its sub-systems, it’s only the liquidity premium of money that is visible, as the money rate of interest. The liquidity premia of all other assets remains hidden, functioning implicitly in the regulation of the system via the competition between the different assets to fulfill the dual goals of increasing and securing wealth.

The equilibrium condition, where the sum of expected return and liquidity premium is the same for all assets, doesn’t describe any state we find in the actual process of events. It expresses the logic of the system, the interaffecting where nothing changes without everything else changing in a certain – and yet open - way, so that while actual occurring changes the space of possibilities, it doesn’t change it in anyway whichever. While the process of events is not determined, it’s never random either.

With money, the market process has the internal continuity of self-organizing processes, showing the interactive nature of biological systems. Rather than viewing the financial sphere as an entity separate from the real sphere of the economy, we view valuation as a body-environment interactional process. Like Gendlin’s body, the market is not a discrete thing with an independent existence: the market and its environment – the whole web of interlocking relations which constitute the economy – are in interaction first.

Market action is always interaction. Each bit of market process is also an environmental event, and any relevant change in the environment is also a market price change. The market moves thus have an environmental version which itself has an impact on the market. There is a reflexive identity between market action and the environmental event that is the same action as the actually occurring in the environment. But what confronts market participants is never just the result of their combined action. It’s not market action alone, just the price change, but the action as it is actually happening, as an interactional event in an intricate environment.

Fundamentals are aspects of the environment. While standard theory – and standard fundamental analysis – views them as entities with an independent existence, with a given content which can be correctly or incorrectly represented, in the organic approach they don’t have a separate existence as already defined units. The environment does exist independent from the bodily interactional process, but only as an undifferentiated whole: any of its aspects has an objective existence but as part of the unseparated multiplicity. It remains undifferentiated until it is created as an object as a product of the on-going

interactional process. Objects are a product of the on-going implying, and the environment itself does not imply, only bodily-situational processes do. In other words, in order to affect prices, an environmental event – factual or expected - has to be constellated as such by market participants.

Soros' underlying trend thus captures the environmental side of the market-environment interaction: the sequence of liquidity-premia implied by the whole web of interacting processes that constitute the economy as opposed to the state of confidence underlying the sequence of market prices.

Standard fundamental analysis treats its fundamentals – P/E-ratios, cash-flows, etc. – as if they were a pre-defined and, in principle, exhaustible list of things (even if you yourself or anybody else cannot list them). These fundamentals are seen as having a well-defined, unique meaning, whose relationship to prices exist as such. But the fundamentals in Soros' underlying trend are not simply there to be recognized (or not) by an external observer. Rather, they result from the structuring used by a living system.

With reflexivity, economic reality is multi-schematic: the way one divides it up into parts, while not arbitrary, is also not final or definitive. The kinds of processes that one can pull out of the stream of events are limitless in number, economic reality can be cut in many different ways, so that on the one hand things going on in the market for one specific asset can be seen as part of a number of different larger processes, but also that something normally considered central to what makes that particular market function as it does could be better thought of as part of some other process, with perhaps less relevance to the performance of that particular market than originally thought. No hypothesis can represent the whole web of interactions that constitute the economy and yet the implicit context of market action is always functioning empirically.

The process view thus clarifies the reflexive nature of the fundamentals expressed in Soros' underlying trend. Soros' fundamentals always already embody an interactional process both in the sense that money creates economic value and in the sense that they are created by the experiencing process of the market participants.

6. The Prevailing Bias

In Soros model, the prevailing bias – which expresses the gap between market prices and an underlying trend – aggregates the imperfect understanding of market participants.

Standard finance cannot account for the prevailing bias in terms of economic categories. On the one hand, an efficient market is, per definition, unbiased. On the other hand, the standard approaches that question efficiency – such as behavioral finance – continue to postulate an objective norm, the “true” fundamental value, defining market and individual decision biases as divergences from this norm. Now, with reflexivity, we do not have an objectively given intrinsic value independent of market action. How then can we conceptualize market and individual biases? And how can we make a distinction between situations where the bias gives rise to profit opportunities and others where this is not the case?

