Heideggerian Economics

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Introduction

Lately I've had the poor judgment to start reading Heidegger's *Being and Time*. I've been putting it off for years now, largely because it has no connection with the kind of philosophy I'm interested in. Yet, among my philosophical acquaintances there is a clear line between those who have read Heidegger and those who haven't — working through this book really does seem to let people reach a whole new level of abstraction.

To my great surprise, in *Being and Time* (1927: 413), Heidegger remarks:

> [E]ven that which is ready-to-hand can be made a theme for scientific investigation and determination... The context of equipment that is ready-to-hand in an everyday manner, its historical emergence and utilization, and its factical role in Dasein — all these are objects for the science of economics. The ready-to-hand can become the 'Object' of science without having to lose its character as equipment. A modification of our understanding of Being does not seem to be necessarily constitutive for the genesis of the theoretical attitude 'towards Things'.

Curiously, no other sources I've found mention this excerpt. More well-known is a passage from "What are Poets for?" in which Heidegger denounces marketization (1946: 114-5):

> In place of all the world-content of things that was formerly perceived and used to grant freely of itself, the object-character of technological dominion spreads itself over the earth ever more quickly, ruthlessly, and completely. Not only does it establish all things as producible in the process of production; it also delivers the products of production by means of the market. In self-assertive production, the humanness of man and the thingness of things dissolve into the calculated market value of a market which not only spans the whole earth as a world market, but also, as the will to will, trades in the nature of Being and thus subjects all beings to the trade of a calculation that dominates most tenaciously in those areas where there is no need of numbers.

Thus it's very easy to appeal to Heidegger's authority to support various Leftist clichés about capitalism. It's far harder to bring Heidegger's thought to bear on actual economic modelling—its 'worldly philosophy'. In this paper I'll survey several of the less hand-wavey attempts in this direction. My main question is whether a Heideggerian economics is possible at all, and if so, whether there is a specific subfield of economics to which Heideggerian philosophy especially lends itself. My overview of each specific thinker sticks closely to the source material, as I'm hardly fluent enough in Heideggerese to give a synoptic overview or clever reinterpretation. I don't expect to ever develop a systematic interpretation of my own, but I hope this paper might prove inspiring to some economist with philosophical tastes far different from my own.

1 Schalow on 'The Question of Economics'

Schalow's approach is quite refreshing because he is both an orthodox Heideggerian and takes the viewpoint of mainstream economics, as opposed to Heideggerian Marxism such as Marcuse's *One-Dimensional Man*. Schalow's question is at once simpler and deeper: whether Heidegger's thought leaves any room for economics. Here, 'economics' is minimally defined as theorizing the production and distribution of goods to meet human needs. (So in theory, then, this applies to any sort of economics, classical or modern.) The most obvious answer would seem to be 'No' — he notes: "It is clear that Heidegger refrains from 'theorizing' of any kind, which for him constitutes a form of metaphysical rationality" (p. 249).

Thus, Schalow takes a more abstract route, viewing economics simply as "an inescapable concern of human being (*Dasein*) who is temporally and spatially situated within the world" (p. 250). Schalow advocates a form of 'chrono-economics', where 'scarcity' is framed through time as numeraire. In a sense, this operates between 'economic theory' as a mathematical science versus as a "humanistic recipe for achieving social justice" (p. 251); instead, "economic concerns are an extension of human finitude" (p. 250). Schalow makes various pedantic points about etymology which I'll spare the reader, except for this one: "the term 'logos' derives its meaning from the horticultural activity of 'collecting' and 'dispersing' seeds" (p. 252).

It's natural to interpret *Being and Time* as "lay[ing] out the pre-theoretical understanding of the everyday work-world in which the self produces goods and satisfies its instrumental needs" (p. 253). Similarly, "work is the self's way of 'skillful coping' in its everyday dealings with the world" (p. 254). Hence Heidegger emphasizes production — which he will later associate with *technē* — over exchange, which he associates with the 'they-self' (p. 254). Yet, Schalow points out, both production and exchange can be construed as a form of 'care'. Care, in turn, is configured by temporality, which forces us to prioritize some things over others (p. 256).

