

# Thinking According to Finance: A Critique of Financial Temporality

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## **Statement of originality**

This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

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I have used portions from this article throughout Chapter Four of this thesis. I was the sole author of this article.

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## Abstract

There are assumptions that undergird the discipline and practice of political economy. This project addresses this by focusing on one contracted point of tension within political economy that is of great concern for the present age, post-GFC. Namely, *how are the presuppositions concerning the nature of temporality within the field of political economy determinate of deficient accounts of speculation, value, and even financialization more broadly?* Therefore, we argue that the temporal assumptions of political economy are abstractions that demand a demystifying critique. In particular, we will contest linear notions of time that presume 1) a sequence of moments (ex. past, present, future) and 2) the idea that the future – *as such* – exists (as presumed by most accounts of speculation).

The reason these accounts must be demystified is that they are beholden to a serial abstract repetition that is conditioned by a certain form of knowledge-production; what philosopher Gilles Deleuze calls *The Dogmatic and Moral Image of Thought*. This Image of Thought forecloses the very possibility of the future – in the first instance – as it delimits difference, by subsuming process and variation to pre-constituted identity. What results from this is that The Image of Thought produces a manner of knowledge-production where such pre-constituted identities become the uncontested (i.e. dogmatic) measure by which all thought ought to proceed (i.e. the moral imperative). This is why The Image of Thought is *dogmatic* and *moral*.

In political economic thought pertaining to finance, The Dogmatic and Moral Image of Thought operates by assuming that the single unit – or the one, the individual, the entity, or the term – is the fundamental point of reality: an individual unit of time, a single unit of money, etc. However, once this single unit is revealed to be process – even processes within processes – the integrity of its determined structure as a single entity is problematized. This does not mean that there is no sense in which one can speak of units. We can, and do, and, in fact, must when we are engaging political economic empirics. Rather, our claim is that what is required as a necessary supplement to any empirics is a robust investigation into *the constitution of the unit*, by understanding *the conditions that genetically procure its emergence*, in order to better grasp *the specific material processes that constitute the unit as such*. This will enable thought to be freed from the rigid path-dependencies that form from hidden biases beholden to tendencies of knowledge-production that are structured by The Dogmatic and Moral Image, and will better equip

political economic thought in its efforts to critically address the role and function of finance in society, particularly pertaining to power asymmetries and the social production of meaning and value.

Methodologically, we appeal to the speculative theories of Henri Bergson and Gilles Deleuze to provide both a critique of temporality and also a prescriptive theoretical apparatus for constructive engagement with financial temporality. This takes place, *first*, through an elaboration of a novel conception of temporality in Bergson's conception of *duration* and in Deleuze's *Three Syntheses of Time*. Once elaborated, we, *second*, use our theoretical apparatus as a heuristic to critically engage three prominent political economic persuasions: the Marxian, Keynesian, and Critical Finance traditions. Each of these three open an aperture on finance that is valuable but limited. These limitations reveal how and in what ways each are formalist projects partially trapped within their own schematic limitations because of the ways they think about time and finance in *extensional terms* (i.e. according to a mathematical logic of extension as opposed to intension); which in turn impacts how they understand the logic(s) of finance. Therefore, in order to avoid reproducing these schematic limitations, we, *third*, close our project by speculatively proposing a novel conception of financial temporality: what we call the 'techno-temporal logic of finance'. This concept allows us to sidestep the limitations revealed in the Marxian, Keynesian, and Critical Finance approaches, while also constructively indicating novel ways we might be able to *think according to finance*.

The difference between thinking *about* finance and thinking *according to* finance is that the latter centers a manner of thought that does not prioritize a philosophical decision which sets the prior conditions of knowledge in relation to the object (i.e. finance), in the first instance, but *lets finance think*. The implications of this are vast and can only be hinted at here. But once we begin to think *according to* finance – and not merely *about* finance – we create spaces where finance can be taken up for investigation in novel ways without 1) falling into a hasty moral critique that can only ever view finance from a position that is deemed to be morally superior in lieu of having putative knowledge of what is right or necessary or proper or 2) a naive valorization of market activities that ignorantly presupposes that finance is merely a benign mathematical operation in the service of human hands.

Unless we learn to think according to finance, all our critiques will have some use but will always be limited by the activity of selection and closure that characterizes formalism and that remains trapped within The Dogmatic and Moral Image of Thought. That said, once we learn to think according to finance, we can't presume exactly what our

programmatic approaches will be. This is because this project is primarily concerned with clearing the ground for future research to be able to see afresh, without the baggage that comes with overdetermined formalist approaches to political economic inquiry. This means there will have to be some measure of experimentation and open-endedness that marks our future interrogations; because to think according to finance is to learn how to avoid merely projecting biases concerning finance and financial logics onto financial mechanisms from a predetermined ideological position.

Thus, towards this goal, in the end, we leave the reader with resources to begin to think according to finance. This does not mean discarding the traditions/persuasions discussed throughout this project, for all have many insights that require further consideration. Rather, this project intends to leave the reader with a framework for questioning the presuppositions of political economic investigation in all its guises. There is no single way to understand the matrix between the political and economic. And this project does not assume that it can approach anything like a final word. Instead, our hope is to provoke thought, and to lay a set of resources at the feet of those more capable within their areas of expertise of taking up this project and working with it in ways that will continue the long tradition of critical political economic engagement.



### 0.0 Time and Political Economy's Priors

#### 0.0.1 *The Problem and the Proposal*

There are assumptions that undergird the discipline and practice of political economy. While it is not possible within the scope of this project to present them in their entirety, nor to address all the implications that result from these assumptions, this project will focus on one contracted point of tension that is of great concern for the present age, post-GFC. Namely, *how are the presuppositions concerning the nature of temporality within the field of political economy determinate of deficient accounts of speculation, value, and even financialization more broadly?*

While this question might seem abstruse at first glance, the argument here will be that this question reveals that the temporal assumptions of political economy are abstractions that demand a demystifying critique. In particular, we will contest linear notions of time that presume 1) a sequence of moments (ex. past, present, future) and 2) the idea that the future – *as such* – exists (as presumed by most accounts of speculation).<sup>1</sup>

The reason these accounts must be demystified is that they are beholden to a serial abstract repetition that is conditioned by a certain form of knowledge production – what philosopher Gilles Deleuze (Deleuze 1994) calls *The Dogmatic and Moral Image of Thought*. This Image of Thought forecloses the very possibility of the future – in the first instance – as it delimits difference by subsuming process and variation to pre-constituted identity. What results from this is that The Image of Thought produces a manner of knowledge production where such pre-constituted identities becomes the uncontested (i.e. dogmatic) measure by which all thought ought to proceed (i.e. the moral imperative). This is why The Image of Thought is *dogmatic* and *moral*.

In its simplest form, in political economic thought pertaining to finance, The Dogmatic and Moral Image of Thought operates by assuming that the single unit – or the one, the individual, the entity, or the term – is the fundamental point of reality: an individual unit of time, a single unit of money, etc (Gabriel 2015: 102ff). This pertains to the Medieval dogma *ens est unum convertuntur*, which carries the meaning that there is a convertibility

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<sup>1</sup> Defining what we mean by both linear conceptions of time and the future existing *as such* will be explored in Part One. Connecting linear conceptions of time and those accounts of speculation that presume the existence of the future *as such* will be addressed in Part Two.

between quality and quantity, and that in order for things to exist they must exist as a single object, or as *entia omnimodo determinata* – a completely determined object. What is most interesting, for us, is that these ideas carry economic connotations of fungibility and determination according to a ‘real cost’. That is, individual things, so constituted, are constructed according to a settlement, or a social balance sheet. They have been deemed to be what they are because they have passed through a social activity of conversion and settlement determining the precise nature of the thing as that thing, and no other.

However, once this single unit is revealed to be process – even processes within processes – the integrity of its determined structure as a single entity is problematized. This does not mean that there is no sense in which one can speak of units. We can, and do, and, in fact, must when we are engaging political economic empirics. Rather, our claim is that what is required as a necessary supplement to any empirics is a robust investigation into the constitution of the unit, by understanding the conditions that genetically procure its emergence, in order to better grasp the specific material processes that constitute the unit as such. This will enable thought to be freed from the rigid path-dependencies that form from hidden biases beholden to tendencies of knowledge production that are structured by The Dogmatic and Moral Image, and will better equip political economic thought in its efforts to critically address the role and function of finance in society, particularly pertaining to power asymmetries and the social production of meaning and value.

### *0.0.2 Our Theoretical Starting Point: Time and Freedom*

Towards that end, this project begins by appealing to the work of Henri Bergson and Gilles Deleuze to provide a different orientation to time *per se*. The value of this appeal is that we will be able to clarify 1) why and how linear, sequential conceptions of time tend towards The Dogmatic and Moral Image of Thought, 2) why The Image of Thought ought to be contested, 3) how we can circumvent this tendency by employing a different conception of temporality, and 4) the stakes concerning how conceptions of time are of utmost importance for both theoretical and empirical investigations into political economic concerns.

Bergson was eminently concerned with human freedom (Mullarkey 1999: 21). Thus, his elaboration of time centers the psychological experience of human meaning through moments. This means that *the meaning of the moment* is not reducible to the mathematical unit of time, but requires that the fullness of psychological experience be explored in its pluridimensionality. When time is reduced to the mathematical unit, all

moments are considered on the same plane, and the fullness of the meaning of the moment is hastily foreclosed in a rush to explain a pure mathematical relation. Freedom is elided because the abstract unit becomes the external measure that determines the time relation, in the first instance, to which all human experience is subjected. What is more, the reduction of time to the mathematical unit does not truly deal with time at all, but instead pertains to space and the activity of social topology; the political purchase of which bespeaks of an activity performed according to habits of social formation that are coordinated by those with the leverage power to dictate the means and execution of social topological construction.<sup>2</sup>

This is because, for Bergson, when we conceive of time linearly, or *as soon as we cognize temporality*, we have actually spatialized time (Bergson 2001). Time *per se* slips from our grasp. Instead, what we cognize is the spatiality of contiguous relations between pre-constituted units that determine the terms of the spatial relation in the first instance. We can think of this in terms of a timeline, where the points on the timeline represent a moment of time measured in a mathematical unit of time. This representation is, for Bergson, a spatial relation between abstractly cognized units in sequence. Thus, linear temporality is only partially the target of a Bergsonian critique. More accurately, it is *sequentiality* and its attendant *spatiality* that characterizes the deficient forms of time that reduce the quality of time to mere mathematical abstraction. It is, therefore, the habit towards spatializing that must be understood and then contested in order to proffer another conception of time, which will then inform the construction of novel forms of social formation that are not always-already ensnared by the logic of this stifling mathematical order.<sup>3</sup> This other conception of time, for Bergson, is *time in itself*.

Time in itself is a disruption of the spatializing tendency. It is the disruption of our conscious habits towards abstraction, of how we habitually think in our everyday conscious experience. This disrupting conception of time is what he calls *duration*, which is *qualitative multiplicity* (Bergson 2001; Sinclair, M. 2019). What he means by this is that:

1. Time (as duration) is qualitatively different from the spatializing tendency of linear conceptions of time.
2. Time is qualitative and not quantitative

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<sup>2</sup> Very simply, social topology describes the spatial structure of a society. For more, see Guy (2018) and Bonnin (2010).

<sup>3</sup> The notion of habit will be explored by examining how Deleuze extends Bergson's investigation into time.

3. Time is not merely a singularity that acts as a disruptive force (like some sort of conscious Being). Rather, this disruptive notion of time is a field of pure multiplicity. Along with Deleuze, we will call it a virtual field of pure difference (Deleuze 1994). Rather than conceive of time as a relation between units in sequence, Bergson prompts us to consider time as duration, which is non-quantifiable in its multiplicity.

Therefore, by working from this conception of time-as-duration, we have the beginnings of an alternate conception of time that enables us to better understand the temporal assumptions that undergird theories on speculation, market transactions, market volatility, risk management, etc; and that also brings to light new ways to critically engage political economic concerns.

For example, our attention will shift from viewing speculation as a mortgage in the present (one point on a timeline) on the future (a subsequent point) (Esposito 2011), to a complex relation between enfolded and enfolding processes of intensive variation (Deleuze 1994; Williams, J. 2016). This shift is one from prioritizing *extension* to *intension*: 1) *extension* pertains to the domain of abstract quantification that is the domain of empirical analysis alone; 2) *intension* is concerned with genetic and transcendental conditions, which requires philosophical investigation to buttress empirical concerns. By prioritizing *intension*, we correct an over-emphasis on the pre-constituted in favor of the structural, the conditional, and the constituent.<sup>4</sup>

How is this so and why does it matter? Because, for Bergson – and as later elaborated by Deleuze’s “Three Syntheses of Time” – it is really the pure past that is preserved through memory (conscious and unconscious) that conditions our present habits. And since the future does not exist except as the perpetual haunting of the disruption that is guaranteed by the qualitative multiplicity of time-as-duration, this means that speculation is not, in fact, a mortgage on the future *per se*, but a way of relating to and orienting to the preserved past that conditions habit. In other words, financial speculation is a way of inscribing, enclosing, and quantifying new fields of symbolic meaning into financial terms as habits that are backed by guarantees (which are themselves inscribed contracts of social meaning) to preserve the potency of the speculative gambit.

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<sup>4</sup> To be clear, we, in no way, intend to claim that empirical analysis is unnecessary. Rather, we assert that empirics is necessary, but only insofar as it is never granted sufficiency. To do so is to be metaphysically ignorant of crucial priors, which in turn produces an epistemological arrogance that stifles fruitful and collegial scientific inquiry.

The issue then arises: *how* is this speculative gambit preserved? There is a bevy of literature in the field of the anthropology and sociology of finance that argues that such is preserved through an act of ‘retroactive performativity’. In particular, the work of Donald MacKenzie, Arjun Appadurai, Edward LiPuma, *et al.* focus on market transactions as performative instantiations (MacKenzie 2006; Lee and Martin 2016). This project will not entirely disagree. However, there is a fundamental absence of a grounding in these accounts. Following IR scholar Sergei Prozorov, we might say that these performative theories (as are all theories rooted in discourse analysis) are essentially nihilistic. This is because in their efforts to circumvent the dogmatism that issues from universalism, they leave us with a (post)modern condition that “makes it difficult, if not outright impossible, to invoke universal values or principles” in any way. While these approaches deftly demonstrate “how the things we have been accustomed to consider universal are in fact products of highly particular historical conjunctures, cultural constellations, social class or economic order,” they lack an *archē* to ground *how and why* they operate as they do beyond structural or linguistic anthropological formulations (Prozorov 2014: xv). However, by examining the temporal logic of speculation and financialization in the way this project proposes, we are given a fresh frame by which we can grasp the mechanisms of market activities without falling into nihilism, while also avoiding the trap of dogmatism.

And this is the ultimate goal of the project: *to develop a methodological approach* that will equip theorists (and even activists) in their efforts to better understand how and why social value is created, managed, extracted, and distributed. We might call this project a “Prolegomena to Any Future Political Economy.”<sup>5</sup> This is because *our concerns are with the priors of political economic investigation* in order to provide further theoretical tools that will make future research more amenable to the complex problems presenting us in an ever-increasingly financialized world.

This *challenge of financialization* commands our attention at the social, political, and economic registers of life. But even more importantly, the challenge of financialization requires astute philosophical investigation into its inner logics to understand precisely *what it is, how it operates, and towards what ends* it exerts its influence. This project will undertake the latter, while not ignoring the value and import of the social, political, and economic. By using the tools provided by certain strains of post-phenomenological theory, we will investigate the temporal logic of finance so that we might be better

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<sup>5</sup> This is an intentional retread of Kant’s famous “Prolegomena to any future metaphysics” in that we are similarly concerned with the metaphilosophical and transcendental conditions. However, this is no mere Kantian repurposing as our engagement with Deleuze will reveal.

equipped to face the challenge of financialization to society, politics, economics, and the very possibility of the future itself.

As financialization is rapidly becoming the very logic of a global way of life, we undertake both a critical-analytical and normative-ethical approach, that will lay the groundwork for future investigations into financialization that are often missed across neoclassical, heterodox, Marxist, and even Critical Finance Studies' descriptive and prescriptive offerings. Thus, our task is concerned with the priors of political economic investigation; and, as such, our task centers on theoretical groundwork moreso than specific empirical tendencies, with the hope being that future theoretical and empirical work can take up the heuristics provided here to apply them in all manner of political economic enquiry pertaining to finance and its role in society.

## **0.1 To Let Finance Think**

### *0.1.1 Avoiding Foundationalism and Relativism*

With the stated task of the present project given, we must begin somewhere. Admittedly, beginning any investigation is difficult. Especially when the investigation is ever-wary of falling into the ditch of dogmatic foundationalism. There is a trap set between this rigid foundationalism on the one side and a bland relativism on the other. Our task will be to navigate between these two methodological whirlpools, trusting that there is a way to avoid being pulled finally and fully into either, while not resisting the attentional *gravitas* that each demands.

Most importantly, we must avoid the supposition that our ideas are sprung from a necessary root cause. This latter form of thinking is what Deleuze and Guattari (1988) refer to as the arborescent model. In the arborescent model, there is an Aristotelian logic at play, that sequentially unfolds *from the possible to the realized*, where the essence of that which *could be* has preeminence in setting the path of what putatively *will be*. This is placing essence before existence, which projects a fixed totality into the place of transcendent Other, to which the subject is submitted; that is, to which subjectivity is subjected (Smidt 2019: 25). As Kant (2004: 3) states, "Essence is the first inner principle of all that belongs to the possibility of a thing." This inner principle takes primary status as an Archimedean Point from which flowers all manner of possibilities *insofar as they are prefigured by that inner principle*.

The arborescent model is *hierarchical*, and it gives pre-constituted structures a privileged status, integrating everything into it, to settle into their allotted places (Deleuze and Guattari 1988: 16). The philosophical error in this manner of proceeding is that it naturalizes itself by positing itself as necessary and therefore ‘rational’. Politically and socially, the danger in this orientation is that the posited Rational is deemed ‘true and justified’, whereas any deviation from it is castigated as a breakdown of the *right, true, proper*. This creates the means of justifying power asymmetry, as those wielding control of the putative Rational dictate how and in what ways social order is to be structured and maintained.

Set in the context of a project concerned with the logic of finance, to position ourselves beyond foundationalism and relativism is to be concerned with *money*. As Ole Bjerg (2014: 13) states, the preponderance of descriptions of money do not address what money *is*, but rather enumerate the “*functions performed by money* (italics in original).” Therefore, in order to investigate what money is, we must *denaturalize* it. Only then can we begin to imagine other possible forms of money, those that might take on functions that can be put to use in ways that are not already beholden to principles that prefigure a certain politics of money (Bjerg 2014: 15), replete with leverage relations that preemptively secure a prefigured form of the future (Konings 2018).

Philosopher Giorgio Agamben (2016: 16) posits that all money is credit; and as such, all credit-money is *anarchic*, as it is grounded on itself alone. Echoing Walter Benjamin, Agamben states that money believes only in money. But as anarchic, this amounts to a belief in belief; or, in credit-money only relating to credit-money as a self-reinforcing anarchic relay of *crēdere*.<sup>6</sup> For Deleuze and Guattari, money is what “brings things into being” as the principle that “converts demand into effective demand” (Goodchild 2010: 32). This is why money is most in demand: in a system of belief in belief, that which is most desired is that which can actualize desire. Money is, therefore, *the materiality of desire*.

We might be tempted to speak of money as the material representation of desire, or of money as the instantiation of desire, but these formulations presume a separation between *money* and *the real of money*. That is, they presuppose that primordial relation

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<sup>6</sup> cf Peck, Brenner, and Theodore (2018: 7), who similarly argue that “neoliberalization should be understood as an uneven, frustrated, creatively destructive, adaptive, and open-ended process of transformation.” What this means is that neoliberal reason names a process and not a determinate system or a set of outcomes. That is, neoliberalism is not concerned with realizing a set of ends through, for example, structural adjustment programs. Rather, neoliberal reason operates as “a prevailing pattern and ethos of market-oriented, market-disciplinary, and market-making regulatory restructuring.”

between the principle as founding judgment and the source from which this judgment derives its authority. This is why beginnings are fraught. For, without *archē*, we are bereft of the given, and we are unplaced and without orientation, prompting an easy slide into relativism; however, if we foreclose *anarchos*, in the first instance, we entrap ourselves in a field of the already pre-figured, producing rigid forms of foundationalist dogmatism. This is why we must learn to think *according to finance*.