Unlike standard theory, the organic framework is able to encompass the prevailing bias in terms of economic categories. The prevailing bias expresses itself in the state of confidence, which determines liquidity preference. Markets contract and expand as a result of the totality of the decisions of market participants pursuing their goals of increasing and securing wealth, whereby the former requires forgoing of liquidity and the latter withdrawing liquidity from the market. For each participant, the exact compromise between the conflicting goals of increasing and securing wealth depends on the confidence he attaches to his hypothesis about the future behavior of the system. A high degree of belief leads to an increase in exposure, a low degree of belief to a decrease. Confidence has not only a quantitative but also a qualitative dimension. In terms of quantity, it leads to action. In terms of quality, it leads to good or bad deciding. While the state of confidence is always a determinant of prices, confidence can be biased or unbiased. This distinction allows us to capture both the fact that the market process is constantly creating its own content and the possibility of a gap between market valuation and an underlying trend.

The confidence-related biases – overconfidence and loss of confidence – are of a different nature than the biases that distort decision making about discrete variables with fixed content. In the latter case, the biases do not let us recognize a given value which depends on the states of the world which are themselves discrete and complete, they lead us to misrepresent existing content. But in the former case, the biases concern our capacity to think and feel beyond already given patterns, to detach ourselves from conventional wisdom and habits of feeling. We are attached to fixed content, our experience is “stuck” with already constellated entities rather than interacting with the intricacy of the situation where entities are constantly in formation. We don’t realize that the market process is changing its content. We think and feel with the herd rather than about it. We don’t think with a model but within it. What a biased market participant overlooks is the very nature of intrinsic uncertainty itself.

There are both epistemological and psychological dimensions to the prevailing biases. The first concerns the nature of the thinking process, the second has to do with the psychology of uncertainty.

Pattern making is the nature of our thinking process: we impose patterns upon what doesn’t have a pattern of its own. An investment hypothesis is a cut of market reality – we are isolating certain objects and relationships, imposing a pattern upon the wider web of interacting processes which itself can never be represented. In the sense that we are imposing a pattern upon what’s not itself patterned, our thinking is always biased.

This inherent bias is a flaw when we treat a pattern as if it were just that, as if it existed as itself in empty space rather than only within the texture of intricate events. Rather than a false representation, a mismatch between two content variables, this flaw is the same that we find in the liar’s paradox, where the saying and the said are treated as equivalent.

While our concepts are always biased in the sense that they cannot be a uniquely true representation, we can make a distinction between two types of thinking: a thinking in

terms of already constellated entities, and a thinking that carries forward the intricacy of the process of events. This distinction is parallel to that between conventional valuation and the underlying trend, to the distinction between conventionally given possibilities and the endogenously changing space of possibilities itself.

For any piece of market action, there's an environmental version, an occurring in the whole web of interactions that constitute the economy, which changes the possibilities implied in the market process in a way which is neither pre-determined nor arbitrary. Conventions structure the experiencing process with extant concepts and patterns such that new objects do not fall out, all we perceive are the already constellated entities. They affect what's salient for a market participant, leading to action on the basis of consensual objects that are detached from the wider implicit context of the market process.

Conventions are stoppages in the experiencing process of market participants which then get aggregated as stoppages at the market level. Stoppages lead to a differentiation of the original interaffecting: they mark a juncture where the usual process cannot happen. They create a hiatus, a split in two types of sequences: a sequence in which the implying of the intricacy of economic interaction is being carried forward, on the one hand, and on the other hand another sequence where only some entities are impinging, where the environmental feedback is not fully entering the interactional process.

The prevailing bias expresses the hiatus between two processes rather than a mismatch between two content variables. For the absent aspects of the environment – the missing objects – don't have an independent existence as finished and separate entities. We thus have a distinction between the conventional carrying forward of a scene consisting only of extant objects and a carrying forward of the scene as the intricate whole that it is. In the latter, the missing object is being carried forward as the implied stoppage, as part of the unseparated multiplicity – as a single implicitly intricate bodily datum. This bodily felt experience is the direct sense of the intrinsic uncertainty.

We face uncertainty when we meet the gap between what we have already conceptualized and the actual requirements of our situation – when what we know explicitly is not a sufficiently good basis for action. At this spot where our explicit knowledge fails, the implicit, pre-conceptual aspect of our experiencing process can be sensed or felt as a bodily apprehension.