"The paradox of time...is the fact that it is its transitoriness which imparts the pregnancy of meaning on what we do" (p. 257). Therefore, "time constitutes the 'economy of all economies'," in that "temporality supplies the limit of all limits in which any provision or strategy of allocation can occur" (ibid.). We can go on to say that "time economizes all the economies, in defining the horizon of finitude as the key for any plan of allocation" (p. 258).

In his later thought, Heidegger took on a more historical view, arguing that the structure of Being was experienced differently in different epochs. In our own time, the strongest influence on our notion of Being is technology. Schalow gives an interesting summary (p. 261):

> The advance of technology...occurs only through a proportional 'decline' in which the manifestness of being becomes secondary to the beings that 'presence' in terms of their instrumental uses.

In an age where the economy is so large as to be inconceivable except through mathematical models, one can say that "the modern age of technology dawns with the reduction of philosophical questions to economic ones" (p. 260). Thus, Heidegger is more inclined to view economics as instrumental (*technē*) rather than as "the self-originative form of disclosure found in art (*poiēsis*)." Yet, rather than merely a quantitative "artifice of instrumentality," it is also possible to interpret economics in terms of *poiēsis*, as "a vehicle by which human beings disclose their immersion in the material contingencies of existence" (p. 262). Economics thus becomes "a dynamic event by which human culture adjusts to 'manage' its natural limitations" (ibid.). Framing economics in terms of temporality (as 'chrono-economics') allows it to remain open to Being, and thereby "to connect philosophy with economics without effacing the boundary between them" (p. 263).

Schalow criticizes Heidegger's notion of 'care' in that it doesn't seem to include satisfying basic human needs: "To the extent that Heidegger addresses economic need, he does so by viewing it negatively as a preoccupation of the they-self" (p. 263). Yet, in a later essay Heidegger overcomes to some extent this economic naïveté (p. 264):

> In one of his most pivotal essays, "On the Essence of Truth," he argues that need is never simply a brute present-at-hand fact (like an animal's survival) whose satisfaction is immediately given or not given. Rather, need is always contextualized in terms of the open expanse of possibilities (that is to say, freedom), which facilitates the diversity of our responses to certain circumstances. [...] Heidegger maintains that the experience of deficiency or lack, as in 'not' having possessions, can actually be 'positive'. Indeed, the 'not' serves as a double gesture to point back toward the un-thinglike impetus we have—the freedom of transcendence—to stand forth within the open expanse of being.

There is at least one book on Heidegger and development economics, which I had thought was an odd combination, but with this in mind I suppose it makes sense, in a very abstract way. Schalow puts it more eloquently: "economics challenges us to develop a discourse which would enable us to articulate the contingencies of material existence, the circumstances of the 'flesh', on a philosophical plane" (p. 267). In North America, however, we have a cultural tendency to disdain talking about money, much less theorize about it — though, Schalow waggishly comments, academics tend to have very different attitudes in practice (p. 266). Schalow therefore closes with some very interesting reflections on money (p. 265):

> On the one hand, Heidegger denigrates money as the material equivalent of the 'they' and of its tendency to 'level everything down' to the lowest common denominator, as the reduction of any measure of proportionality to a subjective value. On the other hand, money appears as a universal language that traverses all cultures and designates one way in which we experience the constraints of our facticity. [...] As Miguel de Bestegui states: "Ultimately, then, it would be a matter of wondering whether thinking must not be wrested from propriety altogether, whether dwelling has not entered a mode that is irreducibly transnational and translinguistic, always mediated by the exchangeability and fluidity of an absolute common value (money), thus forcing thinking into a different economy."

Schalow further draws from Levinas, who points out that money can play a normative role in reparations: "money can be a way to equalize an inequitable situation, a remedy of justice or form of redress...in lieu of physical violence" (p. 266). In Levinas' own words: "If the radical difference between men...was not surmounted by the quantitative equality of economy measurable by money, human violence could be repaired only through vengeance or pardon" (p. 266). It's a view not heard very often, and worth thinking about. Levinas' point of view also bears upon more macroeconomic issues, ranging from welfare policy to conditional cash transfers in development economics.

Schalow's approach is interesting in that it frames Heidegger's philosophy as a kind of meta-economics. He gives a thought-provoking treatment of the human side of economics, but the difficult part is how one might integrate 'chrono-economics' into economic formalism. In most models, after all, time merely takes the form of an index, $t = 1, 2, ...$ — rather than the profound imbrication presupposed by such concepts as being-toward-death. If we manage to find such a formalism, Schalow's treatment will be indispensable.