### 0.1.2 Thinking According to Finance

Whether it be the Marxian, Keynesian, or Critical Finance literature, finance is generally considered in *formalist* terms. The Marxian persuasion views finance as an activity of enclosure. Keynesians construct formal operations for managing the threat that comes from uncertainty, which itself is posited as an absolute ontological Other. And the varied voices within Critical Finance typically view finance in performative and/or constructivist terms that attempt to skirt the pitfalls of formalism, but end up positing finance as an abstract set of operations. This leads to the concern of this project, highlighted by the limit that is forever presenting itself: namely, how to think *according to finance*. That is, we must not merely think *about* finance in formalist terms. In a project investigating the logic *of* finance then, the status of the genitive “of” is crucial.

Thought often privileges itself in its selection of material to be investigated. This is seen in formalisms that, through selection and closure, group the many into the one, in order to be able to better engage analytically with the object under investigation. François Laruelle (2012: 27) refers to this tendency as the “principle of sufficient philosophy.” By self-positing, the decision of the principle of sufficient philosophy “ensures philosophy’s domination of all regional disciplines and sciences” (Laruelle 2012: 27). Philosophy objectifies its ostensible other by proliferating a series of possible investigations into that which it separates from itself *for* investigation. In the next instance, then, philosophy is able to subsume the ‘other’ into the inscribed principle set for itself. This is the arborescent model *par excellence*. By establishing the form of the relation between thought and being, all specific thoughts (i.e. epistemology) and beings (i.e. ontology) are prefigured by the “presupposition of the adequacy of thought to the real” (Alkon and Gunjevic 2012: 2). As John Mullarkey (2006: 133) notes, this tendency erects transcendence as the very form of philosophical inquiry.

Science and the social sciences are not immune from this principle of sufficiency. As Paul Livingston (2012: 3-65) forcefully argues in *Politics of Logic*, the tendency to inscribe limits around that which is sayable and non-sayable by establishing a regulative



principle infects a great majority of post-Enlightenment forms of thought. The decision, the *archē*, characteristic of the majority of methodological approaches must be unconcealed for what it is, and thus must direct us to investigate its effects. This will be part of the task of Part Two, as we investigate Marxian, Keynesian, and Critical Finance approaches. The hope is that we will see 1) how these modes of rationality operate via metaphysical assumptions that prefigure their understanding of money and finance, and 2) how we might still yet use these orientations as *raw material* in a further elaboration of the logic of finance.

To this end, we have chosen to begin with the work of Bergson, Deleuze, and Deleuze-Guattari in elaborating the conditions by which we might start to think *according to finance*. The difference here is that, rather than presuming the logic of finance from the perspective of a Marxian, or Keynesian, or Performative/Constructivist orientation, instead, we hope to *let finance think*.

Given that Laruelle is critical of the philosophical decision, it is not immediately obvious how Bergson, Deleuze, and Deleuze-Guattari are ample resources for aiding us to let finance think, for, Laruelle (2012: 74-75) critiques their respective approaches as being determinately identified with philosophy and thus ensnared by the seductions of the principle of sufficient philosophy. However, Laruelle is not opposed to philosophy as an anti-philosopher. His Non-Philosophy uses philosophy as a *raw material*. Only by doing so can thought escape transcendence.

This is similar to Derridean deconstruction, in that it recognizes the pervasive transcendence in philosophical thought. However, Non-Philosophy is not merely a theory (and is certainly not a negative theology); it is also a *practice*. That is, it is a practical and experimental re-orienting of thought in relation to the Real. Where deconstruction is content to engage thought in its formal relation as transcendent orientation regulating the relation between thought and being, Non-Philosophy aims at experiencing “*the Real that is immanent (to) itself rather than to a form of thought*” (Laruelle 1996: 6). What is most important, for us, is that in order to let finance think, we must *contest representational thought* in its sufficient commanding of the conceptual terrain. That is, insofar as representational thinking formalizes by “coloring [sic] the world with its own chosen ideas” (Mullarkey 2006: 137), to let finance think is, in the first instance, to avoid the self-positing sufficiency of representation and its attendant activity of formalist enclosure.

This sufficiency of representation and formalist enclosure are seen in most critical political economic approaches. We will draw from a cross-selection of resources in the Marxian, Keynesian, and Critical Finance Studies literature in order to demonstrate how

and in what ways these persuasions perpetuate The Dogmatic and Moral Image of Thought by their own particular tendencies towards formalism and representational thinking *about* finance, while at the same time gleaning much from these formalist approaches that can be incorporated into our own proposal as we seek to understand both what finance is and how it operates.

## 0.2 The Plan of this Project

### 0.2.1 Part One: Chapter One

We begin our project by using the philosophies of Henri Bergson, Gilles Deleuze, and the co-authored works of Gilles Deleuze and Felix Guattari in our investigation into space and time. We begin with the singularity *spacetime*, and as we move through to the conclusion of Part One, we will speak in terms of the hyphenated *techno-temporality*. The reason for the shift in terminology is the result of a reorientation to the matters of space and time, as such; from a *Substantialist* position that views spacetime as a metaphysical absolute, to an approach to time that is thoroughly synthetic, thinking not in terms of separate dimensions of time and/or space, but of time's complex synthetic relations between what we typically call past, present, and future, while reconceiving of space in technological terms as social topology.

We begin in **Section 1.1** by elaborating Bergson's novel conception of temporality. We focus on his critique of the mathematical conception of time that reduces the quality of duration and the psychological meaning of the moment to the mere quantitative sequence of spatialized presents. Of particular importance will be the stakes of this reduction. Namely, how emergence, freedom, and novelty are curbed by quantitative thinking, whose desire is to *control nature through number* so that the world can be quantified, predicted, and managed. This leads him to posit his alternative conception of temporality: *duration*.

For Bergson (1998: 341), "*Time is invention or it is nothing at all* [emphasis in original]." The ability of time to disrupt, scramble, create, reorder, inspire, challenge is of paramount importance. Without this, time is not truly time. But the facticity of change and process attests that time is real, and that it must be understood in its qualitative uniqueness apart from pattern recognition, extensional relations, or mere quantitative numerical operation. Therefore, we close this section by engaging his conception of time-as-duration in terms of *qualitative multiplicity*. This is a highly speculative, ontological

conception of time, but will prepare us for further investigation into prioritizing a conception of time rooted in *difference-in-itself* in the thought of Gilles Deleuze.

**Section 1.2** initiates our shift to the work of Deleuze, whose conception of time takes Bergson's time-as-duration and Heidegger's prompt to 'think difference as difference' and synthesizes them into a *critique of the possible*. That is, Deleuze intentionally develops a theory of time that eschews the tendencies of representational thinking and formalist closure that can only think of the relation between the possible and its realization. The latter occurs through the rules of *resemblance* and *limitation*, whereby the possible is the formal principle that erects an image of what its realization can and must resemble, and by delimiting which possible options are able to be realized, in the first instance.

We continue in **Section 1.3** by examining Deleuze's alternative to the possible-realized schema: the *virtual-actual speculative dynamic*. The primary difference here is that in the possible-realized schema the possible is not real. It is merely possibly real. Only when existence is added to it does it become materially realized. For Deleuze, by contrast, the virtual-actual speculative dynamic consists of no irreality. The virtual is materially real, which means that there is nothing added to it in order for it to become actualized. Thus, the materiality of virtuality offers us a conception of a differential structure that does not require an agent of power to set the conditions for its expression. This circumvents the determinate and teleological relation between the formal cause of the inner principle of the possible and its linearly determined material realization that is necessarily constructed according to the desires of those wielding power over the conditions of realization in the first instance.

We close this section by demonstrating how Deleuze distinguishes himself from the mysticism of Bergson by employing the idea of *intensive variation* contra *extensional quantification*. Bergson's deployment of qualitative multiplicity and later *élan vital*, produce a mystical conception of time-as-duration that acts as a guiding force over above the materially real. This is seen in his critique of the reduction from quality (time) to quantity (space/social topology). By contrast, Deleuze employs the distinction between intensional quantification and extensional quantification to elaborate precisely how virtuality is actualized without appealing to the ontological dualism between qualitative and quantitative registers of existence. While there is a duality, of sorts, the difference between intensity and extensity is not between immaterial and material, but of different expressions of materiality. Extensional quantification is partitive, divisible, and homogenous, whereas intensive variation is synthetic, irreducible, and heterogenous. This allows us to consider Deleuze's metaphysical project in entirely materialist terms, without any appeals to the

dogmatic and moral tendencies of thought that plague representational and formalist approaches.

**Section 1.4** presents Deleuze's theory of time: *The Three Syntheses of Time*. Deleuze inherits the standard past, present, and future, but refuses to leave them in their abstract states as *mere* moments. Instead, as *syntheses*, each *implicates* and *is implicated by* the others. This is why they are referred to as 'syntheses'. We can speak of the particular dimensions, but only insofar as we understand that they are not independent from one another, but are always co-constitutive and co-implicated. So, each is itself a synthesis, and also synthetically related to the other syntheses in their complex synthetic relations. We will spend considerable time discussing each of the three syntheses, and also discussing how they implicate one another.

What is more, as syntheses of time, *they produce time*. Time is not something 'out there' to which these syntheses relate; time is nothing other than these syntheses in their complex synthetic relation. Yet, this production of time is not an activity of an agent. It is a *passive synthetic process*, which means that human consciousness is not responsible for time's organization. It is a purely material process that refuses any appeal to a transcendent Other.

And finally, these syntheses are *repetitions*, which means that there is some way that things happen. If there weren't there would be no change, no movement, no process. But Deleuze's ontology is thoroughly processual; thus, we must understand his conception of time as always seeking to engage the conditions for change, process, becoming. It is this processual philosophy that is typified in most readings of Deleuze. And for good reason. There is a freedom from closure, a freedom from stasis, a freedom from control that characterizes Deleuzian thought. However, more than a simple radical and chaotic negative freedom-from, we will offer a picture of Deleuze's conception of temporality that allows for both cuts and assembly, release and contraction, scrambling and organization. This is why we end this section by discussing how his philosophy is preeminently concerned with elaborating the conditions for the creation of pure novelty. It is not a program offering a way to create novelty *per se*, but rather allows us to liberate life, nature, and history from its enclosure by the tendency of thought to abstractly control through The Dogmatic and Moral Image of Thought.

**Section 1.5** examines *The Dogmatic and Moral Image of Thought*. This form of thought is not true thinking, for Deleuze. It is a type of knowledge production that habitually thinks *from* pre-established identities, obscuring difference in the name of *the everybody knows*. That is, it takes for granted presuppositions that themselves require investigations

into their genetic emergence to contest the putative sufficiency of their self-imposition. Thus, for Deleuze, ‘the everybody knows’ curtails thought in the name of knowledge-production; whereas *true thought is an aleatory adventure*.

Why this matters is that mere knowledge-production according to The Dogmatic and Moral Image of Thought is the habitual orientation that produces the principle of sufficient philosophy, in Laruelle’s sense. Further, it is what masks that tendency by justifying its approach as natural and necessary. Shrouded in the garb of Rationality, The Dogmatic and Moral Image operates through power asymmetry and control. But the aleatory adventure of thinking, of real thought, operates when The Dogmatic and Moral Image is deranged.<sup>7</sup>

How this relates to time is that The Three Syntheses of Time reveal precisely how and in what ways this Dogmatic Image emerges in the first place as a form of habitual knowledge-production pertaining to the past and the present, while also revealing how and in what ways it is always-already undermined by the guarantee of the death of identity in difference’s perpetual unveiling. While there are political implications that can be drawn directly from this, we leave this portion of the investigation at the theoretical and speculative, setting the stage for our final section of Chapter One, wherein we engage with the specifically political project of Deleuze and Guattari. This is because Deleuze’s conception of temporality is primarily concerned with the metaphysical priors of philosophical thinking about time. It is in his collaborative project with Guattari where his novel conception of time finds its political purchase.

In **Section 1.6**, we close Chapter One by turning to the political project of Gilles Deleuze and Felix Guattari (D-G). Often categorized as an Accelerationist project, the value we extract from their works resists simple political categorization. This is because Accelerationism is typically viewed in extensional terms according to The Dogmatic and Moral Image of Thought, as a project amenable to the expansion of capital. The political project of D-G, by contrast, is not reducible to a political program concerned with the flows of capital at the abstract level established by economic theory. It does not think *from* the unit. To do so would be to employ The Dogmatic and Moral Image of Thought.

Rather, of central concern for D-G is to examine *how and under what conditions* life might be materially excessive of capital’s own limited productive capacities. If The Dogmatic and Moral Image of Thought is Deleuze’s metaphysical conception of how knowledge-production stifles the aleatory adventure of thought, the D-G project is an

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<sup>7</sup> Poet Arthur Rimbaud notably advocates "the complete, systematic and rational derangement (deregulation) of all the senses."

investigation into those forms of social topology that stifle the creative flows of desire-production through the deployment of extensional forms of social formation, and a speculative account of how it might be politically contested.

Constructively, how this takes place is that Deleuze and D-G provide us with resources for diagnosing how and to what extent finance operates according to The Dogmatic and Moral Image of Thought, in its construction of social formations; while also refusing to assert that finance is *merely* a technology that stifles creative flow. It is this delicate balance between creation and closure that informs our use of the term *techno-temporality*. For, this term is a synthetic disjunction that carries within it productive tensions for genuine thinking according to finance. This is because temporality and spatiality are synthetic processes that bespeak of both novelty and habit, creation and production, flow and stasis – at the same times – which offers ways to think *according to finance* without merely thinking *about* finance, or letting financial terms dictate the possible ways we ought to think about constituted financial operations. This will enable us to navigate the misrecognitions of the discipline of political economy, the critique of political economy, and critical finance insofar as they, in different ways, reproduce The Dogmatic and Moral Image of Thought, and also inadequately engage with the driving extensional logic that reproduces capitalist social forms.

It is at this point that we turn to Part Two, where the task will be to examine three popular political economic frames of thought that each presume much about the temporality of finance: Marxian, Keynesian, and Critical Finance literatures. We turn our attention to these three traditions/persuasions of investigation, in order to both understand their respective conceptions of the temporal logic of finance and also to engage with the explicit political economic concerns that motivate them.

### *0.2.2 Part Two: Chapter Two*

In Chapter Two, we look to the Marxist tradition, a tradition so vast that to even categorize it with a single signifier risks generalization at every point. Conscious of this, our approach is to center a discussion of Marxian conceptions of finance through the concepts *time and space*. In the end, we offer a picture of Marxian critique that is centrally concerned with how the temporal logic of finance is *accelerative and integrative*. As *accelerative*, the temporal logic of finance brings monetary operations of industrial and commercial capital together, and therefore accelerates the movement of value. And as *integrative*, it refers to finance's exponential tendency to convert resources into capital.

Taken together, this temporal logic of capital offers us an aperture by which we can better grasp how Marxian orientations think of neoliberal financialization as a technology making a World in its own image.

What the Marxian schema provides is an angle on finance that is both conservative and also transgressive. In its conservative moments, it thinks of a world that is, and that ought to be, conceived in extensional terms. However, in its transgressive virtualities, the Marxian schema creates space to think of the process of world construction beyond representation.

We begin in **Section 2.1** by setting the parameters of our investigation into the Marxian paradigm. We do this by looking at David Harvey's notion of *Time-Space Compression*. As an elaboration of Marx's dictum on capital's tendency towards the 'annihilation of space by time', we show how Harvey's formulation is better understood as positing an annihilation of space *through* time. This subtle terminological difference matters because the form of the putative annihilation that Harvey avers takes place through a conception of time that is pre-constituted as extensional. Thus, the annihilation takes place, in his reading, through a time that is *extensionally accelerative*, as what matters is that the compression is concerned with the *rate of movement across space*. This is the time of the mathematical unit.

We draw out the political importance of this theory from Harvey's perspective; namely, that Harvey is concerned primarily with identifying the conditions of appropriation and domination that result from this time-space compression, so that we might become better equipped to change things. Harvey is critical of political projects inflected with so-called 'postmodernism', because he sees them as stripping away human capacities to create better futures. Against this trend, Harvey wants to retain a strong conception of humanist capacity over the *arrow of time* so that an open future might be posited as *possible* and then *realized* in history.

In **Section 2.2**, we look to the challenge of *post-Marxism*, which contests the underlying assumptions of Harvey's position by 1) rejecting the historical conception of the 'arrow of time' as being constitutive of temporality *per se* and 2) by positing a conception of temporality that focuses on *ontological events*.

We look to the post-historical elaboration of Antonio Negri to offer a conception of Marxian critique as a *critique of power*. Why this matters is that Negri centers *relation* above *history* in his reading of Marx. The result is that he identifies good forms of time versus bad forms. The *good forms* of time are qualitative forms that are concerned with the new as such. The *bad forms* are those beholden to a logic of historical time that is

extensionally quantified. Therefore, communism is not a future historical possible to be realized, but is a qualitative break to be lived in the here and now, at every moment. This takes place through the emergent subjectivity that he and Michael Hardt have termed *the multitude*.

In the end, we learn that Negri's conception stands against the classical Marxian paradigm exhibited by Harvey, primarily in that Negri elaborates a theory of temporality that offers a conception of *positive liberty* that is *qualitatively emergent* in terms that are not beholden to the logic of extensional quantification.

At this point, in **Section 2.3**, we turn to the work of Moishe Postone, who occupies a third position beyond the classical Marxian and post-Marxian positions we have presented. Postone is most valuable, for us, because he elaborates a conception of Marxian temporality that is not reducible to historical sequence, nor does he think of Marxian critique in terms of power. Rather, his 'immanent critique' of capital posits a totality wherein there is fundamental contradiction *within the capitalist mode of production itself*. This leads Postone to place great emphasis on the 'real subsumption' of labor under capital, whereby capitalist society tendentially and ceaselessly commodifies social practice *tout court*. However, this process is dynamic and not linear. He relies on a Hegelian reading of Marx, producing a dialectal concept of historical dynamism that is *accelerative and integrative*. It is accelerative in that capital's rate of domination increases. And it is integrative insofar as more and more resources are converted into appendages of capital's body.

However, we close the section by showing how despite his efforts to offer a dialectical conception of historical dynamism, he employs a conception of temporality that is extensional. This is because there is an objective prioritization of a mathematical order, characterized by a *regime of measurement* that determines the form of calculability with respect to capital's ceaseless accelerative and integrative motion.

**Section 2.4** shifts our concerns to *finance* specifically, looking at the ways that finance is accelerative and integrative in Marxian terms. We argue that a Marxian logic of capital views the process of financialization precisely in these terms: 1) *that finance is not ancillary to capital, but is the highest form of rationality of capital-as-Subject*, 2) *that it ceaselessly accelerates its extensional expansion while integrating more and more resources into itself by* 3) *constructing an image of itself that* 4) *operates through the conversion of resources into fetishized objects that are expressions of this image's essence, which* 5) *function as assets* 6) *in the construction of a World for-capital (i.e. for-itself)*.



From this, we learn that finance is more than an historical phenomenon. It is a form of *techné* that expresses the fullest desire of capital's self-expansion: money generating more money. It does this by structuring how capital-as-Subject's desire operates in the first instance as *death drive*; or as Ole Bjerg (2016) has termed it, 'debt drive'. This is to say that the drive of finance is "caught in an infinitely repetitive cycle, endlessly circulating around the void of the impossibility of debt redemption" (Bjerg 2016: 226). This is because there is no object at which it aims, no goal that will finally settle obligation. It is pure compulsion; *offering settlement* as a promise of satisfaction, but only ever *providing endless deferment*.

The result is that the *techné* of capital materially instantiate this process of compulsive drive by constructing a world that is quantifiable according to the logic of extensional quantification. Thus, as *techné*, finance makes a World in its own image. Yet, this death drive is not something that takes place at the level of human subjectivity, but rather at the level of the totality as Subject – capital-as-Subject – which structures how and in what ways its self-expression will unfold in its own image. This erects a possible-realized schema that determines how and in what ways particular activities will operate in the service of Capital-for-itself.

In the end, what we glean from the Marxian persuasion is that there is a temporal dynamic characteristic of capital that is accelerative and integrative, and that finance is not separate from this dynamic in qualitative terms, but is a higher rationalization of a tendency inherent in capital from its most simple forms. This aperture onto capital gives us insight into finance from a Marxian perspective, but more importantly signals to broader concerns for how to understand what we are calling the techno-temporal logic of finance. That is, finance has certain tendencies in constructing a world according to an image. This is because finance, as *techné*, converts resources by promising settlement, but only ever offering deferment. The world it constructs, therefore, is fraught with insecurity. As it carves out pathways, means of life take on the forms provided by capital's conditioning prowess, which then proliferate capital's compulsive tendencies through the construction of path-dependencies that make worlds within worlds that are coded by the logic of extensional quantification.