While it's only with our bodily felt experience that we can know a scene as the intricate whole that it is, emotionality makes this bodily knowing difficult to access. The prevailing bias thus has not only a cognitive but also a psychodynamic side – we speak of market sentiment. At the individual level, the affective element underlies and reinforces the cognitive bias.

Uncertainty is difficult to tolerate. The confidence-related biases stem from deeply ingrained habitual responses that arise in connection with a low tolerance for uncertainty. There are two basic tendencies that human beings show when the lack of certain knowledge generates an anxiety that is experienced as intolerable. The first habitual tendency is a denial of uncertainty. When we fall prey to it we overlook the fact that we don't know for sure to make it easier to act. The second habitual tendency is that

of withdrawing. In this case we remain aware of uncertainty, that is, we know that we don't know for sure, but this makes us afraid to act and prone to premature disengagement. In other words, we collapse. These tendencies distort our sense of the situation. They do not let us recognize the way in which the future might turn out differently than what we hope or fear, they do not let us think beyond what we already know. They do not let us see how the two forces are actually working at the market level, affecting the balance of power between those with positive and those with negative expectations and endogenously changing the space of possibilities.

Patterned feeling thus underlies and reinforces patterned thinking, hindering access to the intricate context in which new "facts" are ongoingly being formed and leading to the formation of trends which might not be sustainable within the whole web of interactions that constitute the economy.

Having explicated different elements in Soros' framework at the conceptual level, we are now ready to bring his operating principle, the belief in fallibility, and the practice of finding the flaw - in which his backache plays a role as a mechanism for detection - under a larger theoretical frame.

A practice developed from Gendlin's philosophy, in which the endogenously changing space of possibilities is a source of new object creation, makes experiential reflexivity systematic, teaching how to work with the bodily apprehension of objects still in the process of being formed. Combined with the organic economic framework, it allows us to formulate the steps involved in generating reflexive investment hypothesis, revealing the positive method which is implicit in Soros' belief in fallibility

III. Operating with the Belief in fallibility: The Practice of Experiential Reflexivity

1. Intuiting the Prevailing Bias

Having the interactive nature of biological processes, the mind of market – the collective behavior of the system – can itself be conceived as being embodied. In order to grasp Soros' use of intuition we can turn to a concept that, in an interpersonal setting, is closely related to intuition: empathy, the capacity to participate in or experience another person's feelings, thoughts or movements.

Empathy has been the subject of considerable attention in the context of the psychotherapeutic relationship. Empathy, knowing first-hand the experience of another person, is a somatic state that builds on self-awareness. When we make inferences about another's inner state from observed behavior, we search in ourselves for appropriate sensations, feelings, thoughts or movements. In observing the other, we unconsciously create in ourselves the perceived patterns and reconstruct a meaning consonant with it.

The prevailing bias has both emotional and cognitive aspects, involving a patterned sentiment as well as a patterned thinking, a – marginal - consensual conception, that is, the rationale behind the shift in relative strength between those pushing prices up by buying and those pushing prices down by selling. Similar to the use of empathy in a therapeutic relationship, where therapists makes use of their own reactions to the client and of their self-knowledge to make inferences about the inner life of the client, intuiting market trends comprises both affective and higher order cognitive elements.

In the organic approach, market prices result from the totality of decisions of market participants increasing and decreasing their exposure as they pursue their goals of increasing and securing wealth. Increasing and securing wealth are the economic manifestations of the most basic functions of living beings acting in the world: reaching out and withdrawing. In economic behavior, these tendencies are present whenever a market participant makes a decision: increasing wealth is a goal approaching behavior, securing wealth – ie. avoiding losses – a goal-avoidance behavior. We each have an experiential version of the forces that are moving prices. It's as if we have an overconfident, greedy or hopeful “sub-identity” and a fearful one. The first might feel energetic, without a shadow of doubt in mind, eager to act. The second suffers from a loss of confidence: it might feel apprehensive, maybe scared to make decisions, worried about outcomes that are out of our control.

These tendencies are somatic states, states of the organism as a whole. Human beings aren't a collection of individual parts in which the whole is equal to the sum of the parts but rather integrated wholes in which structure and function interact. Experience is not something that we just have or that happens to us, but something that we do, always involving an activity. In order to perceive anything we must act in a certain way. For instance, what we see – and do not see – depends on how we see.