2 Shionoya on Heidegger & Schumpeter

Yuichi Shionoya's approach is a quirky heuristic exercise of equating Heidegger with Joseph Schumpeter to see what new insights this brings forth. Schumpeter was an Austrian-born economist most well-known for coining the terms 'creative destruction' and 'methodological individualism'. He took a historical approach to economics, as opposed to static modelling (at which, however, he could hold his own), and wrote a truly remarkable book entitled *Capitalism, Socialism and Democracy* which brings into question economists' typical antipathy toward monopoly, and argues that capitalism's tendency toward corporatism makes its shift to socialism inevitable. The book brims with nuance and, I would even say, wisdom, but tends to be unjustly glossed over by the term 'creative destruction' to describe entrepreneurship.

Shionoya's reading of Heidegger is fairly schematic, focusing on the opposition of 'thrownness' vs. 'projection' — but as with any model, it is just this simplicity that lets us extend his argument to a more abstract level. He defines the two as follows (pp. 191-2):

> While Dasein is constrained by a number of factors occurring in the past and is obliged to stay under restrictions characterized as 'thrownness' (*Geworfenheit*), he can still open up a new vista of the future and create an active relationship to the world by the 'projection' (*Entwurf*) of his own possibility.

The former representing the past, the latter the future, they are clearly complementary, and help to "synthesiz[e] the [role of] temporality in the understanding of Being" (p. 192). Oddly, Shionoya tends to interpret these *epistemologically*, with thrownness as "'prestructuring' the framework of knowledge" and projecting as a "'thematizing' of historical knowledge" (ibid.). However, this can be avoided by going a further step: reading 'thrownness' in terms of *exogeneity* and 'projection' as *endogeneity*. In economic models these are very simple: an exogenous variable is simply 'given' (e.g. an agent's endowment), whereas an endogenous process must be determined within the confines of the model. In macroeconomics this is closely related to time: the difference between short-term and long-term is expressed by treating the capital stock K as an exogenous constant versus as an endogenous variable.

'Recursive macroeconomics' arose from the insight that for an economic agent the only two time periods that matter are the present (wherein the past is encapsulated as 'endowments') and the future; since this holds in any given time period, an agent's behavior over time can be derived by iterating over and over this 2-period model, creating a recursive structure. As Heidegger notes: "any *Dasein* has, as *Dasein*, already projected itself; and as long as it is, it is projecting" (in ibid., 193). In a similar vein, Shionoya claims that "Heidegger's *Dasein* can be explained in the context of decision making under uncertainty." (p. 192). Just as Heidegger's *being-in-the-world* moves away from a unitary ego to focus on Dasein's imbrication in a relational world, so for Shionoya the dialectic of thrownness and projection helps us to move from a probabilistic approach to uncertainty (i.e. giving agents an exogenous probability) to a more holistic view in which "the interaction of individual decisions will create the future" (192). In such a model, "Decision and action of human beings would construct knowledge, rather than...prudentially adapt[ing] to exogenously given knowledge" (pp. 192-3).

It is very tempting to say that *homo economicus* is Dasein. After all, in Heidegger's opposition between 'present-at-hand' and 'ready-to-hand', the former can simply be encapsulated in an exogenous constant (i.e. number), while 'ready-to-hand' simply means that an object is taken as an argument in the agent's utility function. (I'm personally inclined to instead say that *homo economicus* is a Turing machine, which raises the interesting question of how these two accounts might differ.) Shionoya, however, strongly opposes such a view, which he supports through his emphasis on temporal models. He again quotes Heidegger (p. 193):

> Projecting has nothing to do with comporting oneself towards a plan that has been thought out, and in accordance with which Dasein arranges its Being. [...] Projection, in throwing, throws before itself the possibility as possibility, and lets it be as such.