Therefore, the Marxian approach gives us a unique aperture onto finance that starts from the present, which then reveals how past and future are reduced to the logic of habit in the form of what we are calling extensional quantification. This activity is characterized by the *accelerative and integrative logic of finance*. While the resources within the Marxian schema may waver between conservative desires for world

construction according to the logic of extensional quantification (i.e. productivism), and the transgressive potential of virtuality that creates conditions for qualitative breaks from capital's self-reproduction (ex. post-Marxism), the biggest takeaway as we close this chapter is that *the Marxian schema opens up a way to think of finance as materially self-reproductive through the endless proliferation of technical devices that retain and project a self-same image that creates the conditions of social formation.*

### 0.2.3 Part Two: Chapter Three

In Chapter Three, we turn to Keynes and the *ethics of macroeconomic rationality.* We view Keynes as a profoundly moral thinker, concerned primarily with national well-being. We argue that his concerns with time, money, and finance are inseparable from this framing, as any efforts to construct a good society *require the management of the future itself.* How this is performed is through an ongoing communicative activity through institutions and subjects.

From Keynes, what we glean is an aperture onto finance that is thoroughly ethical and political economic; one that centers the uncertainty of the future, and the certainty that challenges will befall us, alongside the social mandate to develop economic models to mitigate the negative consequences stemming from the transitory nature of reality. His pursuit of the construction of the good society in his early career motivates his later political economic writings. However, this concern slips into dogmatism unwittingly by fetishizing the certainty of uncertainty in metaphysical terms, that culminates in the necessary and justified solution of technocratic sovereignty, which putatively mitigates the consequences that uncertainty certainly carries with it. Thus, our Keynesian aperture reveals the technological dimension of finance as a system of technological management. As with Chapter Two, we glean much from the Keynesian program, but will highlight certain theoretical underpinnings that require a critical gesture, while continuing to carry much of it forward.

Our investigation into Keynes begins in **Section 3.1** by examining the philosophical, ethical, and temporal foundations of Keynesian Political Economy. Our argument is that Keynes' political economic theory cannot be understood without centering his approach in his philosophical and ethical priors. We demonstrate this by briefly discussing his early adoption of G.E. Moore's philosophical and ethical project. In short, the dilemma that concerns Keynes is *how to resolve the immediate with the futural, or between the rational and understood and the unknown and therefore speculative.* While he embraces Moore's concern for the pursuit of 'the good', his rejection of Mill's utilitarianism, and the idea that

decisions carry with them vast multiplier effects that make probability a fraught endeavor, Keynes' unique concern is how to realize the general good in a world that is uncertain and where there is no intuitive guarantee that our individual (or collective) decisions pertain to the pursuit of the good.

We close the section by arguing that there is a tension in Keynes' thought that reveals precisely how this pursuit of the good would be addressed in his later economic treatises. The tension revolves around the status of the future – that is, *uncertainty*. On the one hand, there is a conception of uncertainty that is qualitatively distinct from any possible human inference. On the other, there are degrees of uncertainty that can be calculated away so that this uncertainty can be managed, or 'actuarially known'. It is this tension between *irreducible uncertainty* and *calculable probability* that informs the philosophical orientation of Keynes' theory of economic management that he would later develop in *The General Theory*. This is why he formulates economic science as, "thinking in terms of models joined to the Art of choosing models which are relevant to the contemporary world" (Keynes 2015: 571-572). For, there is a creative artistry and scientific rigor required to meet the dual challenge of the irreducibly uncertain and the fraught-but-knowable.

**Section 3.2** focuses on Keynes' economic approach to addressing this dual challenge of the future. We focus on his particular form of managing the short term, while preparing for the long term. This is because in the short term there is less uncertainty, and therefore short-term forecasting becomes paramount for its practicability. This is where Keynes' formalism enters.

We examine Walrasian, Neo-Keynesian, and post-Keynesian approaches to short term modeling, arguing that, for Keynes, formalist closure is a temporary closure that treats the activity of economic modeling *as if* the process of the phenomena under consideration had come to a stop, in order to begin scientific investigation. This is a necessary form of abstraction that serves a limited purpose, but that is always being refined as more and better information is gathered both empirically and theoretically. This is why economic science is both an art and a science. And this is what distinguishes the Keynesian approach from the neoclassical one (and the neoclassical synthesis), who center general equilibrium and utility maximization, which act as absolutes in the vein of Deleuze's 'everybody knows'.

What is more, it is here that we find a pathway into understanding liquidity preference. For, liquidity preference signals the impossibility of ultimate closure by giving justification to the function and desire for liquidity as preferential under conditions of

uncertainty. Liquidity does not eliminate uncertainty, but requires its existence, and finds its ultimate motivation in managing this uncertainty. As Keynes (2015: 546) states, “Our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations and conventions concerning the future.”

By centering uncertainty in this way, we close this section by noting how the Keynesian focus on an uncertain future leads to a *political economic justification for technocratic sovereignty*. This is because the necessary non-knowability of the future becomes a challenge of utmost importance, which requires forms of regulation that are putatively up to this challenge, through forms of technological intervention that are constructed precisely for the purposes of serving this challenge, all in the name of addressing the seemingly impossible challenge that is issued by staring directly into the abyss of the unknown.

Then in **Section 3.3**, we examine precisely how these technological interventions operate. We argue that in order to understand the logic of financial mechanisms in Keynesian political economy, we need to see these *techné* as *ongoing communicative modal operations*. We draw from the work of Robert Brandom in elaborating a theory of semantic modality that illumines how the Keynesian theoretical framework is a modal investigation into the macro conditions for possible micro experience. Said otherwise, the artistic activity of economic science in making models is best understood as the *practice of giving and asking for reasons*.

We close the chapter by bringing this into more familiar political economic territory by looking to the work of Hyman Minsky, for whom balance sheets are filled with promises received and promises made (Konings 2018: 75). Speculation is thus concerned with navigating through uncertainty, knowing that the relative success or failure of any investment will only make sense in a revealed future scenario; that is, through the perpetual negotiation of financial communication, which we define as the process of giving and receiving ‘reasons’.

As the capacity to meet obligations, *liquidity*, therefore, becomes a modal capacity to better meet obligations as they arise. Therefore, since uncertainty forms a type of modal limit, liquidity operates as a way to prolong running into that limit by enabling the activity of giving and receiving promises to continue through short term interval management, whereby modal negotiations are pursued with respect to “the likelihood and size of the anticipated gain from purchasing an asset” in relation to “the likelihood and size of loss expected at the time of sale” (Keynes 2015: 501). Modal strategies can then be charted, through diagnoses of the proper and improper functions of current balance sheet positions,

with the goal of modal inference ultimately aiming towards peace of mind as the liquidity premium. Taken altogether, in the hands of fiscal authorities, through bank-created funding liquidity, in communication with corporations, and working alongside regulators, we can surmise that *macroeconomic rationality is primarily concerned with the modal rules by which the manifold of market activities are made intelligible.*

If the Marxian schema is primarily concerned with the present and how both past and future are related to it in extensional terms, the Keynesian schema centers the future as uncertain from the vantage of the present. Keynes' future is a future *for probability*, for rational degrees of belief that will impact present decisions. This takes place through the perpetual rational shifting of present expectations in relation to how the uncertain can be conceived. Shifting between positivist and Kantian tendencies, Keynesian thought turns the future into a problem for subjects, or more properly for economic science and institutions to engage in the activity of model construction and policy making, which is both a science and art. The goal is the pursuit of the good: the future as the realization of the good, as understood from the vantage of the present. Thus, with Keynes, the temporal logic of finance is an abstract relation primarily between present and future.

#### *0.2.4 Part Two: Chapter Four*

Chapter Four investigates the loosely affiliated persuasion known as *Critical Finance Studies*. Cognizant that there is no consensus definition of what critical finance is (Borch 2021), there can surely be no definitive determination of *the* temporal logic of an entire field of discovery. However, commonalities can be found across a sample of figurative voices, and as such there are ways to condense a wide literature while avoiding straw man constructions and unfair caricatures. What is more, considering the aims of this project, the selection of certain concepts to serve as heuristics that might unveil tendencies indicative of a disciplinary persuasion is crucial. With that, this chapter will focus on the work of Donald MacKenzie (endogeneity), Elena Esposito (performativity/systems theory), Martijn Konings (the plastic logic of value), and Elie Ayache and Jon Roffe (speculative finance). These figures form a selection that bring together the most current trends in the Critical Finance literature. By the end, we will have presented a body of literature that, while varied, shares many common concerns. The figures in this chapter are the ones most sympathetic to the argument of this project. However, each of these figures will also be pressed to their limits so that we can reveal the priors that prevent a more robust conception of the temporal logic of finance from being proffered. Specifically, the tendencies towards onto-theology will be unveiled so that we can find how and in what

ways we can think *according to* finance without falling into The Dogmatic and Moral Image of Thought.

**Section 4.1** looks to the work of Donald MacKenzie, whose notion that financial technologies are engines productive of financial markets takes the Keynesian conception of uncertainty and internalizes it so that it is *endogenous to speculation itself*. This means that there is a performative forcing characteristic of financial speculation that learns to price uncertainty according to the terms established by mathematical pricing models (notably BSM). In the end, speculation is concerned, not with a leap into the beyond, but with the *construction of the future, through institutional leverage, as a performative activity, seeking to realize the possibles of institutional social production*.

This performative approach is examined further in **Section 4.2** in the work of Elena Esposito, for whom *the derivative* offers us a unique conception of the future concerned with *expectations about expectations*. While she spends considerable time positing a conception of the future that she believes refuses the metaphysical pitfalls associated with dogmatism, we show how her conception of the ‘open future’ functions as a metaphysical, ineffable One that leads to onto-theology and The Dogmatic and Moral Image of Thought. This is because her Systems-Theory approach sneaks the universal in the back door through the imposition of the *future as a formal horizon*. This formal horizon becomes the regulative principle that conditions the possibility for orienting to the future in the first instance.

**Section 4.3** looks to the work of Martijn Konings, who also uses Systems Theory, but whose invocation of the concept ‘the plastic logic of value’ refuses to fetishize the open future in the way Esposito does. This is because he does not erect a gap between the now and not-yet; what he calls the Kantian Leap. Instead, he posits a totality whereby there is no outside or beyond, but a pure self-referential process of emergent creation. His concern is towards the *generative conditions of temporality* that moves his own approach beyond the onto-theological tendency of performativity that characterizes Esposito’s project. And because of the self-referential nature of *the plastic logic of value*, the affirmation of totality is an affirmation of a totality that “becomes many as soon as it passes through the ‘unifying’ function of language, thus producing the gulf between the sign and its reference” (Livingston 2012: 59). This gulf is an *unobjectivizable transcendence* of the scission between decision and imperative, between contingency and necessity, that is insistent in every utterance. It is the quality of the plasticity of value that conditions actual financial operations through money’s desire to self-reproduce (Yuran 2014).

We close the chapter with **Section 4.4** and a look to the speculative financial theories of Elie Ayache and Jon Roffe. Ayache's interest is in the *hyperchaos of market reality, which ensures that probability is untenable*. The market becomes, for Ayache, a *medium of pure contingency*. Roffe agrees with Ayache's critique of probabilistic reason. However, whereas Ayache appeals to hyper-chaotic contingency, Roffe's approach is more subtle in its appeal to *Deleuzian univocity*. This produces a theory of the market as the *univocal regime of price*. As such, we learn that everything that can be priced is priced via a converting act of *inscription*, through the leveraging of power relations by those with capital power as they *enclose* resources, through the technical pricing activity according to the logic of *extensional quantification*. However, despite this, there is a social *unconscious* that also characterizes the market, as prices are never seen fully for what they are, but are always *misrecognized as value* under determinate social conditions that impose value on top of price. This is where Roffe most stringently departs from Ayache. This is because, for Ayache, there is no political program in the hyper-chaotic contingency of market pricing. But, for Roffe, the fact that there is always misrecognition requires analysis to get beneath the surface of putative market realities that mediate social life so that we might better understand the processes of genetic emergence that lead to the mediating 'realities' that we take for granted as constitutive of social formation.

Critical Finance Studies takes the challenge of Marxian social formation and Keynesian uncertainty and constructs a temporal relation that is distinct from either Marxian or Keynesian paradigms. In the performativity and constructivist Critical Finance literature that we investigate, the temporal schematic inverts the Keynesian relation that proceeds from technological management in the present in relation to uncertain future, by internalizing the future through the rejection of the subject-object binary. With Esposito, the future becomes the Real of the present in that the phenomenological horizon of the open future informs the present, in the first instance. The derivative becomes emblematic of this temporal logic. Implied volatility becomes part of the constructive habit of financial operators in the present through pricing technologies such as BSM. The result is that the mathematized conception of the future (in terms of implied volatility) as an algorithmic input shapes the form of the contractions of the present, so that each moment of price-writing is informed by the inscriptive meaning given by serial processes of price-writing.

For Ayache, this is a poetic activity. What he means is that price-writing brings forth radical contingency, which is always excessive. However, the leverage relations of those with capital-power (i.e. the power to price) carve determinate paths that delimit the expression of contingency through the habitual construction of striated paths. The value-

decisions that orient price-writing, in the first instance, pre-determine the formalist operation of pricing. Roffe shows, therefore, how finance must not be conceived in terms of future-present relations, but must be understood as a *complete temporal dynamic*. This is because the market is a medium of contingency (that is a space of present and future interrelations), but also a *price archive that requires an investigation into the social unconscious*.

#### 0.2.5 Part Three: Chapter Five

The final section of the project is the most speculative. Part Three proposes a speculative account of *the techno-temporal logic of finance*. This chapter takes what has been gleaned from the apertures in Part Two, and weds it together with the novel investigation into temporality from Part One. From the Marxian aperture, we must not remain ignorant of capital's desire to construct a world in its own image through the deployment of financial technics that have the converting power to put anything to work for capital. From the Keynesian, we consider the ethical dimension of constructing a society from the perspective of finitude being confronted by infinitude. And from Critical and Speculative Finance, we endeavor to move beyond the adequacy of subject-object relations, while considering the full implications of finance as the engine of the market, which is a univocal price regime that operates through the material process of inscription, enclosure, extensional quantification, and intensive variation (unconscious). In the end, we will have sketched the outlines for a future field of study that considers time in its robust synthetic dimensions.

Towards that end, this final chapter begins in **Section 5.1** by discussing technics and time in the work of Bernard Stiegler. This provides the theoretical grounds for the material basis of techno-temporality, so that the latter is not viewed in terms that can be disregarded for being ethereal or intangible or overly metaphysical. We focus on the broad strokes of his project in *Technics and Time*, distilling his conception of both technics and time in such a way that we can use them as concrete, raw material with which to hitch our concerns from Part One and our insights from Part Two.

In particular, we offer a conception of *techné* that is not reducible to an instrumental object for the use of the human. Instead, we show how Stiegler's conception of *originary technicity* eschews mechanistic, biological, and anthropological theories of *techné*, in elaborating a position beyond merely the organic or inorganic. He refers to this alternative position as the *technical object*, and refers to such as originally constitutive of temporality and spatiality, insofar as time and space are 'derivative decompositions of speed', where



'speed' carries connotations of deterritorialization and technical evolution that is replete with 'events' in the Deleuzian sense elaborated in Chapter One (Stiegler 1998: 16-18).

Next we turn specifically to *time* to aid in our novel conception of technicity. This is because technicity must not be understood in instrumental terms, but must reveal the relationship between technics and time. The instrumental conception of technics forgets the temporality of time, as time is reduced to the logic of technoscientific rationality that operates via the logic of the one, or the unit. It erects a discrete ontology that spatializes temporality by demarcating contiguous relations in a phase space that is always-already subject to the rule of possible calculability. This rule becomes the prism through which possible experience emerges, which means that there is an activity of pre-inscription, or coding, that takes up material within pre-established parameters that only further serve the technocratic logic. This is the metaphysical decision that leads to The Dogmatic and Moral Image of Thought.

What is required to contest this tendency is a theory of the *event*. Stiegler speaks in terms of 'speed'. However, as discussed in Chapter One, this speed is not to be understood in extensional terms, but *intensional*. This is the speed of *intensive variation*. Simon Glezos (2012) notes how the speed of extension is the liberal conception of speed that is tied to a technoscientific rationality. It only thinks of speed in terms of the fetishized conception of accumulation (Glezos 2012: 13). But speed also carries the sense of break and scission. As there are speeds that characterize innovation and the logic of extensional quantification, there are also specific speeds, or unique ontological speeds, that are exemplified by different assemblages; those that are not already subjected to technoscientific rationality. The key to understanding these speeds lies in the nature of the technical object, which itself is a robust synthesis of many variations of virtual and actual expressions. This is where Deleuze's Three Syntheses of Time reenters, as the technical object is constituted through the syntheses of habit/present, pure past, and eternal return of difference (future/guarantee of the death of identity).

We close this section by looking at how Stiegler's novel conception of technicity relates to the *technics of finance*. In order to understand this we introduce one more concept: *mnemotechnical devices*. In *For a New Critique of Political Economy*, Stiegler lays the framework for a *prolegomena to any future investment scheme*. Decrying the short-termism of Keynesian demand management (in both stimulating consumer demand or investment demand), Stiegler (2010: 6) argues that what is needed is a new type of investment strategy focused on the long-term goal of *philia*, or common desire. To invest in common desire means to have knowledge for what a new industrial politics requires.

This again requires that we understand how The Three Syntheses of Time are constitutive of the logic of finance. From the perspective of the First Synthesis, we can think of financial technics as being *serial mnemotechnical devices that inscribe meaning through coding practices that habitually reproduce the conditions for further coding to take place*. Derivatives, for example, operate as value-laden technics that orient financial operations (Bryan and Rafferty 2006). In so doing, they set the conditions by which thought, feeling, and action can proceed, through a given economic world, at the behest of those with capital-power, through leverage, while overdetermining the transcendental coordinates for organizational strategy and structure, subjective constitution, policy, and the like.

As for the Second Synthesis of Time, the pure past is not psychological memory, but is *technical*. That is, *the market is a mnemotechnical field*, where meaning-making is inscribed. If habit is the serial contraction of technical presents, the pure past is concerned with the virtual field of potency from which contraction draws its resources. This means that what is expressed in the present as habit is the contraction of virtual difference as extensionally quantified. This pure past is not a metaphysical supposition, but is given material status as the persistence of the entire past in mnemotechnical terms, as the proliferation of technical objects make up the field that *is* the financial market.

That said, the First and Second Syntheses themselves do not give us an adequate conception of temporality that is useful for thinking the techno-temporality of finance. This is why the *Third Synthesis of Time* is crucial to consider. Eternal return is the guarantee of the death of identity. This is not a sequential conception of the future, but is the ontological, speculative facticity of difference-in-itself rupturing all serial tendencies that emerge from the syntheses of the First and Second Syntheses. It is here that Ayache's radical contingency of the derivative, and Roffe's emphasis on the intensity of the social unconscious matter for us. This is because eternal return is the postulate that the mnemotechnical field is rent asunder by difference. So, while the First and Second Syntheses operate by a process of coding that inscribes, encloses, and extensionally quantifies the meaning-making process through mnemotechnical operations, *the Third Synthesis is unconscious death drive* (Somers-Hall 2017: 323). This means that coding takes place at the level of habit and pure past, through mnemotechnical meaning-making; and that capitalism is the intensification of decoded flows as the eternal return of the death of identity (Bjerg 2016).

Our project wraps in **Section 5.2** by offering 7 *theses* for a techno-temporal logic of finance that synthesizes everything we've discussed throughout. These theses are the

culmination of the project up to this point. They are speculative and as such can only serve as guideposts for further investigations, as we are not concerned with building a system, but with setting an orientation for future investigations into political economy. The first four pertain to the logic of finance as elaborated in this project. And the final three are prospective ways to address fetish objects in any given political economy. They are not exhaustive, but show how future works might carry the mantle of this defamiliarizing project into familiarizing pursuits.