We usually think of our felt experience as merely mental, without recognizing its bodily basis. Unlike vision and hearing, feeling – the sense through which we know

ourselves and our environment - is not localized in a specific organ, and yet there aren't any feelings without a physical sensation within our bodies. Even though less obvious, this is no less true for subtle feelings and emotional states than it is for sensations associated with physiological processes, body position in space, textures, etc. Physiologically, emotions involve the limbic system but what we cannot feel anything without a change in body organization. This change occurs subconsciously, as the emotion is translated into a motor command and sent to the muscles, which amplify it for the sensory cortex.

While we have no sensation of the inner workings of the nervous system, we can feel their manifestation as muscular changes provoke our attention. Any change in the nervous system goes together with a change of attitude, posture and muscular configuration. Neuromuscular and psychological processes are thus not two different things but two aspects of the same thing, of the experiential process.

The basic emotions affecting valuation, fear and greed, are related to very specific muscular configurations. To each of them corresponds a pattern of muscular contraction without which it has no existence. Fear is associated with the withdrawal reflex, also known as the startle response, in which the anterior flexor muscles are contracted, curling the body. In contrast, greed is assertive and related to the action response, which contracts the posterior extensor muscles, lifting and arching the back. A biased market participant lacks awareness: the capacity to make sensory-motor shifts. Correspondingly the prevailing bias means that the market does not move in both directions with equal ease. We can say that the prevailing bias has a neuromuscular correlate in the sense that the asymmetry we find in the way prices fall or climb up reflects the different ways in which flexors and extensors function: the former contract very quickly but cannot remain so for very long, whereas the latter contract slowly and for longer periods of time.

The prevailing bias is an aggregate but it's not just additive, it's more than the average individual bias, not only because it's self-reinforcing via its influence on observed prices but also because of crowd psychology. The interaffecting within and between the two crowds at work – the bearish and the bullish – eventuate in the shifts in the balance of power which constitute a trend. The mass psychological aspect of trend formation is related to herding impulses involving the limbic system, the part of the brain that controls emotions and motivation. Even though most people do not know how to work with it, the capacity to recognize such patterns is instinctive, a mechanism with which evolution has endowed us to handle complex and uncertain social situations. We resonate emotionally, our physiology mimics market sentiment. We can sense the affective element of the prevailing bias by sensing ourselves.

Most investment psychology literature emphasizes the importance of a detached stance, neglecting the fact that our bodily reactions contain information that we cannot otherwise access. We cannot fully grasp the import for the future of any of the aspects of market reality without a bodily sense. It's only with our bodily felt experience that we can know a scene as the intricate whole that it is.

Even though the somatic tracking of market sentiment usually results in the prevailing bias, it can be a source of information for inferring the rationale behind a

trend, for formulating an investment hypothesis. Resonance thus finds the conceptual and imaginative aspects of anticipating changes in belief systems contingent on possible future developments. Soros senses that self-reinforcement is implied in the market process, and articulates the reasons why the implying can be carried forward by further occurrences, that is, he formulates his investment hypothesis. And, at first, follows the trend.

2. Setting Oneself Outside the Process: Engagement vs. Detachment

The somatic tracking of market sentiment presupposes engagement. Rather than the detachment commonly emphasized, Soros' intuiting the prevailing bias involves an identification process. But just like an experienced therapist, Soros also has the ability to set himself outside the process and avoid merging with the crowd.

What does this setting oneself outside the market process entail? How can we use our bodily reactions as a source of information without being swept by the next-implied behavior of the crowd? We now need to make a distinction between having a bodily felt sense of a situation and an emotion which occurs within the situation. It's only when we separate our bodily felt sense from biased emotions that our gut feelings become gut knowledge.

All human experiencing consists not merely of occurrences but always also includes the experiencing of their import. When we pause to contemplate a situation, this pausing is a sequence in which each bit is a version of the situation. Gendlin calls such pausing "versioning". In this situational – as opposed to behavioral - space, we have a "doubled" process.

Planning and deliberate decision-making is one kind of versioning. For instance, driving on a road, we can pull the car over to the side and look at the map. We imagine various routes on the map, quickly, one after the other, whereas in the actual situation we can pursue only one route. Human events of every kind include such versioning, which is as always already a structural part of what the events are.

In situational space, scenes are carried forward when an object or objects fall out from the intricacy of the experiencing process. Most people look only at the content - concept, object, pattern - as if it were presented in front of them. But it is only via their bodily apperceptive mass that the familiar is recognized, even though they do not know how to find the apperceptive mass as such.