Shionoya reads this as a criticism of the rational expectations school of economics (which includes our 'recursive' model sketched above), in that Dasein "does not take into account the future utility effect of action" (p. 193). Instead (rather abstractly), "the motive of action" *itself* serves as "Dasein's resolution to anticipate its possibility" (ibid.), while of course including past experience under the mantle of 'thrownness'. Shionoya's argument suffers here somewhat, as he tends to caricature orthodox economics in terms of static models alone. This emphasis on dynamism brings the parallel of Schumpeter into play (p. 194):

> whereas in the static economic world all economic agents are 'thrown' into the circular flow, Schumpeter defined an innovative entrepreneur as one who destroys the customary path of the economy by 'projecting' a new lifestyle of economy on the basis of strong will and penetrating foresight, not calculating prudence.
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> [...] In terms of temporality, agents stand on the intersection of 'projection' of Being into the future and 'thrownness' of Being by the past in Heidegger's usage, or of 'innovation' and 'routine' in Schumpeter's usage.

Shionoya also makes the curious analogy of a static economy with 'inauthenticity'. Contenting oneself with thrownness means failing to face the 'anxiety' of the future, and is thus inauthentic; similarly, if agents content themselves with the "circular flow" of the capitalist process, their failure to "challenge the uncertain world of the future" (via creative destruction) will gradually eliminate all dynamism from the economy (p. 194).

Shionoya points out Heidegger's usage of the term "jump or leap" (*Sprung*) as a form of innovation, possibly prefiguring his more well-known 'turn' (*Kehre*) from his early to late work (p. 195). Such a 'turn' serves the same role as creative innovation did for Schumpeter: as an *event* (p. 197). Heidegger's turn toward poetics also adds more dynamism to his old concepts, namely: "the relationship between the conferring of Being by 'projection' and the emergence of the truth of Being from the state of 'thrownness'" (p. 195). Shionoya concludes that this dynamic fusion of Schumpeter and Heidegger allows a further reconciliation of these two concepts through "*Dasein as the thrown projector*" (p. 198).

Summing up, the flaws of Shionoya's approach are fairly obvious, but I think that recasting it in terms of exogeneity vs. endogeneity helps both to deepen his argument and highlight its flaws. Many of Shionoya's theoretical inclinations arise from caricatures of the orthodox view (e.g. a psychologistic interpretation of *homo economicus*), but his account of temporal models may provide a first step toward a sophisticated Heideggerian reading of the rational expectations paradigm in macroeconomics.

3 Sylvain Raynes on Dealing with Heidegger

In writing philosophy of economics, the happiest thing that happens to me is when, every so often, I come across some marvellously eccentric fellow who over the years has developed a systematic philosophy of their profession. Sylvain Raynes is a quant with a Ph.D in aerospace engineering from Princeton, whose hobbies include reading Heidegger's *Gesamtausgabe* in the original German. Yeah. Safe to say, he's smarter than you and I will ever be. His specialty is 'structured finance' which deals with transferring risk using complex methods such as securitization, tranching, and credit ratings.

Even to someone like me, however, Raynes' writings on Heidegger are truly bizarre. I'm not going to make fun of the guy—it's just that his writing grates against *all* my philosophical sensibilities. Raynes' approach centers around the notion of deals as "the *unit* of finance" (p. 278); for Raynes, "The theory of finance is deal theory and nothing else" (ibid.). This makes sense on its own, but combined with lofty Heideggerian rhetoric it's a bit too much for me to handle. Think of various Heideggerisms (e.g. 'the history of Western metaphysics as the forgetting of Being') but replace 'Being' with 'the Deal' and you'll get what I mean.

Raynes begins from the observation that a bond or loan is not a 'thing' proper, but relational. They are not 'given' to us as such, but we must deal with them in-the-world. From here, Raynes makes a fascinating observation: a bond is a strictly logical object, "completely circumscribed by the prospectus" (p. 276). It is therefore *ontological* in nature (p. 277):

> As a result, bonds can be described as pure concepts of which absolute knowledge is feasible, i.e., logic alone exhausts the ontology of a bond. Since ontological constructs are not bound by linear time, this also means that bonds are a piece of *eternity*. Consequently, uncertainty cannot exist with respect to liabilities. If transaction rules are followed properly, bondholders can have perfect knowledge of what will happen to whatever cash flows through their deal.

Assets, however, are *ontic*: they describe objects in the real world. Raynes put this more rigorously: "unlike liabilities, assets are not given a priori as pure concepts, but instead consist of a complex web of hidden and in many cases unknowable relationships" (277). The ontology of a bond is confined within its prospectus, and so is comparably trivial. Hence, "the basic problem of finance is the ontological characterization of assets, not liabilities" (p. 277). This conflict between ontic and ontological opens up the *representational* aspect of structured finance, as assets are "*transform[ed]* into ontological objects" (p. 277) through a negative (i.e. reductive) process of seeking out conservation laws that "stand outside linear time." In a nonlinear world, this is what makes finance so difficult.