The *first thesis* asserts that finance operates through acts of inscription at the level of habit, according to the First Synthesis of Time. *The second thesis* posits that enclosure is the contraction of virtual potencies that selects meanings and consolidates them into forms of habit, according to the logic of the Second and First Syntheses of Time. *Third*, we claim that inscription and enclosure are mathematized via extensional quantification (i.e. pricing), according to the First and Second Syntheses of Time. *The fourth thesis* notes how intensional quantification is the active motor of financial operations, and the constitutive vitality of capitalist social formation. As such, intensity is the variation of difference-in-itself that guarantees that static identities are always-already ruptured, due to the Third Synthesis of Time. And the final 3 theses briefly propose how *Money and Debt*, *Financial Institutions*, and *Subjectivity* might be understood afresh, under a regime of financialization, according to the techno-temporal logic of finance.

In the end, we leave the reader with resources to begin to think according to finance. This does not mean discarding the traditions/persuasions discussed throughout this project, for all have many insights that require further consideration. Rather, this project intends to leave the reader with a framework for questioning the presuppositions of political economic investigation in all its guises. There is no single way to understand the matrix between the political and economic. And this project does not assume that it can approach anything like a final word. Instead, our hope is to provoke thought, and to lay a set of resources at the feet of those more capable within their areas of expertise of taking up this project and working with it in ways that will continue the long tradition of critical political economic engagement.

Finance is typically thought of exclusively in formalist terms. For the Marxian legacy, finance is a form of enclosure first and foremost. For Keynesians, finance is a modal operation for managing uncertainty. And within the Critical Finance literature, while varied, finance is typified as performative and/or constructive. Through all of these persuasions, finance is formalist through and through. Its activities colonize the future; re-trench asymmetrical power relations; intensify mystification; construct social relations;

capture resources; abstract quality through conversion into quantity; *et al.* While not wrong, if the task is to think *according to* finance, then financial operations must not be reduced to such formalist functions. Unless we learn to think according to finance, all our critiques will have some use but will always be limited by the activity of selection and closure that characterizes formalism.

That said, once we learn to *think according to finance*, we can't presume exactly what our approach will be. This means there will have to be some measure of experimentation and openness that marks our future interrogations, because to think according to finance is to think according to the Real, rather than projecting onto it from a predetermined ideological position. To think according to finance is for finance as raw material to take the status as Real, insofar as it is not *merely* correlated *with* subjective and/or institutional operations. It is to *also* leave space for finance-as-Real to be mediated by such operations in mnemotechnical processes. This means that finance-as-Real is never formally determined to be such and such. Rather, to think finance-as-Real is to let finance think. It is to let the techno-temporal processes of finance have a voice of their own, without dogmatically presuming how and in what ways they will or ought to operate. And this is the value of thinking time in the ways explored in this project: because it lets us think finance, and also think according to financial operations, such that their very logic is revealed in techno-temporal terms, without 1) falling into a hasty moral critique that can only ever view finance from a position that is deemed to be morally superior in lieu of having putative knowledge of what is right or necessary or proper or 2) a naive valorization of market activities that ignorantly presupposes that finance is merely a benign mathematical operation in the service of human hands.

## Chapter One:

### Bergson, Deleuze, and Deleuze-Guattari on Time and Social Topology

#### 1.0 Introduction

There is no shortage of engagement with the work of Gilles Deleuze. This statement is amplified further when we consider his co-authored political works with Felix Guattari. However, the contention of the present project is that there is much in these works still to be mined, particularly for those with an interest in the logic(s) of finance. That said, the majority of political economic interest in Deleuze comes by way of his co-authored project with Guattari (Gibson-Graham 1996). While their joint project will prove to be immensely valuable for us, our contention is that the key to understanding the value of this later project comes by first centering his early metaphysical project, particularly *Difference and Repetition*. It is here that he presents a novel conception of ontology that bears directly upon temporality that provides us with a conceptual apparatus that will aid us in our efforts to think according to finance.

This conceptual apparatus is most valuable in that it enables us to think of time in terms that resists that tendency towards the principle of sufficient philosophy that orients us, that preordains what is possible; but without necessarily offering a determinate form of thinking as an antidote, as to do so would be to fall into the very trap we are seeking to avoid. Instead, what Deleuze offers is a way to conceive of temporality in ontological terms through his Three Syntheses of Time that explain *how* and *why* The Dogmatic and Moral Image of Thought emerges in the first place, and also how and why it is always-already being undermined by guaranteeing the death of mere identity. It is this guarantee that identity is repeatedly problematized that speculatively seeds the stakes of contesting The Image of Thought and encourages ways to create outside of its strictures.

Thus, if *Difference and Repetition* provides a genetic account of *how* and *why* The Dogmatic and Moral Image emerges and how it can be contested, the project of Deleuze-Guattari (D-G) can be seen as a genetic account of legitimate and illegitimate forms of social formation. The illegitimate forms operate via The Dogmatic and Moral Image, whereas the legitimate take place in the syntheses of desiring-production. Desiring-production is never devoid of context; it is always modulated by specific historical conditions. In capitalism, for D-G, there is a tendency towards an illegitimate form of social production as the *modus operandi*, that preys upon desiring-production, coding it

for capital in the construction of a social topos in extensional terms. The task for theory is to draw attention to this tendency, to call out its contingency, and to draft pathways beyond this transcendental illusion that asserts itself as natural, necessary, and good – that is, dogmatic and moral.

This is no Accelerationist ‘capitalophilia’ that fetishizes the non-representational in the name of endless deterritorialization (Noys 2014). Such is a common critique of Deleuze and D-G. The claim centers on the supposition that deterritorialization is mere escape; that it is amenable with intensified capitalist accumulation; that it is concerned primarily with velocity. The problem here is that escape, accumulation, and velocity are *only understood in extensional terms*; those terms we’ve already discussed as being established by the logic of the unit which leads to The Dogmatic and Moral Image of Thought. Rather, of central concern for Deleuze and D-G is to examine *how and under what conditions* thought might be materially and qualitatively other than capital’s own limited productive capacities. Thus, if The Dogmatic and Moral Image of Thought is Deleuze’s metaphysical conception of how knowledge production stifles the aleatory adventure of thought, the D-G project is an investigation into those forms of social topology that stifle the creative flows of desire-production through the deployment of extensional forms of social formation, and a speculative account of how it might be politically contested.

However, in order to understand Deleuze’s Three Syntheses of Time and The Dogmatic and Moral Image of Thought, as well the D-G project, we must first briefly attend to the ideas of Henri Bergson, whose development of the concept *duration* will factor centrally in our endeavor to think of temporality in the novel terms this chapter elaborates. Beginning here, we understand the nascent intuitions of Deleuze’s project in Bergson’s own novel conception of time and the consequences of failing to think time appropriately. We focus on his critique of the mathematical conception of time that reduces the quality of duration and the psychological meaning of the moment to the mere quantitative sequence of spatialized presents. Of particular importance will be the stakes of this reduction. Namely, how emergence, freedom, and novelty are curbed by quantitative thinking, whose desire is to control nature through number so that the world can be quantified, predicted, and managed.

From there, we spend considerable time working through the highly theoretical early work of Gilles Deleuze. Paying particular attention to *Difference and Repetition*, we focus on key concepts pertaining to time and thought that have resonance for our development of an investigation into the techno-temporal logic of finance so that we

might begin to think according to finance. Then we close by turning to the co-authored works of Gilles Deleuze and Felix Guattari, who present us with a socio-political project that takes the early metaphysical work of Deleuze and translates it into material terms that will aid our investigation into the logic of finance as a techno-temporal logic.

This chapter will proceed as follows. **Section 1.1** will constructively investigate Bergson's novel conception of temporality, focusing on *duration* and the difference between *quantitative multiplicity* (space) and *qualitative multiplicity* (time).

In **Section 1.2**, we begin our study of Deleuze by looking at his Bergsonism and the critique of *the possible*. **Section 1.3** elaborates what we are calling the *virtual-actual speculative dynamic*. It is this dynamic that indicates how to move beyond thinking in terms of *arché*, of arborescence, of the possible-real. We pay particular attention to the *material reality* of this dynamic, as well as its relation to intensity (contra extensity).

**Section 1.4** gets into the meat of Deleuze's conception of temporality, by examining his *Three Syntheses of Time* from *Difference and Repetition*. Then in **Section 1.5** we turn to what Deleuze calls *The Dogmatic and Moral Image of Thought*. This section is crucial for helping us understand the relationship between thinking and our conceptions of temporality. And finally, we shift tack in **Section 1.6**, from Deleuze's early metaphysical investigations, to his more intentionally political concerns in the co-authored works with Felix Guattari. We pay special attention to *Anti-Oedipus*, but their entire project of schizoanalysis peripherally frames our approach.

In the end, we will have provided the reader with resources towards a post-metaphysical, metaphysical approach that is rooted in a novel conception of temporality, but that is not devoid of material reality. What this means is that we must be aware of the critique of metaphysics that is presumed by Deleuze's investigation, but also acknowledge his desire to offer a metaphysics for science (Marks 2016). This metaphysics for science is therefore post-critical in that it does not rest in mere critique, but constructively investigates the 'Being of being' that has always been the hallmark of metaphysical inquiry; and all this by positing a metaphysical theory of difference that is thoroughly materialist. Once this is proffered, we will have presented the theoretical beginnings of the conception of techno-temporality that will take further shape as we proceed through Part Two and into Part Three where will it take full shape as a logic by which we can begin to think according to finance.

## 1.1 Bergson's Novel Conception of Temporality

### 1.1.1 Bergson: *The Psychological Experience of Time, contra Mathematical Time*

For Bergson, what is most important about time is not the number or the mathematical unit, but the *meaning of the moment* (Canales 2015: 36). Jimena Canales (2015: 259) sets the terms of the issue by noting how, "Mathematical time elided the differences between instants (tied to experiences, feelings, memories, and meaning) by considering all moments on the same plane." When the latter occurs, *the event of the moment* is missed in favor of a rush to explain a function of a spatial relation. Such a reduction diminishes the psychological experience of duration in its pluridimensionality.

Therefore, for Bergson, there is an *irreducibility of lived time* that cannot be explained by a reference to an external measurement principle (ex. clock time). This is the crux of his well-known debate with Einstein (Canales 2015). It is not clock time *per se* with which Bergson takes issue; rather, it is the *philosophical principle of mathematical quantification* that sets an *archē* of Einstein's elaboration of relativity. For the latter, *time is either what clocks measure or it is nothing at all*. This is why Einstein (1922-1923) makes such a strong statement against 'philosopher's time' in his debate with Bergson, which he saw as not pertaining to the sequential nature of time that clocks measure.

Thus, it is Einstein's *epistemology* that entraps him within an *arborescent model* of thinking; one that places his very orientation into a path-dependent relation structuring his investigations into the nature of reality.<sup>8</sup> Therefore, Bergson's primary criticism leveled against Einstein brings us back into conversation with the closing pages of our Introduction: namely, that there is a *philosophical decision* that preempts the investigation into the nature of reality, but one that goes ignored in the proclamation of an absolute discovery of the nature of reality as a World-in-itself.<sup>9</sup> This metaphysical ignorance leads to an epistemological arrogance. Thus, when Einstein declares that the 'philosopher's time' does not exist in the presence of Bergson, the goal of Bergson's replies was to reveal to Einstein and his followers their own subjective hubris which inflects into their scientific investigations of putative objective reality. Targeting Substantialist sequential

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<sup>8</sup> For more on Einstein's epistemology, see Holton (1968). For a critical perspective on Einstein's Kantianism see Maritain (1924), in which he remarks that Einstein's work was pseudo-philosophical and smacked of "embarrassing residues of Kantianism."

<sup>9</sup> It was relativity theory's reliance on the four-dimensional geometry of Minkowski that left *spacetime* as an absolute. Minkowski (2012: 43) declared that in four-dimensional physics, space and time "are to fade away into the shadows, and only *eine Welt an sich* will subsist." In Einstein's own words, "The belief in an external world independent of the perceiving subject is the basis of all natural science" (Einstein 1931).



conceptions of spacetime,<sup>10</sup> Bergson elaborates an approach that centers on *duration*, in order to articulate a sense of time that is not beholden to the abstract logic of the unit and that is not reducible to linear conceptions of temporality.<sup>11</sup>

### 1.1.2 Duration: Beyond Sequence

There is no principle more crucial for understanding Bergson's conception of time than that of *duration*. It is a novel conception that resists the tendencies of Substantialism; the latter which both sequentializes time and also erects a metaphysical absolute World-in-itself. Much like Heidegger's (1969: 74) critique of the metaphysics of presence, for Bergson, temporality is an opening, a qualitative orientation whereby a seed may be sown "which some time or other may bloom in its own way and bring forth fruit."

If Substantialist conceptions of spacetime are to be understood as linear/ sequential and metaphysical, Bergson (and Heidegger) are endeavoring to resist the *arborescent model* and the sufficiency of *archē* that characterize the Substantialist conception, in favor of *thinking time constitutively alongside subjectivity*.

In *Being and Time*, Heidegger ties his conception of time integrally with the existential analytic of Dasein. *Temporality* is the motor of Dasein as historical entity, which opens its self-understanding and ultimately *unconceals* Being to it (Heidegger 2008). Thirty years later, in *Identity and Difference*, he would muse on temporality as the "time of thinking which is different from the time of calculation that pulls our thinking in all directions." Binding the threads of his project together, we can summarize that the "time of thinking" in the existential analytic of Dasein is a thinking ahead to "that which approaches us as the call." This call is a voice beckoning towards the *coming-into-its-own* of "identity between Dasein and Being" (Heidegger 1969: 41) But this forward seduction is not a *planning into the future*, as in calculative, mathematical, sequential time. This latter can only think in terms of sequence and yield a series of *presents*. Instead, as an unconcealing, Heidegger's temporality is an orientation, a pre-disposing towards the event of a rupture.

For Bergson (2001), it is *intuition* that is the first encounter with social life and homogenous time and space, which creates the conditions for a deeper awareness in reflection. Once this encounter with the 'homogeneity of the medium' occurs, then proper

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<sup>10</sup> Absolute spacetime "of its own nature without reference to anything external, always remains homogeneous and immovable" (Newton 1726 [1999]: 408).

<sup>11</sup> For historical debates between Substantialist and Relationist conceptions of time, see Pooley (2013).

reflection – i.e. *intuition* – is pressed further “from the idea to the effort, from the effort to the act,” which speaks of a process of individuation that emerges from a complex whole (Mullarkey 1999: 34-35). Individuation is not an act of sorting through pre-constituted atomized components, but is an act of borrowing from a *qualitative multiplicity* that is entirely *indefinite* prior to its incorporation by a schematic act of the mind.

This leads Joachim Seyppel (1956: 506) to note the similarity between Heidegger and Bergson: “For *durée* and *Zeitlichkeit* seem to have certain things in common, and both seem to be very different from any other time concept.” However, whereas Heidegger’s concern is with the ontological opening of an authentic future, a future beyond the inauthentic repetition of ontic *presents*, Bergson’s duration emphasizes the *past* in its capacity to condition action through habits and recollections (Restrepo 2015: 60). In order to better grasp this, we need to elaborate Bergson’s conceptions of both space and time.

### 1.1.3 Duration: Space as Quantitative Multiplicity

Of central importance in Bergson’s first major publication was a defense of the “reality of human freedom by an analysis of our immediate experience of time” (Mullarkey 1999: 21). Published in the English as *Time and Free Will*, Bergson sought to validate the substantive reality of the emergence of radically new events. Duration (*durée*) is his word for this qualitative, heterogenous dynamism that is entirely devoid of predictability or linear determinism: “[Even] the simplest psychic elements possess a personality and a life of their own, however superficial they may be; they are in a constant state of becoming, and the same feeling, by the mere fact of being repeated, is a new feeling” (Bergson 2001: 200). It is the emphasis on emergence, freedom, and novelty that drive his investigation into time and space.

If time is *qualitative, heterogenous, and dynamic*, space, for Bergson, is *quantitative, homogenous, and static*. In fact, space is precisely what is constructed by thought in an age when the desire is to control nature. It is this desire to control that highlights the political stakes of Bergson’s philosophy (Canales 2005: 1169). For him, quantitative thinking constructs the world as though it were a machine that can be quantified, predicted, and then controlled. This domestication of reality is not only contrary to the ostensible methodological precepts of science, but the fallout results in humanity losing its liberty through mechanicism. It is *number* that passes over *lived duration* in a synthesis that *homogenizes difference*.

As Mark Sinclair notes, this numerical process is an abstract spatializing of duration. He says, let's suppose we want to count sheep:

In order to count these units in, say, a flock of sheep, we ignore the individual differences of the sheep and take into account only what is common to them all. The units of a number must in some way be identical, for otherwise there would be nothing that could be added up to make a sum. If we focus on the differences ("Flossy", "Molly", ...), we are "enumerating", like the army sergeant calling the roll ("Smith", "Sir!", "Jones", "Sir!", ...), rather than counting, for we do not arrive at a sum. To do that, Bergson argues, each must be considered simultaneously, and thus as juxtaposed in a certain space, such as a pen. But if counting the sheep requires that their individual differences are ignored, they must be distinct in the places they occupy in the pen, for otherwise, if they were identical in all other ways, they would all merge into one. Counting physical things, then, requires the simultaneous presence of those things differentiated by their position in space (Sinclair 2019: 41).

This process of spatializing constructs a homogenous, empty milieu whose parts are all identical as contiguous relations, and which are only differentiated by their spatial positions. Further, the qualitative characteristic that results from spatializing is that objects become purely fungible in character, as they lose their qualitative peculiarities. Their meaning is reduced to that which is incorporated into the deterministic logic of the numerical system. What is more, the common claim that numerical relations are temporal abides, offering a theory for self-subjection to the rule of number and the dominance of the homogeneity of space. All too eager to calculate reality, thought employs this numerical logic and reproduces the order of homogeneity, ironically, in the name of freedom and progress. So, what Bergson (2001: 98) offers as a theory of space in *Time and Free Will* is a trespass as a tendency towards homogeneity "upon the field of pure consciousness."

However, in *Matter and Memory*, his conceptions expand. The binary between time as pure *durée* and space as its enclosure is reworked to include a conception of homogenous time and heterogenous space. Homogenous time is consonant with homogenous space in that both are abstractions that orient consciousness in the world. They are the "diagrammatic design of our eventual action upon matter." Therefore, they serve a purpose in fixing "starting points for our operation" (Bergson 1991: 211).

However, movement precedes space and thus bespeaks of a real space, or *heterogenous space*. This space is not the absolute space of Newton, nor the relative world apparatus of Einstein, but speaks of a world wholly in process. Changes in place do not move through a pre-constituted field, nor amongst pre-constituted entities. Instead, real space is qualitatively multiple. The implication here is that for something to change place it will also change form. This is because “a change in quantity at one level is also a change in quality at another” (Mullarkey 1999: 28).

It is here that we can detect a cross-resonance with Deleuze. For, Bergson’s claim is that the denial of freedom, the erection of determinacy, *the confusion between time and space* really concerns “one type of difference of the simplest sort possible: quantitative difference, or the repetition of the same” (Mullarkey 1999: 34). It is this concern with difference and repetition that Deleuze will develop more fully. However, before we give ourselves over to Deleuze, we must spend a moment providing the substantive account of time as *qualitative multiplicity* in Bergson. This concept provides an account for precisely how the confusion between time and space is avoided, as well as prefigures Deleuze’s elaboration of temporal difference that is crucial in our efforts to think in terms of techno-temporality.

#### 1.1.4 Duration: Time as Qualitative Multiplicity

Writing in *Creative Evolution*, Bergson spends great time and detail arguing how there is no sense in which mathematical order is inventive. It cannot “introduce an atom of novelty into the world” (Bergson 1998: 217). In fact, this order, and the intellectual logic that corresponds to it, tendentially interrupts the potential creative act, and leads to inflexible determinism. However, despite this tendency, creation is never fully exhausted. If it were, and if creation were fully relaxed into homogenous space, there would be neither memory nor will: “[It] would have to be pure space and step out of duration” (Bergson 1998: 218). Not only is this undesirable but it is also impossible, by the very nature of *durée* itself. This is because, for Bergson (1998: 341), “*Time is invention or it is nothing at all* [emphasis in original].”

The most complete definition of duration is given in Bergson’s *Matter and Memory*:

The essence of time is that it goes by; time already gone by is the past, and we call the present the instant in which it goes by. But there can be no question here of a mathematical instant. No doubt there is an ideal present – a pure conception, the indivisible limit which separates past from future. But the real, concrete, live

present – that of which I speak when I speak of my present perception – that present necessarily occupies a duration. When is the duration placed? Is it on the hither or on the further side of the mathematical point which I determine ideally when I think of the present instant? Quite evidently, it is both on this side and on that; and what I call ‘my present’ has one foot in my past and another in my future. In my past, first, because ‘the moment in which I am speaking is already far from me’; in my future, next, because this moment is impending over the future: it is to future that I am tending, and could I fix this indivisible present, this infinitesimal element of the curve of time, it is the direction of the future that it would indicate. The psychical state, then, that I call ‘my present’ must be both a perception of the immediate past and a determination of the immediate future (Bergson 1991: 177).