This apperceptive mass is our bodily felt sense of a situation. It is our sense of the space of possibilities as a single bodily datum, as an unseparated multiplicity where all possibilities are already crossed - each including the change in whether and how any of the others could be carried out. This is the implicit aspect of our experience, our bodily apprehension of the situation as the intricate whole that it is.

The bodily felt sense has emotional – along with factual – components. The felt sense includes emotions, experiences and thoughts which we have had in the past, but it is not an emotion. An emotion is often sharp and clearly felt, while the felt sense is

complex and much more difficult to describe. It is a broader, holistic, unclear sense of the whole situation, made of many interwoven strands but felt as one. This bodily knowing is difficult to access because what we first meet is the emotions – they “spring out”, structuring our experience such that we version situations in a patterned manner.

We can set ourselves outside the market process – and still remain in contact with it – when we turn the apperceptive mass with which we interpret the situation into an object. Our bodily reactions then become a directly sensed object, an object for which we have created a direct referent, which then can itself be versioned. Versioning the apperceptive mass gives us several strands - and room to move among them: we find ourselves no longer within an already structured situation but moving in situational space. Once we can sense more than the usual feelings or emotions, once we sense what lies below or behind them, we can sense the situation itself. At this point, our bodily felt sense of the next implied market behavior can guide our thinking rather than bias it. This type of versioning is at the core of Focusing, the practice which Gendlin developed from his philosophy.

Once we are able to enter and conceptually articulate the implicit intricacy which our organic bodily reactions contain, we no longer have to leave them aside. Rather than keeping our experiential edge out of the picture, we can let it inform our decisions. Instead of the detachment commonly associated with rationality, the practice confirms the superiority of Soros’ embodied, reflexive rationality where meaning formation is in close contact with the ongoing process of bodily felt experience.

3. The Flaw

Guided by this operating principle, Soros looks for the flaw in every investment thesis. At the conceptual level, Soros’ belief in fallibility entails the knowledge that any hypothesis is but one construal of market reality, which can never be final or definitive. No investment hypothesis can represent the whole web of interactions which constitute the market system. A hypothesis is a “cut”, in which we isolate certain aspects and relationships. But what we isolate does not exist as discrete entities, only within the texture of intricate events, never acting alone but as originally already crossed. The mere fact that they are cut-off from the implicit, intricate context in which possibilities are always in the process of being formed renders hypotheses inherently flawed. His conceptual framework leads Soros to search for a flaw, but in the actual searching for the flaw in a concrete situation his bodily knowing plays no less of a role than his theory. This is where his (in)famous backache comes in.

Market action is always interaction, and the action as it occurs in the wider system changes the space of possibilities implied by the market moves. The more consensual the “cut” underlying the rationale for the trend – the stronger the trend – the more it may remain in place despite the changes which it itself is implying. This is a stoppage in the interactional process, that is, the implying is not being carried forward as a whole.

Situations where positive feedback processes cause their own reversal are comparable to what in psychotherapy is called “incongruence”. You can see it clearly when, for example, someone feels alone and starts demanding attention from his partner. If he does it in a way that disregards the whole situation, for instance complaining to the partner, accusing her of being neglectful, etc, the partner will feel crowded and end up distancing herself: the way the person interacted brought about the exact opposite effect of what was desired. Incongruence arises from habitual, structured patterns of feeling and behaving that get cued by present events without interacting with events; the person is not responsive to the actual situation. It's a frozen aspect of experience, a static pattern that occupies the center of the persons' sensorium. Such patterns are "stoppages" in the experiencing process (Gendlin [1964]). In the market, conventions create such stoppages. Reflexive profit opportunities arise from the fact that the market expects something to happen, behaves according to these expectations, but is actually causing the opposite effect.

As seen above, in Gendlin's process model stoppages create a hiatus, a juncture where the original interaffecting gets differentiated in two different sequences. During phases of stoppage, the stopped process will continue to be implied, and what continues is new, it becomes separate by being different than if there were no stoppage. The aspect of the environment which is missing, the object which is not entering the interactional process, is implied by the carried stoppage, the carried stoppage is the body-version of the missing object. When the object occurs, the whole complex process which was stopped by its absence resumes. When the process resumes, the object is no longer implied. A very complex result sometimes happens from the “return” of a very simple object.