Raynes posits that the 'world' in which financial objects dwell is 'freedom space', i.e. "the space of *degrees of freedom* engineers and statisticians talk about all day long" (p. 278). A determination in 'freedom space' is a statistical 'moment' (p. 280). At a very high level of abstraction, Raynes frames analysis as a process of decreasing degrees of freedom, and synthesis as increasing freedom. He emphasizes that these "do not reference a linear temporal sequence," and so "can be traversed in any manner," making this procedure "intrinsically nonlinear" (p. 279).

Concretizing the raw deal of finance into a logical model means "extract[ing] out of the immediacy of the now...a set of metastructures corresponding to concepts like transition matrices, cash flow transfer functions, copulas, correlation structures, and the like" (p. 280). Raynes associates this with a Heideggerian process of *de-struktion* as degrees of freedom are reduced to zero; in turn, these zero-freedom deterministic structures may be linked in a process of *con-struktion*, thereby sealing the deal (p. 280). In other words, through a process of ontological bracketing we extract 'blocks' from the ontic world: world-creation (modelling) is in fact "a *reduction*, a limiting of what is first possible from the undifferentiated unity primarily given to us" (p. 281). The process of assembling these blocks into a model is "the stage where assets and liabilities merge," and the analyst is "finally in a position to explore the...possibility range within which valuation can finally be carried out" (p. 283).

The ontic is marked by nonlinearity. "The world as given to our understanding is already nonlinear. Therefore, it is linearity, rather than nonlinearity, that requires an explanation" (p. 292). For an ontological approach to finance, we must thus rely on 'original time', which in finance takes the form of the yield equation, where 'yield' is the rate of return on a security — in essence, "yield is the *meaning* of time" (p. 293). He continues (p. 293): "What is finance? Quite simply, it is the algebra of original time." In practice this algebra takes the form of stochastic calculus, on which Raynes comments (pp. 286 & 287):

> the canonical stochastic differential dz is not like the linear time differential dt or some other infinitesimal quantity that might be taken from ordinary calculus. It cannot be analyzed as a simple limit arising from a continuous function but must be dealt with on its own terms. [...]
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> a [stochastic] statement...can only hold in a factical sense within an instant of linear time with zero measure, after which the inherent self-reflexivity, or feedback, present in the system spontaneously modifies the probability space associated with further outcomes.

The role of financial theory is primarily to establish conditions under which we can use the 'equals' sign to value a time-varying asset. This done, a financial "formula says that yield is what makes an amount *now* equal to itself in the *future*" (p. 293). Raynes adds aphoristically (p. 293): "yield is intrinsically nonlinear in import because nonlinearity is what makes self-identity possible in the first place." A financial model is therefore "a negation of linear time ultimately leading to the construction of a manifold unity as original time" (p. 293).

In the midst of his essay, Raynes makes an intriguing comment: "The purpose of academic life is not to learn laundry lists by heart but, on the contrary, to be able to reason from the ground up" (p. 290). In Raynes' view, only from such a ground up approach can "finance understand itself out of itself" (p. 457), thereby attaining the rank of science rather than a branch of applied economics. While at times, Raynes' reading of Heidegger leaves a great deal to be desired, his thought is remarkably rich and original—well worth comparing to Élie Ayache's ideas. If I have to choose between this and some philosophy grad student who doesn't know the difference between a stock and a bond, you can deal me in.

4 Fytros on Heidegger and Fundamental Trading

Fytros aims to develop a Heideggerian interpretation of finance, informed by behavioural finance (with its focus on eliminating biases) and the sociology of finance (with its focus on assemblages rather than actors). He takes as his main target the Efficient Markets Hypothesis (EMH), which he feels can no longer be postulated "in the face of well-documented...systematic mean reversion, long-run trends, herding amongst security analysts, etc." (p. 2). In fact, he treats the EMH as embodying the entirety of orthodox finance. Conversely, part of the appeal of the sociology of finance, he claims, is that: "there are no two primary fixed poles of independent agents (a subject and an object) but an endpoint of agencements (MacKenzie, 2009: 19-25), that is, socio-technical arrangements that co-produce stability."