We will see how Deleuze handles what he calls the four paradoxes of Bergson’s conception of duration below. For now, what we need to emphasize is that duration speaks of an interpenetration of time dimensions, or of a folding of past, present, and future. Emily Thomas speaks of this folding when she notes how, “When we listen to music, a C note can melt into a D note in such a way that we cannot mark one note off from one another. The past and present notes form an organic whole that cannot be divided into units... Pure time is melting, changing, motion” (Thomas, E. 2021: 7).

This melting, changing, motion of *durée* is prior to form, prior to space, prior to determination. It is the pure indeterminacy of processual reality. If homogenous time and space construct an artifice, pure duration is as real as it gets. And it can’t be emphasized enough, but the difference between duration and its projection into space (and homogenous time) is qualitative, not quantitative. This is because they are characterized by two different senses of multiplicity. Space is a *quantitative* multiplicity, while duration/ time is *qualitative* multiplicity.

If we think of a multiple that can be counted, reckoned, for example, we might consider Luca Pacioli’s method of double-entry bookkeeping as a paradigmatic example of a form of reckoning, accounting for multiples (Gleeson-White 2011). With double-entry bookkeeping, the form of the multiple is *quantitative*. It deals in units of measure that are input into the two sides: credit and debit. A form of memory is recorded, but only in quantitative terms. The system *reduces* all economic activities to the measure of capital assets, profits and losses. This does not mean that there is no narrative to explore, as Pacioli’s system historically calls for extensive journaling, detailing business interaction in qualitative terms (Gleeson-White 2011). The goal, however, of these interactions is to

ultimately create a simple system of reckoning in purely quantitative terms, which reduces the possible qualitative value of any socio-economic engagement into pure numerical operation.

Qualitative multiplicity, by contrast, that of pure duration, is irreducible to numerical operation. In fact, in Bergsonian terms, it is the driving motor that impels the process that is codified by the double-entry system. If it were not, there would be no memory or will to drive any business interaction. The paradox comes when that impelling force is codified into the system and thereby quantified but without full relaxation of the creative force, which leaves a perpetual remainder and potency for further novelty to emerge (which will then be quite immediately codified by the numerical operations of the double-entry system). Be that as it may, what matters here is emphasizing that qualitative multiplicity is a processual excess that is beyond codification.

It is here that we see another similarity with Heidegger. As we noted above, Heidegger's project is explicitly ontological, whereas Bergson's is often conceived as psychological, even mystical. And while there is clearly a sense in which the axiomatic nature of *durée* is psychological and metaphysical, we also need to note that Bergson's project is also very intentionally *ontological*. As Heidegger's concern for the future pertained to an eventual opening for flowers to bloom in the existential analytic of Dasein's 'time of thinking', Bergson's *durée as qualitative multiplicity* is a "higher-order difference which separates and subsumes quality and quantity, one which cannot be conceived in terms of either and yet which generates both" (Mullarkey 1999: 209). This is because qualitative multiplicity is a multiple that is not understood in relation to identity but as thinking *difference as difference*. And as we will now explore, for Bergson, as in Deleuze's difference and repetition, there is excess, difference-in-itself, emergence, and intensive variation which produces shifts in quantitative and qualitative registers.

## 1.2 From Bergson to Deleuze

### 1.2.1 Deleuze's Bergsonism: A Critique of the Possible

Since, as we said in the previous section, Heidegger's conception of temporality is primarily concerned with the ontological opening of an authentic future, and since Bergson's use of *durée* privileges the past in order to condition action through habits and recollections, we can understand Deleuze as seeking to synthesize these approaches. It is precisely Heidegger's prompting in *Difference and Identity* to think *difference as*

*difference* that frames how we understand Deleuze's project, particularly in *Difference and Repetition*.

Further, if *Being and Time* was an investigation into the ontological source, and if time is the historical motor that orients Dasein to the source, then we can see in Deleuze's *Difference and Repetition* an effort to expand on this project. Thus *Being* is replaced with *Difference*, and *Time* is replaced by *Repetition*; not simply as a retread of themes, but more inventively by transforming the very adequacy of Heideggerian phenomenology in its core. *Difference and Repetition* is, then, best understood as a post-phenomenological work, in the sense that it is both against and beyond the phenomenological project. It is *against* in that it directly contests the sufficiency of phenomenology's philosophical decision, characterized by the prioritization of consciousness; and it is *beyond* in that it is an intentionally speculative project.

Beginning with Deleuze's reading of Bergson, we can first remark that the privileging of the past does not mean that present and future are less than valuable for understanding time's folding and unfolding. It means that in order to understand duration's flow, we must understand how the past *virtually* conditions the flow.

The past and the present do not denote two successive moments, but two elements which coexist: One is the present, which does not cease to pass, and the other is the past, which does not cease to be but through which all presents pass... The past does not follow the present, but on the contrary, is presupposed by it as the pure condition without which it would not pass (Deleuze 1991: 59).

We can think of this past as a type of memory. It is the past into which the present passes. But this is not merely a psychological memory. It is ontological. In *Matter and Memory*, Bergson (1991) speaks of the *pure past* to designate this ontological dimension of time. This past is virtual and persisting – or better, *in*-sisting. It is what conditions the actual. However, this conditioning does not bear the relations we have identified in Aristotelean, arborescent terms. That is, the relation between pure past, as virtual, and actual, as present-passing, is not that between the possible and its realization. This is crucial on multiple fronts.

As was noted in the Introduction, the possible-realization relationship of Aristotle is rooted in a conception of *archē*, one that follows the causal structure proceeding from pre-constituted essence of a formal cause to the putative concretization via efficient and material realization. This teleological journey conceives of time as a sequence of instants

that take on new properties in their progress towards realization, which is meant to be the fulfillment of that which was established in the formal principle of the possible. Ironically, for Bergson, such a realization is not, in fact, a movement of time. As Deleuze (1991) demonstrates, the possible-realized schema thinks of the real as being somehow more 'real' than the possible – that is, it is meant to be the possible but with existence added to it. But, in fact, what takes place is that the process of realization is subject to two rules: 1) resemblance and 2) limitation.

With the rule of *resemblance*, realization is the process of the real coming to resemble the possible as an *image* of that which has already been given by the possible, in the first place. That is, the possible is the principle, the *archē*, that establishes the very set of ways realization *can and must* take place.

The rule of *limitation*, then, attests to the fact that some possible options are realized while others are not. This is a process of discounting, whereby the rule of limitation attests to the selection of certain possibles to be realized to the exclusion of others. As Dan Smith (2009: 36) explains, there is a slight of hand in this act of discounting: “[I]f the real is supposed to resemble the possible, is it not because we have retrospectively or retroactively ‘projected’ a fictitious image of the real back into the possible? In fact, it is not the real that resembles the possible, it is the possible that resembles the real.” To this point, in *Logic of Sense*, Deleuze (1990: 105) writes, “[The] error of all determinations of the transcendental as consciousness is to conceive of the transcendental in the image and resemblance of what it is supposed to found.”

Not only, therefore, is the possible-realized schema problematized by Bergson and Deleuze at an abstract level, but even more important for our study is that the possible-real, insofar as it operates via a logic of (formal) essence preceding (concrete) existence, operates via a *decision* that sets that conditions for inclusion and exclusion. Here we are brought back before the Laruellian principle of sufficiency that we presented in the Introduction. The assumption is that the relation between the possible and the realized is sufficient for explaining the formal relations between thought and being. However, what is ignored is the fact of the decision *in the first instance* that cuts off the schema from the Real as an *a priori* orientation. The transcendental operation that corresponds to the proliferation of the possible-real schema is, therefore, one beholden to a *first principle*, an *archē*, a judgment that sets the conditions under which thought can think in the first place. In Bergsonian terms, this leads to a suppression of the novel creativity of *durée* as such; for Deleuze, such thinking cuts off thought from its speculative potency. This is why,



for Deleuze (1991), *the possible is a false problem*. It is to this claim that we now turn in order clear the ground for a substantive articulation of Deleuze's theory of time.

Thus, before looking at Deleuze's inventive conception of time, we need to address aporia that emerge in the further problematization of the possible. If we ought not speak in terms of the possible-realized schema, how are we to conceive of the relation between past as condition and present-as-passing? And further, what of the future? To address these aporia, we turn to a brief exposition of Deleuze's deployment of the virtual-actual speculative dynamic.

### **1.3 Deleuze: The Virtual-Actual Speculative Dynamic**

#### *1.3.1 From Possible-Real to Virtual-Actual*

As Todd May (2005: 48) tells us, "The distinction between the virtual and the actual is not the same as the distinction between the possible and the real." In the possible-real schema, the possible does not exist; it is not real. This tautology reveals something fundamental: the relation between the possible and the real is one between immateriality and materiality, with the ostensible difference being that the immaterial is non-existent, while the material is just the immaterial with existence added as a supplement.

By contrast, the virtual is *real*. But, *how* is the question? For Deleuze (1994: 208), "The virtual is real in so far as it is virtual." Whereas the possible is realized through a decision that selects that which is included and that which is excluded by its very founding principle, the virtual does not have anything added to it in order for it to become real (May 2005: 48). Claire Colebrook provides an extended concrete example to help us understand:

Let us say that we have a being—such as human life—and it has x number of possible developments. These developments are selected or decided according to the demands of the already given world. If this were the case, then future would be the playing out of so many given possibilities, some of which would take place while others would not. In this case the possible is what we trace back from the [realized]; we see humans in their present-day form and assess the possibility and probability of their evolutionary development. On such an understanding, both the past and the future would be explained from the [realized] present. The past would be all that might have occurred, while the future would be a selection from a static

set of already selected possibilities—what might occur. If, however, we were to think of the positive and open character of the virtual, it would neither be based on the [realized] nor would it be already given. The virtual would be as much open to revision or transformation as the actual, such that each time a possibility passed into actuality, the whole domain of the possible would be re-figured (Colebrook 2002: 168-169).

To summarize the last line, and because we aren't entirely satisfied with the verbiage, even the very conception of that which is potential is perpetually reconfigured in the virtual-actual speculative dynamic. So, rather than seeing the world in terms of concept and predicate, the *virtual-actual speculative dynamic* problematizes the very structure of thought that derives from the *archē* of the possible-realized schema. This is because the virtual is the process of problematization *per se*. This means that thought does not proceed by serial construction, but *via an encounter with that which shocks thought* (Deleuze 1994). And that which shocks thought is never *merely* ideal, as though it required an agent to produce the effect. Rather, this shock occurs via a virtual relation of what Deleuze (1994: 189-192) calls “ideal events.” These events form a structure that he conceives of as creating a “theatre of multiplicities” (Deleuze 1994: 192). In this theatre, there is no identity, author, representation, etc to be taken up as an object for creation. Instead, this ‘theatre’ is one of problems forever open to questions without pre-carved paths for solution-based investigation. This is why time is crucial for Deleuze, because it is precisely time that leads us to run into new virtual problems.

While many readers of Deleuze have employed the term ‘virtual’ to fields as varied as biology, physics, and psychology, the tendency here is to erect a metaphysical ground that stands behind Deleuze’s philosophy of immanence through the construction of a ‘Virtualism’.<sup>12</sup> Keith Ansell Pearson (1999: 37-38), for example, claims that “the virtual is only real in so far as it is actualized.” This implies that there is a relation of dependency between virtual and actual. And James Williams (2013: 13) teeters into Anti-Actualism by claiming that actual objects are disassociated from the processes that bring them about such that our maxim should be “leave all actual things behind (forget everything).”

To the other extreme, John Mullarkey (2006: 28) writes that “the actual and the virtual are, if not actually identical, at least virtually so... ‘The virtual’ exists only virtually within a virtual ontology, and by that I mean that it is a performative concept, it is

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<sup>12</sup> See, for instance, the work of Keith Ansell Pearson, Manuel DeLanda, and Brian Massumi.

produced from our point of view or frame of reference... It is a frame or system of reference for 'seeing as', for taking up the actual world." He continues by remarking how

instead of a virtual infinite, we're offered the auto-poetic proliferation of actualities. In place of even a groundless ground comes an 'indefinite' and 'universal ungrounding' (as Deleuze himself puts it), that is, the discovery of a ground behind every other ground. Not one plane of immanence but many, each with their own respective, but always relative, outside (2006: 34-35).

Mullarkey's position advocates for an "indefinite generation of the actual" in contradistinction to the Virtualisms mentioned just prior. However, while the paradox might persist, we must think of the *virtual-actual speculative dynamic* without privileging either, whether that be in metaphysical (Virtualism) or performative terms (Actualism).

Substantively, then, we must articulate the ideal multiplicity of the virtual, for Deleuze, as being *evental and relational*. In order to think the evental and relational character of virtuality we must think of thought as encountering the virtual as a differential structure that is not dependent on an agent. Deleuze does this by looking to differential calculus.

For Deleuze, differential calculus is useful as an aperture onto the nature of reality (Deleuze 1994). *Integral calculus* operates by the *method of exhaustion*: it gives us a means of summing up an infinite number of infinitely small quantities to give us a finite quantity. *Differential calculus* is distinguished by positing infinitely small quantities, and it is here that we encounter the virtual field as such. Daniel W. Smith (2009: 39) explains:

Put simply, the symbol of difference for Deleuze is not "not-A" (as in Hegel, for whom difference is negation), but rather the differential "dx." Rather than having the faculties converge on a common project, each faculty is violently compelled to confront the differential limit that is peculiar to it – a limit that is ungraspable from the point of view of its empirical exercise, but which it alone is able to grasp from the point of view of its transcendental exercise: something unimaginable in the imagination, something unrememberable in memory, something unthinkable in thought, and so on. There is indeed a "critical point," a focus or horizon at which thinking, imagining, remembering, speaking, sensing, and so forth are the same thing, but what this "thing" affirms is not the convergence of the faculties in a

common sense, but rather a violent divergence of the faculties in their transcendental and disjoint exercise: a para-sense rather than a common sense.

To understand this we can consider how there is always a singular point that marks the passage of experience for human beings: there is a singular point at which frustration becomes apathy, or when confusion becomes understanding, etc. This qualitative shift in states is hard to identify. Normally, differential equations are viewed (post-Leibniz and 19th century mathematics) as secondary on the basis of the function: start with function and then differentiate. But recent interventions declare that functions can be defined in terms of differentials: differentials can be fundamental. This takes the form of a process philosophy of relations. As Deleuze (1994: 172) states, “[Each] term exists absolutely only in relation to the other.” This is a rejection of a *partes extra partes* conception of relational reality, in favor of *thinking difference-in-itself as primary*. This is what guarantees indetermination in the actualization of the virtual. That is, actualization is the process of the qualitative state-change just discussed. It is the singular point that marks the passage of movement in the differential field.

However, the expression of the actual is not a manifestation of a sequential possible. Rather, how the actual is expressed is *via the dramatization of the spatio-temporal processes of the Three Syntheses of Time*. James Williams (2005: 78) raises important questions regarding this *virtual-actual speculative dynamic* that will help us clarify precisely *how* this dramatization of the spatio-temporal processes of Three Syntheses of Time takes place: “How do the virtual and the actual interact? How do they maintain their distinction, if they do interact? Is not interaction the place to define a higher unity that denies the priority of the initial distinction?”

In order to adequately address these questions, we will investigate The Three Syntheses of Time below. For now, and until then, we can say that we need to think of the virtual as a static, differential structure. That is, it *does nothing*. This is why we cannot confuse Deleuze’s virtual with Bergson’s *élan vital*. However, with that said, the obvious problem raised from this claim becomes: if the virtual does nothing, how is the virtual incarnated? Or, perhaps more pertinent for political economic concerns, how does the virtual field come to bear on us? The answer has to do with Deleuze’s conception of *implicated form and intensity*.

### 1.3.2 Implicated Form: Intensive Variation v. Extensional Quantification

In Chapter 5 of *Difference and Repetition*, Deleuze introduces his invaluable term *intensity*. Intensity is the answer to the question, ‘how is the virtual incarnated?’ In one sense, intensity is what constitutes reality. Intensity is what gives rise to extended and qualified things. For Bergson, there is a distinction between the *qualitative multiplicity* of duration and the *quantity* of spatialization. The residual dualism between *durée* as *élan vital* and its projection in the quantified mathematical order of homogenous space (and homogenous time) is what leads Deleuze to consider quantification in intensive terms, rather than merely extensive terms. Where Bergson only thought of quantification as *extensional quantification*, intensity is Deleuze’s introduction of *intensive quantification*, or what we can also call *intensive variation* (Williams 2016).

For Deleuze, intensity is quantitative *but also* heterogeneous. It is defined by *implicated form*. This means that intensity 1) is irreducibly unequal, 2) integrally affirmative of difference, and 3) implicated quantity, which brings points 1 and 2 together.

For example, there are mathematical measures that are defined by implicated quantity (Roffe 2015; 2020b). Take temperature: thirty degrees is not half of sixty degrees; one doesn’t half sixty degrees in order to reach thirty degrees. Only a process of lowering the synthetic process will decrease the temperature. Similarly, speed: when we speed up or slow down, we move through a process of varying, synthetic, intensive quantities. We also see this in ordinality: the relation between gaps in ordinality are different at each interval, signaling an intrinsic inequality between gaps and positions of ordinality; therefore, number is pure intensive inequality in terms of ordinality. Intensity, thus, must be understood as a range of capacities such that *a division involves a change in kind*. This is because intensive quantities include quantities of lesser rank – enveloping enveloped (Deleuze 1994: 311-312). This is what is meant by *implicated form* (Roffe 2015; 2020b).

Extended quantities, on the other hand, are partitive, divisible, and homogenous. We can think of length, height, and cardinality as extensional. Length, for example, can be divided and then recombined. When we cut a string in half we do not fundamentally alter the scale and frame of measure. As Jon Roffe (2015: 66) explains, “extended quantities can enter into additive relations according to their kind, due to the fact that all added components are homogenous in character. Just as a metre of string can be halved, the resulting two 50 centimetre lengths, when placed contiguously, return to us the metre that they were.” This shows that there is no common measure for intensive quantities (i.e. it is irreducibly unequal), whereas for extensional quantity there is.

The last thing intensive quantity teaches us about the *virtual-actual speculative dynamic* is that intensity is “the reason behind qualitative diversity” (Deleuze 1994: 71). This is because there is difference behind everything, but “behind difference there is nothing” (Deleuze 1994: 72). As Mary-Beth Mader states, for Deleuze, it is intensity “all the way down” (Mader 2008 : 3). This attests to the conditions of movement, of the flash of phenomena, and of the emergence of signs (Williams 2016). However, intensity, as the reason behind qualitative diversity, is not the substance of movement, nor the flash of phenomena, nor the emergence of signs. Intensity is a variation of difference in itself. But intensive quantity is not movement through determinate (i.e. actual) entities. Instead there is an illusion that is tied to intensive quantities that cancels intensity in the translation of quality. This is what necessitates his method, *transcendental empiricism*. Empiricism, alone, yields a confusion regarding what is perceived; transcendental philosophy formally forecloses difference. Transcendental empiricism, by contrast, endeavors to “apprehend directly in the sensible that which can only be sensed, the very being of the sensible: difference, potential difference, and difference in intensity [emphasis in original]” (Deleuze 1994: 71). Aware that this is still quite esoteric, we now discuss Deleuze’s Three Syntheses of Time, which will help flesh out everything we have discussed until now.

## **1.4 Deleuze: The Three Syntheses of Time**

### *1.4.1 Introducing Deleuze’s Three Syntheses of Time*

To begin, what does Deleuze mean by *synthesis*? As James Williams (2011: 10) states, “In *Difference and Repetition*, time is defined through three syntheses, where each of the three syntheses is a prior process in relation to the other times as dimensions.” These three syntheses are the familiar past, present, and future. However, they are not different points of time on a timeline, but three irreducible synthetic processes that together compose time as such. They can be investigated individually, but the difficulty comes in that each – as synthesis – implicates, and is implicated by, the other syntheses. This is what Williams means when he says that the three syntheses are each ‘a prior process in relation to the other times as dimensions.’