The missing object however may not exist as such, as an already formulated, separate entity but only as it functions as yet uncut in the unseparated multiplicity. The flaw, the aspects of the environment which are not yet impinging, it may be still implicit, an unfinished fact still in the process of being made.

Soros' method depends on the emergence of new objects, new facts, new questions, new units. He picks out where conventional expectations must fail by a process of new object formation. This process can only be understood once we have a way to speak of the embedded implicit nature of facts while they are still in the making. It's in this state that Soros first discerns them. And it's in this state that his thinking-feeling process is of the same kind as the process of events, and this is only possible because Soros' is a human body and this is the situation in which he is immersed.

Soros can sense the carried stoppage in the market process by the same means that he can pick up a trend: by sensing himself. The bodily self-sensing includes much more of the actual situational environment than one can say or think in terms of known facts. Something close to the environment in all its detail can only be found in the bodily sensing.

In his search for the flaw, Soros meets the gap between what he has already conceptualized – the original investment hypothesis - and the actual happening in the wider system. At the conceptual level, he knows that the investment hypothesis is inherently biased, but it's only bodily that he can sense where his explicit knowledge fails. The finding of a flaw in a concrete situation involves the implicit sensing of newly

incipient facts being formed.

Soros' implicit, bodily knowledge of the market situation consists not merely of occurrences but also the experiencing of their import. It includes the as yet unformed implying for further occurrences, the unfinished future that is part of what is now occurring. This implying in an intricate whole, which functions as one: where possibilities – both the already articulated ones and new ones - are originally crossed and unfolding as an unseparated multiplicity. The kind of continuity which carries forward an implying cannot be externally observed, but we can sense it. An organic process constellates its obstacle as a focal object. This is why Soros' body-process is uncomfortable and demanding until he articulates the flaw.

Like an experienced therapist working with a client, Soros tracks the market's incongruent behavior with his own physiology, picking up incongruence instinctively, before he's able to articulate what changes in the whole scene the market is blind to - and would bring about a reversal once the market constellates it as a "fact".

4. The Role of the Backache: an Entry-Point to Experiential Reflexivity

Soros' bodily tracking of the stoppage first manifests itself in a muscular tension – which can be so strong that his back hurts. As seen above, neuromuscular and psychological processes are not two different things but two aspects of the experiential process. As long as Soros can only see only the positive side of an investment hypothesis, the uncertainty he is conceptually aware of hasn't yet translated itself into a perceptual shift. He's not yet able to move in both directions with equal ease; he's not yet embodying his awareness of uncertainty, his take on the situation is still patterned, "stuck". He explicitly knows how one of the tendencies is at work at the market level, without yet recognizing the workings of its counterpart in the wider scene. A sensory shift is always also a motor shift, and while he hasn't yet conceptualized the flaw, his back "knows" it: the carried stoppage at the market level has its neuromuscular correlate in Soros' back: flexors and extensors are not balanced, they're not functioning in an efficient, coordinated way. When we are functioning efficiently, flexors let go when extensors contract, and the other way around. But with a stoppage, the system is simultaneously doing one thing and its opposite. Soros' backache thus reproduces the inefficiency, the incongruence found at the market level.

Soros' bodily resonating with the implicit context of the market process might sound mysterious. But in fact our thinking process is constantly being guided by subtle bodily tensions. For example, when we try to remember something we have forgotten, we can sense a demandingness, a certain tension – we can offer countless possibilities, but the demandingness will only accept the right thing. This non-logical demandingness that can only be bodily experienced is our sense of an implying which is not being carried forward. It guides us in articulating what needs to be articulated. It has a focal character which can let us know – uncomfortably – that we have not yet thought explicitly about what is salient just now, or – with a certain characteristic tension-release – that we have. When our thought is guided by the focal salience, we are carrying forward the implicit intricacy of our situation.

As a mechanism for detecting a flaw, Soros' backache works as a barometer. However, a physical indication that something is wrong does not yet tell one just what is going wrong. Finding the flaw involves a re-cutting of the space of possibilities, and the backache functions as an entry-point into the bodily-situational sensing where such a re-cutting can take place.