4.1 Subject/Object

Fytros opens his paper with a quasi-historical account of the 'subject' of finance, which I find deeply flawed. In his account, "With modern financial economics, the human subject was the one solid point of reference by which the mysteries of the various financial entities (equities, bonds, derivatives, etc.) were uncovered" (p. 5). The 'subject' here is portrayed as a user of "sociotechnical prosthetic machines" by which they may "crack every (hidden) code of the financial entities" (ibid.). Behavioural economics goes beyond this by bringing this subject itself into question, so that "humans have been classified as another source of risk" (p. 5).

He puts this another way: the subject of the EMH is seen as "living and breathing outside the markets in a sphere permeated by an ahistorical, transcendental rationality" (p. 14). On the other hand, the subject of behavioral finance is "so tightly entangled and helplessly thrown within the markets that consequently falls victim of its noises and contingent drifts" (p. 14). Both of these paradigms, says Fytros: "in their ontology, treat all financial propositions as epistemic and hence as subject to...epistemological 'stress tests'" according to the "tribunal of reason" (p. 4). He thus criticizes behavioural finance as diverging from the EMH in degree but not in kind: it "simply raises the stakes by imposing extra required filtrations" so as to eliminate biases and aim toward a state of impersonal observation (pp. 4-5).

For Fytros, it is only the sociology of finance that truly succeeds in going beyond the subject/object dyad, through its "unique concern with the materiality of markets: their physicality, corporeality, technicality" (MacKenzie, in ibid., p. 3). The 'actors' of markets are not merely human beings, but rather assemblages of embodied human beings and "*things*" (his italics) such as computers and algorithms. Fytros brings in Heidegger as a way to reinforce this move: as opposed to individual consciousness, Heidegger uses the term 'being-in-the-world" to emphasize "the worldly aspect of the financial actor" (p. 14)—that is, its thrownness "within an historical, horizonal ring of contextual meanings."

However, I think Fytros is cheating here, and that from a more orthodox perspective one can just as well say the opposite. If he's going to make such a drastic move as treating the EMH as embodying *all* of orthodox finance, his account of the 'subject' of finance should at least be detectable within the theory itself. Yet, try as one might, one would be hard-pressed to find anything remotely resembling a 'subject' within financial portfolio theory as a whole, let alone the routinely-lambasted EMH. Conversely, behavioural finance aims to progressively peel back layers of biases in order to recoup an 'objective' Cartesian subject — in an almost pathological 'search for origins'. Here, behavioural finance is an *insertion* of an (asymptotic) subject into financial theory, and therefore a philosophical step *backward*. Hence we need not resort to sociology in order to find a place for Dasein in finance. One *can* use sociology if one wants to, but this tells us more about society than about finance proper.

4.2 'Fundamental' Ontology

A basic distinction in finance is technical trading versus fundamental trading. Technical trading is the use of mathematical methods to find patterns in price data. As Ayache (2015) shows quite rigorously, quants need not care about the underlying states of the world on which these prices are based — all that matters is the statistical data. There is no 'worldhood' as such in technical trading. Fundamental trading is quite different, focusing on 'fundamentals' such as accounting statements, news, and other sources of information directly linked to the world. Fytros is definitively on the 'fundamentals' side, which lends itself much more easily to a Heideggerian reading. He thinks very little of quant methods, putting them all in a uniform box of "postmodern technofinance" (p. 5), exemplified by statistical arbitrage. His own account of this division is as follows (p. 10):

> [T]he quant type investor is solicited to control and secure a risk-return trade off in order to optimize it (what for Heidegger is made possible by a modern constellation of intelligibility that gets culminated in a technological one), whereas a value investor is solicited to bring forth and nurture the intrinsic potentialities of an underlying entity (in a poetic-like way).

From the point of view of fundamental trading, "Markets are attuned, from top to bottom by what it is to be and live in a finite human world. Being-in-the-markets is possible only because we are already being-in-the-world" (p. 14). Fytros thus frames fundamental trading in terms of traders' 'being-in-the-world', as embodied in their diverse investment styles. The market serves as a "clearing that organizes and preserves dissonance" (p. 6), through the symbiotic interactions of "local investment communities." Trading thus becomes a form of self-discovery — of "situating [one]self...within the financial universe" so as to best embody the style of one's "investment community" (p. 6). The trader "comes to see the entire world through his portfolio" — which, Fytros hopes to argue, should be judged in neither subjective nor objective terms, but rather as "a Heideggerian dwelling amidst financial things" (p. 3), not subject to positivist regimes of truth.