Second, they are syntheses of time because they produce time; it is not already out there (a la Newton, Kant, Einstein, etc). What is more, they are passive; that is, there is no agent responsible for them. Human consciousness, for example, is not responsible for the organization of time. Contra the Heideggerian emphasis on Dasein’s orientation

towards death that straddles the dimensions of time, for Deleuze, there is no prioritization of an active agent that would integrate time outfrom its differential dimensionality.

Third, the syntheses are *repetitions*. However, we need to hold firm to the *virtual-actual speculative dynamic* and all it entails, so that we do not introduce relations between identities in our sense of repetition. What repeats is not a pattern or sequence of identifiable entities. When we think this way, we foreclose difference in the concept, in the principle, the *archē*, and we fail to adequately comprehend repetition on its own terms, as inhabited by difference.

And last, Deleuze shifts around the standard order of the modalities of time. As such, we will follow suit and speak of the syntheses of 1) present, 2) past, and 3) future.

#### 1.4.2 Present: Habit, or the First Synthesis of Time

*Habit* is the term Deleuze employs to characterize the synthesis of the present. We can say: *habit constitutes the present*. Remember, the syntheses of time are *generative*, and as such they must always be conceived as being productive of time. In fact, to speak of time is already a habitual process of synthesis. This relates to the tendency of habit towards contraction. This is because habit is the synthesis of bringing together. Deleuze derives this sense from Hume, for whom habit was the activity of association synthesized in the mind of the observer. As stated just above, however, Deleuze expels the active agent from his passive syntheses and offers a sense of habit that is not reducible to human experience, but that announces every connection. *Contraction* is the quality of this synthesis. There is a contraction of disconnected things into habitual organization. What, though, is contracted? *Intensive quantities*.

Deleuze (1994) speaks of the present that is produced by the habit which contracts intensive quantities as proto-subjective. Prior to the emergence of active agency, there are many proto-subjects which capture other presents, each of which are habitual syntheses of intensive variation. These proto-subjects are not individual selves, but *dividuals*. They are complex contractions of many processes and syntheses; and as such, they are not fully determined objects. This produces an elastic present, one characterized by fatigue, as that which is contracted is a relaxation of the differential virtual field. However, this relaxation is not the activity of agency or a force of any kind. Contraction is not a vital activity. It is a purely material contemplation. Of course, we must not think of contemplation as rational judgement. To do so, would be posit a pre-constituted and determinate subject that contemplates. Rather, contemplation, for Deleuze, it is a *pre-subjective ontological event*.

Williams (2011) speaks of the repeated washes of water that contemplate pebbles on a shoreline; and how the pebbles, likewise, contemplate sea, air, shells, etc. Deleuze is clear that “this is no mystical or barbaric hypothesis.” Instead, he declares, “Habit draws something new from repetition: difference” (Deleuze 1994: 73). Williams (2011: 40) explains that this is not a contraction in the sense of “a passage from a dilated to a contracted state, but a synthesis of events as differential, an ongoing variation of intensity of becoming – and not a difference between two states.” Thus, contemplation does not integrate into a whole, or pass from one state to another, but passively synthesizes multiplicities through selection in its material relations. This is why Mullarkey refers to the *virtual-actual speculative dynamic* as performative. However, the selection, the ‘performative’ act, is not from a single source that contracts, but is the passive incarnation of many processes within processes – enveloping enveloped.

That said, if habit is the contraction of intensive quantities as processes that constitute the present, but yet there is no active agent performing the selection, how can anything *happen*? Deleuze is eminently concerned with novelty and freedom, but, with the theory of habit alone, we only have a very speculative account of the repetition of differential relations that passively synthesize, at best, constructing relations between proto-subjects. This is because habit, as synthesis, only reproduces the present. It is the second synthesis of time, the pure past, that indicates the first steps towards a time that passes. For, it is the past in which the present passes. This is where Bergson reenters the frame and gives Deleuze a way to think the grounds of habit.

#### *1.4.3 Past: Pure Past, or the Second Synthesis of Time*

Recall the above discussion of the past, for Bergson, as memory. Similarly, for Deleuze, the pure past grounds habit by creating the conditions for it to pass, and then serves at that into which the present passes. This creates four interpenetrating paradoxes: 1) paradox of the leap, 2) paradox of being, 3) paradox of coexistence, and 4) paradox of psychic repetition (Deleuze 1991). To summarize how the four paradoxes interpenetrate: with the paradox of the leap, we are placed, oriented in the past; but this orientation in the past is never present, and so the paradox of Being speaks of the difference in kind between the past that orients the present and the present as such, severing our very positionality; further, the past coexists with the present and grounds the present as the substantial temporal ground; and last, this coexistence is of the entirety of the past, contracted at varying degrees of intensity (Roffe 2020b: 85-88).



This results in the past being that which orients us in the world but which is never itself present. The pure past grounds the present by presenting a general study of repetition that is not reducible to active memory or linear causality. Neither is it a storehouse where presents are accumulated. The pure past is the virtual condition of habit that constitutes identity in a circular relation. That is, the synthesis of the pure past, when taken into consideration with the synthesis of habit, grounds representation by centripetally pulling towards *the tendency of identity and agency*. Said otherwise,

1. intensive variation explains the stuff of which habit is concerned, and
2. the virtual field of difference is the stuff of which pure past is concerned,
3. and by synthesizing contraction (for habit) and the four paradoxes (for the pure past), both habit and pure past form a synthetic disjunction that tends towards the construction of static forms, concepts, identities, abstractions.

It is then incumbent upon another synthesis to introduce pure novelty into the interpenetrating synthetic processes. For, if there were only habit and its contractions and pure past and its insistence, then there would be no real sense in which we could speak of the future, and time would only be a representational concept. In order to be capable of thought beyond representation, there must be some sense in which novelty is understood. Otherwise, there would be mere, endless repetition of the same represented forms. It is in Nietzsche's concept of the eternal return that Deleuze finds this novelty.

#### *1.4.4 Future: Eternal Return of Difference, or the Third Synthesis of Time*

For Deleuze, novelty does not emerge *ex nihilo*. Neither does it come from somewhere, such as an open horizon; this would presuppose something that is then re-presented; it would subordinate repetition to a prior identity. To think repetition from difference, therefore, novelty must be a repetition that is not pre-scribed in representational terms. Deleuze (1994: 90) asserts, "We produce something new only on condition that we repeat." Thus, in order for there be a genuine production of the "absolutely new itself," Deleuze offers a theory of a "centrifugal force" that "expels" the tendencies of habit and pure past to construct identities via their centripetal contraction and insistence. As Daniel Colucciello Barber (2009: 134) states, "Memory and habit... are necessary preliminaries. They prepare the unconditioned, but are expelled by what they prepare."

It is only by the synthesis of eternal return that Deleuze's theory of time comes together, by bringing together *difference* and *repetition*. That is, we can understand each synthesis as a process only by understanding how they mutually inform one another. The third synthesis receives the most attention because of its explicit prompt towards novelty. And those with concerns for breaking cycles of repetitive oppression and exploitation can draw rhetorical resources by appeals to his unwavering insistence on the production of the new. However, the third synthesis is only understandable in its relation with the other two syntheses. What is more, to separate the third synthesis is to denude it of its power as a centrifugal force, which pulses the material of the centripetal force of habit and pure past.

Still, there is something unique to the third synthesis that demands sustained contemplation. It is this: *eternal return is pure empty form* (Deleuze 1994: 88, 91, 112, 122). This pure and empty form is what distinguishes Deleuze's speculative philosophy of time from onto-theology, Kantian and post-Kantian transcendental philosophy, scientific absolutism, etc; and it is also what sets the frames for thinking beyond political conceptions that inherit the legacy of theology, that presume the sufficiency of the individual, or that only offer conceptions of an active subject. For Deleuze (1994: 87), the pure and empty form of time signifies "indissolubly the death of God, the fractured I and the passive self." Thus, what occurs in the future is precisely *nothing*. It is a pure, empty form imposed on the first two syntheses, the latter which become subject to it, in the synthesis.

Deleuze's philosophy of time, here, is now also differentiated most pointedly from the Bergsonian influence, in that time is not in any way subordinated to movement (cf Bergson's *durée* or *élan vital*). The future, for Deleuze, is an unavoidable cut, that undoes the circle of habit and pure past in the tendency towards identity. It is rupture, break. And it is this cut that is the guarantee that there is a next, always a next. For, time guarantees that there will always be another; destroying the status quo, the social order, etc. It guarantees the death of every god, every ruler, every norm. The third synthesis is the *guarantee of the death of identity* (Roffe 2020b: 238ff). And this is because the content of the future is pure difference-in-itself. Difference is what repeats.

Time, therefore imposes difference; it is a repetition that produces difference as such. In Deleuze's (1994: 122) words, the pure and empty form of time is the ultimate synthesis "of the death instinct which leads to the eternity of the return in time." The third synthesis, therefore, presents us with the complete picture of Deleuze's theory of time, insofar as we carry with us the first and second as subjected to it and constitutive with it,

as *Death Drive*. If the Reality Principle and The Pleasure Principle designate the persistent desire towards satisfaction, the Death Drive is the failure of mastery in any and every impulse for satisfaction. Eternal return, thus, speaks of *repetition for itself*.

However, eternal return is not only understood as cut but also as ordering. In what sense? In the sense that every cut is an event, and every event is an opening for assembly and seriation (Williams 2011: 94). To speak in terms that might be more familiar, if the cut can be seen as *deterritorialization*, eternal return, as order, maps onto *reterritorialization*. Once again, however, this must not be understood in empirical terms. We are still dealing with a high degree of speculation. But this is intentional, for Deleuze. As Eric Alliez (1997: 81) reminds us: “[The] speculative radicality of Deleuzian ontology determines a philosophical materialism that is at last revolutionary, where the concept is valid only insofar as it enables, it enables *us to liberate immanence from all the limits still imposed on it by Capital*.” That is, the essentially revolutionary ideas of Deleuze break free from capital and the conditions of capitalist reproduction. But it is not simply chaos that breaks free. Deleuze is not advocating a theoretical basis for political anarchy, nor even an Accelerationism that is primarily concerned with intensified expressions of negative liberty. Rather, social order has a place, but not an absolute one; not one *from which* we ought to think. Instead, Deleuze grounds a form of thinking that accepts the reality of social production under capital, but seeks to theorize forms of thought that *insist* as not merely reproduced under these conditions.

Seen from this perspective, the cut opens the space for assembly and seriation but in ways that guarantee that assembly and serial repetition are always novel. There is never a pure repetition of the same, even under capital – there is no hegemony (Beasley-Murray 2010). This is why it is necessary to extract and extend the cut, so that “a new Real will come out beyond the actual and virtual” (Deleuze 1989: 86).

Deleuze (1989: 86) provocatively proclaims that the “indiscernibility of the actual and the virtual” is the condition that “creates [the] future as a bursting forth of life.” This matters most of all for Deleuze, for he is primarily concerned with providing a genetic account for our understandings and our misunderstandings. His philosophy of time is his way of thinking through the event as the return of difference, which guarantees the death of identity. Later in his career, he remarked that in everything he ever wrote his concern was only to “discover the nature of events” because he believed the event is the only concept “capable of ousting the verb ‘to be’” (Deleuze 1995: 141). We can interpret this to mean that, above all else, what concerns Deleuze is elaborating the conditions for genuine thought as the mobility of thought, out from underneath the tendencies towards

static thought. This latter form of static thought is what we might also call knowledge. It is what Deleuze calls *The Image of Thought*.

## 1.5 Deleuze: The Dogmatic and Moral Image of Thought

### 1.5.1 The Dogmatic and Moral Image of Thought: Thought v. Knowledge

The contention of this project is that one can only understand the tendencies towards The Dogmatic and Moral Image of Thought when one first understands the Three Syntheses of Time. This is because Deleuze's elaboration and critique of The Dogmatic and Moral Image are aimed at its tendency towards representation, as it blocks access to difference-in-itself.

There are four settings where difference is obscured: 1) conceptually (cf Hegel); 2) phenomenologically (ex. pattern recognition), 3) categorically/logically (cf Aristotle), and 4) difference as only being between pre-constituted identities (cf Empiricism). The simplest way the image of thought obscures, across all four settings, is in the form of the *everybody knows* (Deleuze 1994). With the 'everybody knows', thought is presupposed to simply know in a pre-philosophical or pre-conceptual manner something or other. Everybody simply knows the thing. It is uncontested. And yet, for Deleuze, this tendency produces an Image of Thought that actually curtails *thought* in the name of mere *knowledge-production*. How? In six ways:

1. **Good sense:** the thinker has good will, and thought has a good nature. There is an affinity for the true; a goodness of thought itself. One formally possesses the true and materially wants it. Because 'everybody knows', therefore, if you don't accept this, or if you are an aberration, you are naturally, philosophical, and *morally* off base. This moral element is key for our present study.
2. **Common sense:** presumes that thought is and ought to be a convergence of thought, a unified experience of an object of thought.
3. **Recognition:** postulates that thought is modeled on recognizing; that everything in front of us is capable of being re-cognized.
4. **The goodness of thought:** this is the claim that error is always the cause of something outside. Nothing goes wrong in thought itself.

5. **Culture:** there is a social aspect to the image of thought, via social learning; this is an involuntary imposition of ways of thinking, and
6. **Method:** presumes that it's possible to have a set of rules adequate to any problem (Roffe 2020b).

So, why should we care about altering this tendency? Well, *psychoanalytically*, The Image of Thought is what constructs and determines aberrant behavior, bodies, thoughts, etc. It controls by suppression and delineation, in the service of superstructural forces, while claiming to be natural. It tracks down which knowledge it will allow to take hold, and pathologizes that which it deems to be deviant. *Philosophically*, the image of thought subordinates difference to a universal, and as such operates via an act of will, a decision, or a putative necessary relation between thought and what it thinks. And *politically*, we should alter the image of thought because it can only think in terms of true and false solutions, and in terms of methods that the political power structures pre-determine and culturally construct as universals (while being biased particularities). This is why we refer to it as The *Dogmatic* and *Moral* Image of Thought.

And here we begin to see why time is so important, for Deleuze; because the aleatory adventure of thought that Deleuze wants us to explore is necessarily tied to The Three Syntheses of Time, in that we can only understand how and why the tendency towards The Dogmatic and Moral Image of Thought occurs when we understand the syntheses of habit, pure past, and eternal return, which explain how and why The Image emerges in the first place, and also how and why it is always-already being undermined.

As we stated earlier: the eternal return is the *guarantee of the death of identity*. It is this promise that identity is both repeated and also repeatedly problematized that speculatively seeds the stakes of contesting The Image of Thought, and encourages ways to create outside of its strictures. Instead, for Deleuze (1994; also Roffe 2020b), thought must be understood as a shock, an encounter, an *engendering of faculties* (rather than a deployment of them). There is no method proper to thought, no set of rules adequate to any problem. For Deleuze, a true problem is excessive of method. A true problem is what scrambles analytical reason and instigates genuine thinking before the excess. Thought is a trespassing, a violence. For this reason, Deleuze claims that we don't tend to want to think. The image of thought protects us from genuine thinking. By contrast, real thought is first a coming to grips with an encounter with something confronting. Whereas the everyday tends towards the transcendental and The Image of Thought, Deleuze wants us to attune ourselves to the resonances of excess that confront us at every turn.

Thought, then, becomes less about solving ready-made problems, and more about the intensification of them. *Problematize!* is the great maxim for genuine thinking, for Deleuze. It is contrary to those forms of thinking that are propositional in nature, that take the form 'S is P'. This form of thinking presumes a certain relation between problems and solutions, but it sets up false problems; problems with no real significance. The problem is nothing more than a traced copy of possible solutions. A true problem is one that changes the very transcendental coordinates that condition actual experience itself.

So, how do we avoid The Dogmatic and Moral Image of Thought? We expose ourselves to the encounter. We remain sensitive to the return of difference that guarantees the death of the sacred identities to which we cling. We joyfully encounter true problems, and let them derange our habits, knowing that we can never solve a true problem *now*, and so we must change. We must become shattered and turned into a thinker again, and again, and again.

But we can have a hope, of sorts, that the pure and empty form of time guarantees that thinking can and will be engendered. Despite the power of The Dogmatic and Moral Image of Thought, we are not entrapped in an absolute world apparatus that limits thought. There are tendencies towards conservation of knowledge, but what Deleuze teaches us is that conservation is merely a moment, and will not be the next.

### 1.5.2 From Deleuze to Deleuze-Guattari

So, how does all of this bear upon our efforts in this project to think *according to finance*? In short, it requires that we learn to think, not merely produce knowledge beholden to a logic of representation. It requires thinking in a way that does not foreclose any object of investigation at the outset. Thinking representationally can only ever investigate any object of concern as a material *for thought*, which operates via the 'everybody knows', presuming that this object of concern is a pre-existent, determinate identity that can and ought to be subsumed under concepts for knowledge. This is to think according to The Dogmatic and Moral Image of Thought.

Thinking non-representationally, by contrast, reorients any investigation to the material under consideration by attuning to the constitutive processes that are excessive of the determinations presented. This does not disregard conceptual orientation as a necessary starting point. Always *in medias res*, thinking non-representationally is also not ignorant of the tendency towards conceptualization and the value it carries in orienting investigation in the first instance. It merely refuses to accept any and all path setting as sufficient. This means that we must be aware of the presuppositions of the 'everybody

knows' pertaining to how finance is typically posited and then representationally investigated. And, in our specific concerns pertaining to the temporal logic(s) of finance, this means that we must not rest in any presumptions that condition any investigation into financial temporalities, particularly with regard to the nature of time as such. Thus, the task so far has been to explain Deleuze's novel conception of temporality; one that begins with but then expands beyond Bergson's critique of the spatialization of time, by providing a material account of how thought is engendered and how The Three Syntheses of Time explain the tendency towards static identity, while also articulating how any tendencies towards such rigidities is always-already undermined.

Now, we turn to the explicitly political project of Deleuze's collaboration with Felix Guattari, so that we might apply the speculative metaphysical project of Deleuze in a way that is more easily recognizable for political economic concerns. Of primary interest will be D-G's elaboration of the processes of social formation that are unique to capitalism. These take place through a dual relation: 1) the incessant enclosure of resources via *despotic coding* and 2) the *decoding flows of the capitalist axiomatic*. In the end, we will present a theory of social topology that is constructed by the *techné* of desire. This *techné* is both social formation and desiring-production, and it builds out a social milieu that is defined by both control and also lines of flight.

If The Dogmatic and Moral Image of Thought is Deleuze's metaphysical conception of how knowledge production stifles the aleatory adventure of thought, the D-G project is an investigation into those forms of social topology that stifle the creative flows of desire-production through the deployment of extensional forms of social formation, and a speculative account of how it might be politically contested. How this all relates to a project concerned with finance is that Deleuze and D-G provide us with resources for diagnosing how and to what extent finance operates according to The Dogmatic and Moral Image of Thought, in its construction of social formations; while also refusing to assert that finance is merely a technology that stifles creative flow. It is this delicate balance between creation and closure that informs our use of the term *techno-temporality*. For, this term is a synthetic disjunction that carries within it productive tensions for genuine thinking according to finance. This is because temporality and spatiality are synthetic processes that bespeak of both novelty and habit, creation and production, flow and stasis – at the same times – which offers ways to think *according to finance* without merely thinking *about* finance, or letting pre-constituted financial terms dictate the possible ways we ought to think about financial operations.

## 1.6 Deleuze-Guattari: Towards Techno-Temporality<sup>13</sup>

### 1.6.1 Deleuze-Guattari

Deleuze's speculative philosophy of time takes an explicitly political turn in his co-authored works with Felix Guattari. With our primary focus in the previous section being on *time*, we shift now to thinking about *space*. We noted earlier that we would begin with *spacetime* and then shift towards a conception of *techno-temporality*, a *synthetic disjunction*. This section, while not an exhaustive account of the Deleuze-Guattari (D-G) project, will develop the concept of techno-temporality as the socio-political expression of the Deleuzian project concerning time, by investigating certain tendencies of social topological construction that stifle the creative flows of desire-production via the logic of extensional quantification, while also offering a speculative account of how this tendency might be politically contested.