Soros taps into the market's endogenously changing space of possibilities when he attends to the bodily sense of the intricacy of the situation, to his bodily apprehension of the gap between what he explicitly knows and what he yet doesn't know. This bodily apprehension is something we all have experienced: we meet it, for instance, when subtle bodily feelings communicate to us when a decision that might look perfectly logical and reasonable on paper is not really addressing the crux of the problem. Just like when we try to remember a word which we have forgotten, here too the bodily apprehension can guide us in articulating what needs to be articulated.

When we turn the apprehension into an object, when we form a direct referent, we are directly tapping into the situational process. As mentioned in III.2 above, when the bodily apprehension becomes a direct referent we can version it. The felt sense forms as a sequence in which one's sense of the situation is carried forward as a whole, and in versioning we separate or generate several strands from it. New objects - new possibilities, new questions, new hypothesis - emerge from a process in which the implicit bodily experiencing is explicated.

The strands one explicates from a felt sense are strands of the intricacy which is inherent in all objects - since they're by-products of the experiencing in which they're made. This is what experiential reflexivity means.

Reflexivity thus involves not just "out there" objects but the genesis of them in a first person type of process. This is not something that can be done just in abstract terms, it needs a first-person process experiencing the process of events: an observer internal to the system sensing the kind of continuity that organic processes have. Soros directly experiences reflexivity as he finds the flaw by entering into the on-going process that produces facts - and which is more than already existing facts.

Soros' backache is often seen as contractory to his assertion that his theory guides his decisions. The broader reflexivity framework overcomes the apparent dichotomy between his use of theory and instinct, showing that generating reflexive investment hypothesis requires a type of knowing which cannot come from logical forms alone. The practice derived from the framework demonstrates how bodily apprehensions such as his backache give an entry into the crucial implicit context which logical reasoning involves. Rather than contradicting his use of theory, the backache thus corroborates and embodies it.

5. Experiential Reflexivity

The reflexive object formation process, which Gendlin has made systematic with the Focusing practice, works in a zig-zag which has both a conceptual and a bodily sensed side. The zig-zag process has a more-than-logical order: conflicting schemes can be employed on the conceptual side, but in relation to an implicit experiencing which is multischematic and non-numerical. A very small detail under many higher order categories can have the effect of changing the “higher” categories and systems. While this change is open and unfinished, it is nothing like indeterminate, having a demandingness of its own.

When the bodily felt sense becomes the object, it forms as a sequence of changes in which the whole possibilities space is being carried forward. This carrying forward – the continuity from the implicit intricacy into new objects - is never arbitrary. It doesn't happen only because we wish it. A directly-sensed referent does not form, does not become “this” felt sense, unless it can form.

What emerges is always logical in retrospect. But while with hindsight one can see how the new piece of information logically follows from what was known before, it couldn't have been deduced by abstract reasoning alone.

Soros' experience of uncertainty, his bodily apprehension of the endogenously changing space of possibilities, is thus a source of not yet conceptualized facts. While the market as a whole is “stuck” in some old cut, Soros is re-cutting the space of possibilities, pulling out from the wider and intricate picture possibilities which are not yet impinging, incipient facts. These are facts still in the process of being formed which, once salient in the public's eyes, would lead to a re-arrangement of the scene, that is, to the demise of the prevailing hypothesis and thus to a trend reversal. While Soros cannot know in advance exactly which future piece of news will lead to the conventional shift, he can watch out for it. He's then ahead of the curve.

Once the new facts have emerged, they seem to have been there as such already before, the public having merely overlooked them. This is why Soros' had difficulties showing reflexivity at work by means of examples. At the point he first discerned them, the facts were actually embedded in the implying. “They” existed before, not as a discrete “they”, but as undifferentiated parts of an unseparated multiplicity.

The implicit sensing of a situation is difficult to stay with. Typically one touches on it and loses it, and returns to it again, and loses it again. While some people naturally engage in something akin to Focusing's zig-zag process between direct experience and conceptualization – and Soros certainly seems to be one of them -, most people do not know how to access their experiencing process.