William Feather famously said: "One of the funny things about the stock market is that every time one person buys, another sells, and both think they are astute." According to the strict EMH, all traders share all available information, and so it becomes paradoxical that both traders think that the price is wrong, and moreover, wrong in different directions (p. 6). The tedious answer is that one trader is right and the other is wrong. A more interesting reading via behavioural finance is that *both* traders are wrong—biased in different ways. In an interesting twist, Fytros suggests that from a Heideggerian perspective, both traders are *right* — a kind of 'financial trivialism'.

They are both right because financial "reason itself is not universal but locally emergent on the basis of a prior inexplicit/unthematic understanding of a way the world opens up" (p. 7). That is to say, a decision to buy or sell a given asset takes on different meanings according to the investment style behind it. Further, even gaining or losing money may take on different meanings depending on the investment style and its implicit time horizon. To illustrate, Taleb fantasizes somewhere about a 'black swan' hedge fund that loses money for years before a black swan event finally happens, bringing huge profits. In Fytros's Heideggerian view, what matters is to "bring out at its best the style of [one's] investing understanding...regardless of the payoff" (p. 7).

Fytros makes an interesting argument that a multiplicity of investment styles is necessary for the existence of financial markets. He frames this in a very postmodern way: that "the density of the other investment communities/styles result in a dense market reality — of how, that is, the 'other' is not a waste, but instead what enables market reality." (p. 15). He notes that a "systemically unstable financial reality" occurs when "a particular investment style dominates so forcefully that all otherness, transgression or dissonance is lost into a series of uniform decisions and orders" (p. 11). A bubble occurs if everyone is buying, a crash occurs if everyone is selling — in both cases, such uniformity presupposes that traders are all acting on the same information.

Fytros extends this argument in an even more Heideggerian direction by noting that "the technological, quantitative" investment style encourages assimilation into a uniform methodology — which, as Heidegger warned, is made possible precisely by "the essence of technology" (p. 11). While this latter argument fits nicely into a standard reading of Heidegger, it only works by lumping all quantitative methods into the same category. Leaving aside the incredible variety of algorithmic methods, even the same algorithm can operate on very different information sets, leading to vastly different trading strategies.

Fytros points out a further problem with his argument: namely, that the notion of a 'style' conflicts with the sociological view, which instead emphasizes "hybrid differentiations" (p. 10, fn. 16). He doesn't actually argue for his position, but only says that "Heidegger...needs to give an account of the stabilization of our practices (i.e. styles) without metaphysical, foundational/fixed points" (ibid.). Still, one possible approach might be to interpret 'trading styles' in a game theoretic light, reminiscent of strategies in repeated games.

4.3 The Fourfold

The most original part of Fytros' essay is to appeal to Heidegger's notion of 'the fourfold' (earth, sky, mortals, divinities) as a tool to understand finance. This is part of Heidegger's later thought, where he moved on from the ideas put forth in *Being and Time* in favor of far more poetic language. The elements of the fourfold are defined as follows (p. 11):

> [T]he internal strife between 'earth' (i.e., "that which resists and eludes all attempts to comprehend it...thus shatters every attempt to penetrate it") and 'sky' (the disclosed or manifest stable possibilities for action), represents that dimension of intelligibility we experience both as it calls for and informs ("sky"), and as it overflows and escapes our attempts top in it down ("earth"). [...] Heidegger introduces two more elements apart from earth and sky: mortals and divinities — i.e. the temporality and vulnerability of our identities and constructions (mortals), and the gratefulness and reverential mood that descends to us for receiving all that is brought out by the particular situation we are thrown into (divinities).

As we've seen, Fytros' worry is that the 'technologization' of quant methods will bring about a "monopoly on the real" (p. 11), and so "crowd out all alternative understandings of being" — that is, of financial markets. For Fytros, the purpose of building a financial portfolio is 'world-disclosure', and he feels that technological 'framing' (*Gestell*) carries with it the danger of a 'forgetting of Being' — of our capacity for world-disclosure or "marginal practices" (p. 11). The 'earth' and 'sky' are concerned precisely with such 'enframing'. As for the latter two elements, Fytros asks whether "finance *within* itself" can preserve such marginal understandings, which help us to notice our 'mortality'; he frames 'divinities' as the fundamental givenness of worldhood that "linger[s] in the background of even our most advanced technofinance constructions" (p. 11).