First, to call back to the previous sections on time and The Dogmatic and Moral Image of Thought, we need to note how it is that these notions bear upon a critical political project. Barber (2009: 137) couldn't be clearer when he states that "thinking, whenever it takes communication as its image of thought, provides an assist to capitalism." What he means is that capitalism's productivity proceeds via communication. In fact, it "valorizes the flux, the apparent anomaly, precisely in order to integrate it at the level of globality." In response, Deleuze calls for thinking to create, not communicate. And this creation must not be methodological or propositional, but must be without limit. This creation must not be prepared "for communication, or even mediated by communication. The mediation must go from creation to creation, along a path made by intercession" (Barber 2009: 138). This capacity of capital to valorize the products of the empty and pure form of time leads Philip Goochild (2005: 148) to write, "What this entire debacle known as the history of capitalism may teach us... is that there is such a possibility of creation." Goodchild even argues that capitalism itself is a type of creation.

So how does that idea reconcile with Deleuze's idea that capitalism is communicative and that creation and communication are opposed? The answer is that capitalism is a creation *with a relative limit*. This is because of its still present dependence on the *Urstaat* of the despotic system, which prevents capitalism from becoming pure immanence (Deleuze and Guattari 1983: 217ff). Capitalism thus still retains a tendency

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<sup>13</sup> This section benefits immensely from notes taken during a series of lectures delivered by Jon Roffe (2020a).



toward transcendence – particularly in its reterritorialization and recoding of desire. This is where the D-G project begins, and it hints at how we are to understand the connection between Deleuze’s philosophy of time and these later political writings. And this also reveals the limitations of Accelerationist readings of Deleuze and D-G that only think in extensional terms; for, communication is the extensional logic of information relay – or knowledge production – of capital; whereas creation is qualitatively other, as it operates as *intensive variation*.

### 1.6.2 From Metaphysics to Politics // From Time to Space // From Space to Techné

The D-G project centers three concerns: desire, social production, and psychoanalysis (Roffe 2020a). This trio serve as the undercurrent for their first collaboration, *Anti-Oedipus* (AO). AO examines 1) how desire only appears under determinate conditions as a form of social production, 2) how social production is an aperture on desire-production, and 3) how and in what ways capitalism is a peculiar condition of social production. They begin this examination by positing desire as an *unregulated positive production of reality*, rather than as relating to a lack, as in psychoanalytic formulations. Then they posit that social production, in capitalism, is repressive in a negative sense – it captures. And finally, they examine how psychoanalysis (particularly the Oedipal structure) plays an integral role in the capturing tendencies of social production. Much like Deleuze’s examination of time and thought, we have a schema concerned with excess and its capture.

For D-G, capture operates via the principle, the *archē*, whereas excess is endlessly creative. In their second text, *A Thousand Plateaus* (ATP), D-G refer to capture as operating via the logic of the arborescent model; which we can see as a type of propositional and methodological rationality, in the terms of *Difference and Repetition*. That is, it is representational, and thus tends towards the conservation of knowledge by producing false problems that the principle itself is already able to address by virtue of it establishing the set of possibilities by its very orientating act.

Excess, on the other hand, serves as escape, or what D-G (1988: 9-10) refer to as a *line of flight*. Like the pure and empty form of time of the third synthesis of time/eternal return, this excess is not pre-constituted as an identity, or a range of identities from which we can choose the most useful for a given task. Rather, pure excess, is purely productive; hence the term ‘desiring-production’. *Desire is the name given to Deleuze’s conception of the empty form of time/eternal return in a socio-political context*. It leads to spontaneous organization through fissures and breaks, flows and becomings. This has resonance with

the Third Synthesis of Time that is both cut and assembly/seriation that we discussed above.

What is most important for our project at this point is that, while Deleuze's philosophy of time is material, it is also highly speculative, and can leave one wondering, 'what now?'. The D-G project, on the other hand is intentionally political, in that it brings the theoretical directly to bear on the terrain of the socio-political. And it does this by experimenting with concepts that directly pertain to *technology*. These technology are the *techné* of both creation and capture. That is, the political *techné* of AO and ATP are the virtual objects that constitute the social topology and that orient institutions and subjectivities within them. In this *techné* we find the conditions for control and creation. And this social topology is what shifts our focus from space as an abstract extensionally quantitative concept, to the *techno* in techno-temporality as a synthetic intensionally quantitative one.

### 1.6.3 Schizoanalysis and The *Techné* of Desiring-Production

If *Difference and Repetition* is a genetic account of our understandings and misunderstandings, AO can be seen as a genetic account of legitimate and illegitimate forms of synthetic social formation. The illegitimate forms operate via the *everybody knows*, whereas the legitimate take place in the syntheses of desiring-production.

Desiring-production is never devoid of context; it is always modulated by specific historical conditions. In capitalism, for D-G, there is a tendency towards an illegitimate form of social production as the *modus operandi*, that preys upon desiring-production. The task for theory must be to draw attention to this tendency, to call out the historical contingency of it, and to draft pathways beyond this transcendental illusion that asserts itself as natural, necessary, and good – that is, dogmatic and moral. This pathway beyond is called *schizoanalysis*.

Distinct from psychoanalysis, schizoanalysis is not a victim of transcendental illusion, precisely because it does not erect a regulative principle. Psychoanalysis claims to be a universal reality, but is, for D-G, a result of capitalist rationality.<sup>14</sup> It is the Oedipal Structure that becomes the universal for psychoanalysis, that does not provide a cure, but only re-entrenches the transcendental illusion, and exacerbates the tendency towards

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<sup>14</sup> In *The Capitalist Unconscious*, Samo Tomcic provides a compelling rebuttal to this claim, by asserting that capitalism has never been fully Oedipal, and that D-G make a claim built on a misunderstanding of the Oedipal Structure. Also, the work of Žižek and McGowan offer an alternative conception of Lacanian psychoanalysis that is much more in line with Tomcic's rebuttal than the target of D-G in AO.

capture. This is because, while Freud was right to conceive the unconscious and its dynamisms, he was wrong to encase it within the Oedipal Structure. By doing so, psychoanalysis essentializes the unconscious dynamisms and establishes a regime of capture. D-G contest this by conceiving desire as *machinic*. This is not mechanical, and neither is it organic or vitalist. Rather, they emphasize the connective and absolute generality of desire as process. It is this desiring-machine that becomes the *creative techné* of desiring-production.

In DR, we saw that Deleuze counterpoised integral and differential calculus. There is a similar move taking place in AO, a counterpositioning between the technical tendencies of integration and mastery with those of connectivity and multiplicity. The former are what D-G refer to as *molar*, and the latter are *molecular*. The tendency of social production is to molarize: integrate, unify, and control; the tendency of molecularity is towards connectivity, multiplicity, and creation. While the desiring-machine of molecularity is creative flow, the way that social production molarizes is via *coding*.

#### 1.6.4 Code, Code, Everywhere a Code: From Pre-State to State Social Formations

To code desire is the business of social organization. D-G use the term “socius” to speak of the regime of capture characteristic of social production. Coding is a form of technical mastery that represses desiring-production as a technical and social creative flow (Deleuze and Guattari 1983: 32). Coding is a *qualitative* activity. And it is the supreme task of the social machine. Its form of organization is *partes extra partes*, through the construction of unitary entities that establish external relations and qualitative distinctions across the socius. D-G rely heavily on the work of Anthropologist Pierre Clastres in elaborating the ways coding takes place from pre-state, to state, to capitalist social formations.<sup>15</sup>

The central idea in pre-state social formation is that it was constituted by perpetually warding off a transcendent authority from emerging. This means that modes of social formation do not develop linearly, but in the manner of what Daniel Barber calls “reverse causation.” We can think of causality as not occurring

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<sup>15</sup> Anthropologist Eduardo Viveiros de Castro remarks that for both Clastres and D-G true philosophical and anthropological thinking must become a “permanent exercise in the decolonization of thought,” in *Cannibal Metaphysics*, 48. While it’s noted how much of influence Clastres exerts over AO (see the many references and allusions), there is also direct textual evidence that D-G employ Clastres’ terminology of nomadic spaces in ATP but without citation. Despite this, Clastres also seems to have been influenced by D-G, for example, when in 1972 at a roundtable discussion of AO, he remarked that “Deleuze and Guattari have written about Savages and Barbarians what ethnologists up to now have not.” (*Desert Islands*, 226).

by way of the selection of one out of many determinate possibilities, but rather in virtue of an awareness of and a concomitant attempt to ward off a possibility that never appears among the determinate possibilities. (In fact, it may be the case that the appearance of the set of possibilities is determined by the attempt to ward off a possibility that must remain inapparent). Reverse causation affirms such a suspicion, for it asserts that the cause (let us call it A) is determined by its attempt to ward off a possibility (call it X)” (Barber 2011: 27-28).

And precisely what is coded are multiple flows of desiring-production, through the activity of reverse causality, as social formation. Of course, each social formation has distinct ways of using codes and recording them on the surface of the socius; in fact, what constitutes the surface of the socius are precisely these particular codes of social production. *This is what we mean when we speak of topological spatialization: the coding of the socius as social formation.*

Once canonized, so to speak, the codes appear to emanate from the surface. D-G refer to this as a *miraculating* effect. The “miraculating-machine” then takes on apparent agency of its own as it sets the conditions for social life by setting a particular regime of representation. This miraculating effect then creates a serial repetition of the possibilities for social production. Coding is, therefore, best understood as a *topological activity of inscription* – miraculating inscription (Deleuze and Guattari 1983: 78).

Considering the above, the coding of pre-state formation is understood by its warding off of both the state and capitalism, with their introduction of the ‘mommy-daddy-me’ nexus (Roffe 2020a). With the advent of the state, all efforts to resist a transcendent authority in the pre-state formations succumb to the accumulating tendencies of a ruling figure who is able to judge as separate from the community. Clastres (1989: 14) highlights this shift by noting how in pre-state societies the chief was a *powerless power*. He was given women by the society in exchange for the production of goods that the group expected to receive from the extra arms of the chief’s extra women (Clastres 1989: 17). He was also expected to return their giving of the gift of polygyny with words, speeches; the irony being that these speeches were ignored at the point that an absolute command would set in, ensuring that the real power was maintained by the group. Thus, because of this relation between powerless chief and powerful group, the chief was perpetually and infinitely indebted to the society (Clastres 1989: 78).

The state, by contrast inverts this. Now, society becomes indebted to the transcendent despotic machine (Deleuze and Guattari 1983: 197ff). In fact, it is not an overstatement to claim that *debt is the primary characteristic of the transcendent authority that defines state formation*. The despotic machine of state formation overcodes the flows of pre-state desiring-production precisely by integrating everything via the prism of indebtedness to the despot. The despot converts all filial relations by making desire the property of the sovereign. Therefore, the despotic machine reproduces its system of social production in the name of the despot.<sup>16</sup>

The *superego injunction* emerges here in relation to the transcendental signifier of the despot that erects a system of law and grace: 'the more innocent you are, the guiltier you are'. As D-G (1983: 209) aver, "Body representation subordinates itself to word representation." The law becomes written. This results in fidelity being required by the inscriptive overcoding of desire which interpenetrates the surface of the socius; and this command for fidelity likewise produces a guilt, as the infinite debt to the despot that can never be recompensed, which induces further desire, as coded by the despot, *ad infinitum*. This is the establishment of the *archē*.

However, this compelled obedience via the written law is incomplete. *De jure*, everything can be coded. *De facto*, there are limits. This is because no state is fully self-sufficient. It is reliant on things external to it to function. In the act of coding, all externalities are potential converts, however they can only be coded according to the qualitative inscription of the despotic machine, which means that there is an interest in everything that is coded. Such expansion of interests then threatens the stability of the regime, as the scope of the interests becomes too great to manage.

Yet, codes also carry with them their own excess of desiring-production. Any effort to code represses but also reveals that which is being warded off through the act of inscription and enclosure. This is what leads to the introduction of capitalism as a system that is defined by its *indifference* towards that which is organized, since indifference tames the threat of the excess that emerges from overcoding.

### 1.6.5 Decoded Flows: The Capitalist Social Formation

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<sup>16</sup> It is worth noting that, for D-G, this is also the beginning of taxation, as the sovereign imposes an infinite debt over the community and can demand tribute, payment, etc in order to maintain power for himself and perpetuate fidelity across the socius. This is the introduction of the superego injunction where fidelity induces further guilt, which requires more intense fidelity *ad infinitum*.

If the state formation is defined by overcoding and infinite debt, capitalist social formation is understood as decoding and axiomatic. Where codes are *qualitative*, axioms are *quantitative*. Axiomatization, therefore, operates by decoding the representational tendencies of social formation of the despotic machine by indifferently declaring the maxim of capitalist social formation: *buy low, sell high* (Roffe 2015: 109). It does this with flows of labor: buy low, sell as surplus-value; and with flows of money: buy low, sell upon price increase.

The state does not disappear, however, even if it loses its global dominance.<sup>17</sup> Instead, the state is given a managerial role: from overcoding in the state formation, to managing axiomatized, decoded flows. The rise of technocratic managerialism is the paragon exemplar of this state managerial role. The state shifts from being an apparatus of semiotic capture, to a *techné* that works *for* capitalist axiomatization. That said, it retains its tendency of representation by inventing codes – *qualitative determinations* – after decoding.

The despotic machine also cedes its right as infinite creditor to the socius of capitalism, what D-G (1983: 222ff) refer to as the “full body” of capital. This full body is expressed in the creative flow that banks create as a debt owing to themselves; not as a transfer of pre-existing currency as a means of payment, but as a “hollowing out at one extreme of the full body a negative money (a debt entered as a liability of the banks), and projects at the other extreme a positive money (a credit granted the productive economy by the banks)” (Deleuze and Guattari 1983: 237). What is crucial to note is how the capitalist social formation operates via a *technical regime of money*. As Deleuze (1995: 152) would later state towards the end of his life, “Beyond the state it’s money that rules, money that communicates, and what we need these days definitely isn’t any critique of Marxism, but a modern theory of money as good as Marx’s that goes on from where he left off.” The urgency of this call for a modern theory of money, therefore, is a call to investigate the infinite debt, not to the state, but to the *technical regime of money*. If the despotic machine is reproduced via the prism of the despot’s ability to overcode anything, capitalist production is understood in the  $M=M'$ , insofar as money gives rise to money through the axiomatization of decoded flows.

This axiomatic tendency of capital is not transcendent (as in the state). It is more properly immanent, even if not entirely so. This is because capital is “insinuated” everywhere. Its sinews are the connective tissue of capitalist society, that place money

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<sup>17</sup> See also, Strange (1996).

everywhere, that declare the universal debt to money, that herald the necessary quantification of all.

However, try as it may, the quantification of all under capitalist social formation is not a productive activity. It is anti-productive. It is the residuum of the deterritorialized socius of capitalist social formation. What this means is that since the capitalist machine does not code, it does not strictly speaking repress. Rather, the capitalist machine emerges as a disinterested answer to the problem of the return of the repressed under the despotic machine. Always axiomatizing, then, the capitalist machine threatens to destroy the very socius itself, and so creates the conditions for state coding to reterritorialize via qualitative determinations, and also continues to contest the threshold of the socius with endless deterritorialization (Roffe 2020a).

This is difficult to understand because D-G are not establishing a binary between repression or domination, on the one hand, and a libertarian conception of negative liberty, on the other. Capitalism is neither repressive nor freeing. It is creative-within-a-limit. It is an aperture onto desiring-production. This is why Goodchild explains that capitalism demonstrates that creation is possible, even if what it offers isn't creation as such.<sup>18</sup>

So, what is this 'relative limit'? For D-G (1983: 265), it is the *family*. The "family becomes the sub-aggregate to which the whole of the social field is applied." It is the *Urstaat*. For D-G (1983: 217), the *Urstaat* is "the eternal model of everything the State wants to be and desires." This eternal model is the absolute belief that the sovereign can code anything. In capitalism, everything is reducible to the mommy-daddy-me *Urstaat* fantasy. It is this fantasy that holds the decoding tendency of capital at bay, acting as a small state, providing stability, coding. Oedipus, therefore, is a product and not a primary cause. It is the product of the socius holding capitalism's decoding axiomatization back. But it presents itself as primary cause to which everything ought to be subjected. This is where psychoanalysis makes its great error, by placing the Oedipal Structure first as cause, source, miracularity. Schizoanalysis, by contrast places the social field first.

### 1.6.6 The 'Anti' of Anti-Oedipus

D-G critique psychoanalysis across five paralogisms:

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<sup>18</sup> This is likely a transformation of Marx's ideas about the developmental nature of capitalism revealing the possibilities of its own overcoming.

1. **Extrapolation:** psychoanalysis extrapolates from the many part-objects to erect a singular Phallus, which then stands over as the global object – this leads to an illegitimate conception of desire
2. **Double-bind:** There is only every Oedipus – either the Oedipus of health or of illness, but either way, it's Oedipus.
3. **Application:** psychoanalysis takes Oedipus first and social field second; Oedipus is applied to the social field – everything is Oedipalized.
4. **Displacement:** psychoanalysis misrecognizes the origins of law by reducing it to the desire and law relation – that we desire what is forbidden *because* it is forbidden.
5. **Afterwards:** because Oedipus is falsely placed first, D-G say that psychoanalysis reduces psychopathology to the family (Roffe 2020a).

The conclusion drawn from these paralogisms is that psychoanalysis fundamentally *misrecognizes the illegitimacy of social formations*. In DR, Deleuze claimed that The Dogmatic and Moral Image of Thought led to a misunderstanding of thought and therefore could only construct false problem-answer formulations. For D-G, psychoanalysis takes the form of a Dogmatic and Moral Image of Thought insofar as it misrecognizes the nature of problematics across social formations. What is more, it actually plays along with contemporary social apparatuses as a serial process. They go so far as to exclaim that if capitalist reason works as “Oedipal,” this is only because Oedipus is constructed by and through the desiring-production of capitalism (Deleuze and Guattari 1983). To counter the serial tendency of psychoanalysis, and to develop a tactical orientation in and to the social field that would avoid transcendental illusion, D-G offer the speculative project they call *schizoanalysis*.

#### 1.6.7 After Oedipus: The Speculative Project of Schizoanalysis

By displacing Oedipus as the metaphysics of psychoanalysis, D-G seek to posit their own unveiling of the transcendental unconscious that is not always-already captured by The Dogmatic and Moral Image of Thought. As with Deleuze's transformation of Bergson's project, D-G sidestep the metaphysical absolute of Oedipus by framing desiring-production as always *conditioned*. This means that desiring-production is not an absolute force, as the *élan vital* was for Bergson, or as the Vitalist readings of Deleuze purport his *virtual-actual speculative dynamic* to be. Instead, they posit four theses that



characterize their efforts to “Destroy Oedipus, the illusion of the ego, the puppet of the superego, guilt, the law, castration” (Deleuze and Guattari 1983: 311):

1. **Desiring-production is conditioned:** their exploration is concerned with how desiring-production is conditioned by the pre-state, the state, and capital. This is summed up in their statement: “Every investment is social, and in any case bears upon a sociohistorical field” (Deleuze and Guattari 1983: 342).
2. **Pre-conscious v. unconscious:** within these social investments, there are preconscious class and interested investments and unconscious libidinal investments (Deleuze and Guattari 1983: 343). The preconscious investments are molar, at the level of the imaginary, and expressed by subjugated groups in the project of social formation. The unconscious investments are libidinal and revolutionary *in se*; they are immediate multiplicities; they are the molecular investments of subject groups.
3. **Primacy of libidinal investments in social field, over familial:** schizoanalysis gives primacy to libidinal investments, however acknowledges the tendency of subsequent familial investments that serve as analogues to Deleuze’s earlier elaborations on the First and Second Syntheses of Time that is always exploded by the pure and empty form (in DR of the Third Synthesis, in AO of libidinal investment) (Deleuze and Guattari 1983: 356).
4. **Thesis of the two poles, paranoiac and schizo:** social libidinal investment is distinguished by two poles, the paranoiac/reactionary/fascizing pole and the schizoid revolutionary pole (Deleuze and Guattari 1983: 366). All libidinal desire plays out somewhere between these poles. The Oedipal Structure, the *Urstaat*, the state properly always limit desiring-production, preventing the schizo-pole from being fully actualized. Desiring-production troubles social production so that its disruptions must be covered, serialized, hidden, coded, etc.

This leads them, finally, to the one negative and twin positive aims of schizoanalysis (Roffe 2020a). The negative aim is to *destroy*: destroy beliefs and representations; destroy The Dogmatic Image of Thought and its repetition through social formation. The twin positive aims are 1) to discover desiring-machines in a subject, which is the clinical task of reaching “the investments of unconscious desire of the social field” (Deleuze and Guattari 1983: 350) in order to ask what one’s desiring-machines might be and to investigate how they might work; and 2) the political task of re-engaging

society with desiring-production, through “assembling the desiring-machines.” In doing so, they assert that we might be able to identify libidinal breaks at precise moments that can produce a “strangely polyvocal moment when everything is possible” (Deleuze and Guattari 1983: 378).