Gendlin devised specific steps and instructions for systematically contacting the edge of awareness and explicating implicit knowledge that at first can only be bodily apprehended. Vast experience and research has proven that the kind of inward attention to what is at first sensed unclearly and which allows people to identify a broad attitude or larger issue that underlies specific problems and questions is a skill that can be taught. Listening to the bodily apprehension, symbolizing it and inquiring into it in certain ways brings forth information – often in the form of questions and hypothesis – previously unavailable to the conscious mind. When this happens, it brings a felt shift, a definite physical feeling of something moving within, changing or getting unstuck. The nature of

the problem changes with each shift; when you finish, the problem is not the same as when you began: as its felt sense changes, so does your take on it.

The application for decision-making in financial markets – which we call MarketFocusing - locates and deals with the experiential version of the abstract formulation of microeconomic choice as defined in the organic approach. It moves past habitual reaction patterns related to an intolerance of uncertainty – denial (associated with overconfidence and greed) and withdrawal (associated with loss of confidence and fear) – to have both the motivation to act and the cautionary tendency work in tandem. The procedure teaches how to access each of the habitual tendencies inherent in market participation, and then to have both simultaneously present, without identifying with either. When this happens, the positive aspects of the two tendencies coordinate: the person can not only act with an awareness of uncertainty but also, when circumstances so demand, withdraw without experiencing her own fallibility as a threat.

The person learns to separate her own individual-psychological habitual tendencies and biases from her implicit sensing of the situation which is uncertain because it's not finished, it's still being formed. While this does not make the unpredictable predictable, it is highly empowering: it allows the person to reestablish control over variables that are controllable and improves her relationship to uncertainty. Increasing tolerance for uncertainty allows the entry into the space where possibilities can be re-cut, where one can think with unfinished entity formation.

Superimposing the subliminal knowledge contained in each of the tendencies leads to a bias-free assessment of how the two forces are working at the market level. The procedure allows the person to think beyond the conventional wisdoms driving the crowd. It leads to new hypothesis, new questions, new information-gathering and new probes, generating a new kind of information concerning factors that could not have been thought of or isolated before and resulting in better decisions.

The fact that a practice developed from the broader reflexivity framework can be systematically taught and learned demonstrates the fact that Soros' operating principle, the belief in fallibility, is much more than the awareness of the impossibility of deductive prediction from a given set of entities that are supposed to last through change. It is also a positive methodology in which the direct access to uncertainty permits the creation of new entities – new questions, new hypothesis – that in turn permit probing the still ongoing events.

Summing up

Soros exploits the gap between on the one hand the new entities that his object creation process generates and with which he reasons and on the other hand the already constellated factors upon which the average market participant bases his decisions. He profits from the fact that the change in content brought about by the market process

“undoes” the conventional units, while the salience of new influences - which eventually leads to trend reversals - is not apparent to the average participant thinking in terms of the old units.

Soros’ reflexive rationality is subjective in the sense that he gauges the market situation as he senses himself. The contents of the experiential process are not separate from but derive from the process that makes them, that is, the manner of process determines the content produced. And yet the “subjectivity” of the process does not mean that it is arbitrary. While economic reality is not a logically patterned system, it does respond to the right questions: it has a responsive objectivity.

Whether or not a hypothesis will prove itself successful depends on something that functions empirically. It depends on how the factors that we’ve pulled out are actually occurring and implicitly functioning within the whole web of interactions that constitute the market system, the intricacy of which can only be captured by a framework in which money is not neutral.

Assuming fixed units at the bottom and a representational notion of rationality, standard theory cannot account for the profit opportunities that Soros finds nor for his manner of doing so. Because its underlying epistemology does not allow for a tracking of the ongoing change in what is possible, according to the standard view Soros’ performance can only be attributed to luck.

The market efficiency literature has interpreted tests showing that single sets of individuated and located referents cannot be used as a basis for systematically beating the market as evidence that markets are random. From the reflexive organic perspective, this evidence merely reflects the fact that no single cut of market reality can be expected to survive the process of events. Market events aren’t determined by factors that are logical units, but they aren’t fully indeterminate either. The order characteristic of organic processes is different from a rigid structure, and yet there is an orderliness in it. With reflexivity, prediction lies elsewhere than usually assumed: There can be a thinking, probing and action that taps into ongoing and always unfinished entity formation.

The organic object-creation process has implications that go far beyond finance. It can provide an inner sense of rightness that differs from atomic self-interest. This organic valuing takes into account many implicit aspects that cannot be found in any external value system. Because it moves beyond already given forms and alternatives in a coherent way, it has an import for social change processes.

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