In Heidegger's late thought, the fourfold is used to elaborate upon the concepts of 'thing' and 'world'. His problem is that "A thing obviously does not create a world, just as a world does not create a thing" (p. 16). (*Obviously.*) Hence the fourfold is brought in to underscore the interconnections between thing and world: "The fouring, the unity of the four, presences [v.]...as the worlding of world. The mirror-play of world is the round dance of appropriating" (Heidegger, in ibid., p. 15). In Heidegger's pessimistic speculations about the essence of technology, he asks himself whether it is possible for technology to "gather the fourfold" — in which process the technological devices involved would thereby “become *things*, that is, local gatherings that set up local worlds, allowing for a multiplicity of different (i.e. not mere technological) ways of being to emerge” (p. 15). In response to this, Fytros offers a fascinating suggestion (p. 16):

> [T]he financial universe is exactly that space where excessive technological gadgetry constantly multiplies, and where Heidegger’s fourfold can be stress-tested. [A] Heideggerian point of view...asks: can this financial universe be a world? Can this frantic, dispersive, mobile and fluid computational business gather the fourfold, and thus meet its limit (i.e. delimit itself and thus open the possibility of gathering itself) not by the ways of other non-computational social spaces, but precisely by *itself*?

Fytros gives a lengthy example to illustrate how this is possible, but it is so fucking stupid that I won’t even get into it. So instead, we’ll just leave the latter as an open question, a thought-provoking conjecture.

4.4 Summary

We saw that Fytros takes for granted a supposed rational ‘subject’ of financial theory, which leads him to assume a linear historical development from ‘EMH’ to behavioural finance to sociology of finance. (On a technical level, I think Roll’s critique can be read as showing the lack of a ‘subject’ of finance.) It’s also a transparently cheap move to use the EMH as a metonym for all of finance. He does a nice job of framing fundamental trading through Heidegger’s lexicon, through an emphasis on ‘trading styles’ as a kind of autopoiesis. He aptly points out that multiplicity is crucial for markets to function, but this is then cheapened by a straw-man, overly uniform caricature of technical trading. Last, Fytros makes the intriguing suggestion that a Heideggerian theory of finance must turn to the later Heidegger, particularly the fourfold, but this requires a far better elaboration than the one that Fytros gives.

Conclusion

One thing that has become clear to me is that a Heideggerian interpretation of economics would have to focus on a branch in which time enters explicitly. That means game theory is out, as time in game theory takes the form of changes in the information set. In Schalow, we saw a tendency towards welfare economics; we read Shionoya against-the-grain as approaching a Heideggerian reading of ‘rational expectations’ macroeconomics; Raynes uses Heidegger to make sense of the midpoint between technical and fundamental approaches in finance; and Fytros writes more from a day trader’s perspective.

All of these approaches involve some appeal to microfoundations, which is in line with interpreting ‘homo economicus’ as Dasein. Ever since the Lucas critique, microfounded models have become standard in economics, though still lack any firm mathematical (let alone philosophical) justification. A Heideggerian interpretation of the microfoundations debate, if done well, could prove exciting and controversial.

Another insight I've gleaned from this is that thinking about change is hard. It's paradoxical, once you think about it, to try to represent change using a static mathematical notation, or even language itself. The concept of change is itself static. Even Deleuze's 'becoming-X' is just a tendency, modelled after a slope in calculus. It's likely, then, that concepts from stochastic calculus and intertemporal models likely contain a lot of philosophical nuance that is easy to overlook in typical philosophical discourse. This, I suppose, is what might make a Heideggerian economics worthwhile.

The main aim of this paper was to find a branch of economics in which Heidegger's philosophy and economic formalism most do justice to one another. While I didn't expect this at all during the outset, I now think the most promising route to a 'Heideggerian economics' would be recursive macroeconomics — in which time is not merely indexical ($t = 1, 2, ...$), but instead fundamentally implicated in an agent's mode of being: a kind of fractal Dasein.

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