All this considered, we agree with Foucault who viewed AO as a work of ethics. It is a work for how to keep oneself (and our societies) from being fascist, even if one thinks one is a revolutionary, or that a movement is revolutionary. As Foucault (1983: xiii) asks, “How do we ferret out the fascism that is ingrained in our behavior?” To answer this prompt directly: by identifying the preconscious investments, ideological conditionings, and serial tendencies within our worlds, our political projects, our art, our social relations, our political economies and – more specifically for the remainder of the present project – in our financial mechanisms.

### **Conclusion: The Raw Material of Techno-Temporality**

Connecting the above sections together, there has been one simple desire: to think of time and space in terms that resist representational thought. Not because representations are themselves fascist. Rather, representational thinking is part of the habit of life lived in social formations. However, to rest assured that such thinking holds the key to well-being as creatures on earth, is to presume too much. It is to presume that we already know. Deleuze teaches us that the *everybody knows*, however, is a hallmark of that form of knowledge production that stifles and never creates. And if thought is foreclosed from creation in the first instance, then we merely communicate in terms established by the principle of sufficiency that orients us, that preordains what is possible. Deleuze gives us a way of conceiving time that contests such sufficiency. And the D-G project provides us a genetic account for understanding the technological topology of sociality, and how it might be creatively altered. Why this matters for a project concerned with finance is that only by refusing to accept the forms of thinking *about* finance can we come to terms with finance thinking *according to* the Real. That is, in order for us to investigate finance as a raw material, we need to clear the debris scattered by The Dogmatic Image of Thought and the paranoiac reproduction of social formation under capitalism that inflects into thought throughout the socius.

What we have now achieved, then, is the first step in considering deeper how we might navigate the misrecognitions of political economy, the critique of political economy,

and critical finance. Part Two will be the second step, as we investigate Marx, Keynes, and Critical Finance Literature and *if, how, and to what extents* they can aid us further in our effort to think finance according to the Real.

Chapter 2  
A Marxian Logic:  
From Capital, to Finance as Capital-as-Subject

## 2.0 Introduction

Marxian Political Economy is a vast field of inquiry that we can only begin to approach here. This is to note clearly that this chapter is not an exhaustive account of Marxian conceptions of finance. This won't prevent us from making generalist claims, however. It is merely to note that these claims are biased in favor of our more precise aims in this project: an elaboration of what we are calling the techno-temporal logic of finance so that we might begin to learn to think according to finance.

Situated in a Marxian context, how this aim takes shape is through an investigation into certain metaphysical presumptions and guiding principles that cut through classical Marxist, neo-Marxist, and post-Marxist trends. Of particular note will be the pervasive tendency towards thinking temporality and spatiality in terms of *extensional quantification*. This is to say that the Marxian framework tends to think of capital accumulation in terms that are dictated by the mathematical order that we have we have already discussed. Understanding how and in what ways the logic of this mathematical order operates as a process of financialization will provide a useful aperture onto the nature of finance as such, and will reveal particular characteristics of the logic of finance that will speak of a ceaseless process of *acceleration* and *integration*.

The *accelerative* tendency of financialization brings monetary operations of industrial and commercial capital together, accelerating the movement of value. And the *integrative* tendency exponentially converts resources into capital. Together, this accelerative and integrative temporal logic of finance offers us an aperture by which we can better grasp how Marxian orientations think of neoliberal financialization as a technology making a World in its own image, by accelerating the process of integration, which then in turn creates an isomorphic totality that accelerates faster as the demands of its increasing integrative boundaries expand. This leads us to posit that the Marxian aperture has tremendous value, for us, by opening up a way to think of finance as materially self-reproductive, through the endless proliferation of technical devices that retain and project a self-same image that creates the conditions of social formation.

Thus, what the Marxian schema provides is an angle on finance that is both conservative and also transgressive. In its conservative moments, it thinks of a world that is, and that ought to be, conceived in extensional terms. However, in its transgressive virtualities, the Marxian schema creates space to think of the process of world construction beyond representation. Of course, how this is all framed varies from Marx's own writings, to those who take up his project. While we are not primarily concerned with getting to the core of who the real Marx is, we are interested in pressing beneath the surface of the Marxian paradigm's stated aims to see if we might reveal resources that will aid us in unveiling certain tendencies in the proliferation of finance as a set of technical fetish objects that will propel our stated aims forward.

With that, this chapter is most valuable in that it grounds our investigation into heterodox forms of political economic thought, by centering time and space as crucial factors in social and political theory. **Section 2.1** establishes the parameters of this chapter by looking at David Harvey's celebrated notion of *Time-Space Compression*. This section is crucial in that it centers time and space within a Marxian framework by discussing Marx's well-known dictum on the 'annihilation of space by time'. **Section 2.2** is concerned with a post-Marxist elaboration of a *Marxian philosophy of time*. This is an under-investigated area within Marxian theory. But it is crucial for us. To understand the metaphysical motor of Marx's system, and the legacy that takes it up, is necessary if we are to endeavor to move beyond representational forms of thinking that stifle novelty and reproduce their own image of a/the world in speculative thinking. This will be addressed by examining the divide between Classical Marxist concerns with History vis-a-vis the post-Marxist challenge that centers Events. In **Section 2.3** we appeal to the work of Moishe Postone, whose internal critique of capital occupies a third position beyond Marxist and post-Marxist concerns, by ruminating on temporality as a central feature of capitalist social formation. Working through ambiguities across Marx's oeuvre, he emphasizes time as a condition of commodification that is the key to understanding Marx's *Capital*. In the end, we will have painted a picture of an extensional temporal logic of capital that is *accelerative and integrative*. Finally, in **Section 2.4** we look to the specific ways that finance is accelerative and integrative in Marxian terms. We argue that a Marxian logic of capital views the process of financialization precisely in these terms: 1) *that finance is not ancillary to capital, but is the highest form of rationality of capital-as-Subject*, 2) *that it ceaselessly accelerates its extensional expansion while integrating more and more resources into itself by* 3) *constructing an image of itself that* 4) *operates through the conversion of resources into fetishized objects that are expressions of this*

*image's essence, which 5) function as assets 6) in the construction of a World for-capital (i.e. for-itself).*

## 2.1 Time-Space Compression

### 2.1.1 Harvey: The Annihilation of Space Through Time

Before investigating Marx's theory of time, and before looking into the fetishized technical objects that construct the capitalist *topos*,<sup>19</sup> we need to take a slight step back to remember Bergson and what we might call *the challenge of space*. This first emphasis prompts us to recall Bergson's conception of homogenous space and the constitution of it by projecting the qualitative multiplicity of pure *durée* into a contiguous field of a quantitative mathematical order. The reason we begin here is that one of the most pervasive ideas pertaining to the logic of capital derives from David Harvey's conception of time-space compression (Harvey 1989).

Inspired by Marx's remarks in *The Grundrisse* on the *annihilation of space by time*, Harvey adduces that part of the very fabric of capitalist social formation is due to the reduction in the turnover time of capital, which causes relative territorial distances between places to compress. This desire to 'shrink of the world' is a long-true historical fact, but its tendency to accelerate through new rounds in the organization of capitalist production gives Harvey *et al.* a method by which they can engage critically in the global territorialization of capital accumulation.<sup>20</sup>

For Marx, "Capital by its nature drives beyond every spatial barrier." This leads to the necessary construction of the "physical conditions of exchange." These conditions are the means of communication and transport, which he equates with the "annihilation of space by time" (Marx 1973: 449). The reason he follows this logic is that there is an ever-increasing demand for as much product as possible to reach distant markets, for as cheaply as possible. For Harvey, this is an indication that the tendential global extension

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<sup>19</sup> The designation 'fetish objects' is derived from the emphasis in the work of Elena Louisa Lange (2016; 2021), who emphasizes *Capital* as a project primarily concerned with a critique of the fetishized bourgeois relations of production, and as such, concerned with how the Labor Theory of Value (LTV) is decidedly not a theory of price in any way but an "enigma machine" for decoding all the bourgeois categories of political economy (Lange 2021). Her position is explicitly contrasted with the "Homology Thesis" of Chris Arthur *et al.*, who see a homology between the categories of Capital and those of Hegel's *Logic*. Fetish objects or fetish forms are therefore designations for the ways in which all the categories of bourgeois political economy, that make up its 'space', are fetishized value forms. We will explore this further below.

<sup>20</sup> See also the work of Giddens (1984); Allen and Hamnett (1995); and Dodgshon (1998).

of capitalist accumulation is performed through the commodification of space and time via homogenization and fragmentation. This results in the increasing irrelevance of the nation state in favor of shifting nodes of hegemony that culminate in the world financial economy (Löw 2013). This position is debated in the literature, and unfortunately is beyond the scope of the present project.<sup>21</sup> What concerns us, however, is that Harvey's primary concern is with the logic of time-space compression *via a measure of abstract quantification*.

As Hartmut Rosa (2013) notes, this logic is rooted in movement, precisely because compression is correlated with a theory of space dependent on the time it takes to travel through it. Thus, Harvey's annihilation by time is more aptly an annihilation of space *through* time, with the *throughness of time* referring to the logic of a time that is accelerative. Rosa (2013: 29) claims that this acceleration is a losing of stable fixed geographical space as a consequence of

a rate of circulation of streams of information that has been sped up to the point of global simultaneity. Therefore my claim runs as follows: *there is no independent spatial moment of change in modernity analogous to acceleration; the transformation of spatiotemporal structures is primarily driven by its temporal dynamic of change*.

Therefore, understanding this 'temporal dynamic of change' becomes the priority, for us. And once this is revealed, the logic of time-space compression and its effect on how we understand global capital accumulation will take on a novel sense that will prove useful in setting the grounds for our investigation into a Marxian conception of financial temporality. In order to understand the temporal dynamic of change that drives time-space compression, then, we need to first understand the nature of space that this dynamic transforms.

### 2.1.2 The Temporal Dynamic of Change in Time-Space Compression

Harvey demurs on the question of an ultimate ontology of space. But he does postulate three spatial dimensions that he believes adequately skirt the ontological impasse of space's nature (Harvey 2006: 275). These three are: Absolute space, Relative space, and Relational space (Harvey 2009: 13-14).

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<sup>21</sup> For recent interventions into this debate, see Harvey (2017); and for some counter positions, see Suwandi (2019); Intan Suwandi *et al.* (2019); and Hickel *et al.* (2022).

*Absolute space* is that of Substantivalism that we discussed last chapter. It is a fixed thing in itself. *Relative space* “proposes that [space] be understood as a relationship between objects which exists only because objects exist and relate to each other.” Defining *relational space*, Harvey invokes Leibniz, by suggesting that space is “contained *in* objects in the sense that an object can be said to exist only insofar as it contains and represents within itself relationships to other objects” (Harvey 2009: 13). Harvey claims that *prima facie* this presents an ontological concept, but that through an investigation into human practice, the very possibility of formulating an ontological concept of space itself is problematized. Thus, he prefers to tarry with the question, “[How] is it that different human practices create and make use of different conceptualizations of space?” This apparently pragmatic inquiry is actually transcendental, in that it is not asking how and in what ways humans interact with and create space, but how they interact with and create different *conceptualizations* of space. The difference is important as it cuts across his entire reading of the work of Marx, more generally, and frames his approach as tinged by The Dogmatic and Moral Image of Thought. He admits as much when he explicitly acknowledges that his representational methodology is necessary for investigation, but sees such abstract thought as ultimately productive as a heuristic that might trigger the imagination towards more robust dialectical thinking (Harvey 2006: 281).

He is careful not to erect a hierarchy among the three dimensions of space, but instead follows Henri Lefebvre (1991) by retaining a putative dialectical tension among them. He then sets his threefold alongside Lefebvre’s own threefold of 1) material space, 2) conceptualized space, and 3) lived space. By putting into relation his threefold with Lefebvre’s, Harvey is able to create productive combinations whereby the transcendental conditions of spatial activity reveal both spatial and spatio-temporal forms of thought. An example he gives is of the *absolute space* of a gated community, populated by residents who move in *relative space* on a daily basis into and out of

the financial district in Manhattan where they set in motion movements of credit and investment that affects social life across the globe, earning thereby the immense money power that permits them to import back into the absolute space of their gated community all of the energy, exotic foods and wondrous commodities they need to secure their privileged lifestyle (Harvey 2006: 284).

The interpenetration of absolute, material, relative, conceptual, relational, and lived space creates a dialectical matrix of spatial and spatio-temporal phenomena that Harvey



believes create an opening to reveal material, commercial, cultural, emotional, and aesthetic ways of life.

The political stakes of such an investigation bring Harvey directly back to Marx, whom he regards as a profoundly relational thinker (Harvey 2006: 287)), and whom he believes is uniquely capable of equipping us to identify the conditions of appropriation and domination resulting from time-space compression (Harvey 1989: 222).

In finding such an entry point to investigate phenomena that explain appropriation and domination, Harvey believes we can create novel conditions for spatio-temporal forms of life. This leads to his investigation of Marxian value forms. Taking Marx's threefold of use-value, exchange-value, and value, Harvey declares that his own threefold maps onto Marx's in the following way:

1. **Use-value/Absolute space:** "Everything that pertains to use-value lies in the province of absolute space and time. Individual workers, machines, commodities, factories, roads, houses and actual labor processes, expenditures of energy and the like can all be individuated, described and understood within the Newtonian frame of absolute space and time."
2. **Exchange-value/Relative space:** "Everything that pertains to exchange-value lies in relative space-time because exchange entails movements of commodities, money, capital, labor power and people over time and space."
3. **Value/Relational space:** The advent of money initiates an even "grander and more fluid universe of exchange relations across the relative space-time of the world market... The circulation and accumulation of capital occurs in relative space-time. Value is, however, a relational concept. Its referent is, therefore, relational space-time" (Harvey 2006: 288).

It is the dialectical relation between these three registers that serves as the regulating principle for Harvey's transcendental operation. For, while there are three conceptual registers, each with their own qualities, value is the ultimate synthesizer that attests to Harvey's relational approach. It is the "internal relations" of relationality at the third register, value/relational space, that determine the entire process of the production of space in the historically specific conditions of capitalist social formation. This is because value "internalizes the whole historical geography of innumerable labour [sic] processes set up under conditions of or in relation to capital accumulation in the space-time of the world market" (Harvey 2006: 289).

It is the 'immateriality' of social relations that draws Harvey's attention to value. This is because Marx's claim that value is both "immaterial but objective" is a stumbling block for many who only understand Marx in strictly materialist terms. But it is the social relational quality of value that Marx is highlighting that Harvey sees as crucial for an understanding of value as such. Therefore, to understand the temporal dynamic of change in time-space compression, we need to understand Marx's conception of value, for this is what brings us to the central issue of time for Marx, and for those who inherit his project.

Toward that end, we begin an investigation into a Marxian conception of time, which we will show is integrally connected to his theory of value, which is crucial to elaborate the temporal logic of finance in Marxian terms.

### *2.1.3 Towards a Marxian Theory of Time: The Arrow of Time*

Harvey's work is spattered with references to Bergson, Deleuze, and D-G. D-G receive short shrift in *The Condition of Postmodernity*, for their supposed incoherent conception of subjectivity that eradicates the concept of the "alienated individual in the classical Marxist sense," a tendency he sees as emblematic of postmodern theory from D-G, to Derrida, to Jameson, Rorty, etc (Harvey 1989: 53). Where Modernism was concerned pre-eminently with the pursuit of better futures, postmodernism "strips away that possibility" (Harvey 1989: 54). Harvey sees in the postmodern a tenacious incapacitation for the construction of alternative social futures. Yet, it is in Marx that he finds an unwavering commitment to such construction, and thus retains what he sees as the conceptual toolbox of an approach to social construction that must not be abandoned in the name of fashionable theoretical projects.

His concern with Bergson is both historical and conceptual. He follows Daniel Bell in asserting that Bergson's preoccupation with time was the result of a milieu whose primary aesthetic concern was the problem of time. He further claims that Bergson "was incensed that it took the spatializations of the clock to tell the time" (Harvey 1989: 201). It was Bergson's aesthetic priorities that charged his ire towards the representation of flux via representation, for Harvey.

Taken together, it seems that the crux of Harvey's critique against Bergson and the so-called postmoderns is that they eradicate the conditions for genuine social construction. With Bergson, it is his inability to think of space in non-representational ways; and with D-G *et al.*, it's that they eliminate the revolutionary subject and its

possibility for agency. Said constructively, Harvey's concern is to not relinquish the *arrow of time* as a conceptual apparatus that can be wielded for social transformation.

For Harvey, it is time-space compression that reveals the limits of capital, which then signals pathways beyond these limits. He is explicit about this in *The Limits of Capital* when he speaks of "time-space frameworks" in which accumulation occurs. In the preface to the second edition he writes:

Crises have no existence outside the matrix of spatio-temporalities that capitalism itself creates. Crises are as much about reconfiguring the spatio-temporal form of class relations (through all manner of stressful adjustments) as about the internal class contradictions of capitalism specified in some absolute and immutable space and time (Harvey 1999: xiv).

Again, we see his use of the various dimensions of space that he elaborates elsewhere. Here, he frames time-space compression within Marxist crisis theory to espouse the sense that crises pertain, necessarily, to the reconfiguration of *spacetime*, as conceived through the value form.

These crises, however, and the possibilities they open, are only understandable in *historical terms*. He relies on Benjamin's conception of history as opening potentials that can 'flash up' to reveal new possibilities (Harvey 2006: 286). History, is, thus, not pure determinism, but rather a particular expression of value that carries within itself "all the traces of the history of proletarianization, of primitive accumulation, of technological developments that are internalized within the value form" (Harvey 2006: 289).

This emphasis on history is what reveals Harvey's classical Marxist conception of time. There is a desire to retain a robust conception of the arrow of time, as understood in the value form, in order to reveal the contradictions of capitalism, and thus to unveil the possibilities for its overcoming. Thus, we see that his fundamental concern is for an *open future*. In Harvey's (2018) terms, this freedom into an open future is from the constraints of a system that reproduces itself as a prior tendency towards foreclosure. This negative conception of liberty presumes a relation between the now and the future, as abstract points in a mathematical order. Once again, we are firmly ensnared here by the principle of sufficient philosophy and the logic of the possible that has followed us since Part One. It is precisely this issue of history as logic of the possible that frames the divide between classical Marxists and post-Marxists.

## 2.2 The Challenge of Post-Marxism: History v. Events

### 2.2.1 Post-Marxism: From Time and Space, to Time and Being

As Peter Osborne (2008: 15) points out, the concept of history is a problem within the philosophy of time; and the concept of time is a problem within the philosophy of history. Where Harvey sees a conceptual opposition between time and space, Osborne notes that the post-Kantian landscape is more properly concerned with *the relation between time and being*. This thread runs through Heidegger, Bergson, Hegel, Nietzsche, Lukács, Benjamin, Derrida, and Deleuze, to note only those most relevant to this project. Therefore, understanding Marx's place within this post-Kantian legacy of the relation between time and being becomes crucial.

More importantly is the way the Kantian transcendental aesthetic sets the conditions by which this relation is framed. Namely, post-Kantian philosophy is often referred to as the *turn to the self*. With the aesthetic forms of time and space internalized within the subject, the very category of time itself came to be conceived in subjective terms. Thus, Osborne (2008: 15) notes, without any rhetorical overreach:

The philosophy of the subject has thus come increasingly to appear, retrospectively, in large part, as a form of *philosophical management* of the disruptive force of time, and thereby, for some, as a kind of intellectual policing of insurgent singularities. This is the terrain on which the recent Deleuzian revival of a Bergsonian philosophy of time has entered into alliance with Negri's post-Marxian philosophy of revolution.

It is this post-Marxian orientation that most highlights the tensions between the Modern and postmodern that Harvey notes, for, in the work of Negri (and his co-authored works with Michael Hardt), there is a concerted effort to ground a theory of revolution that is post-historical. This is because Negri's account refuses to prioritize a conception of historical time, which has subsequently led Alex Callinicos (2001), *et al.*, to claim that "Negri rewrites Marx as Foucault." This is because, for Negri, in *Marx Beyond Marx*, history is "reduced to collective relations of force." He continues on to say, "*The Grundrisse* aims at a theory of the subjectivity of the working class against the profitable theory of capitalist subjectivity" (Negri 1991: 94). The point Negri is driving home is that the critique of political economy is essentially a *critique of power*.

Ruminating on the opening pages of *The Grundrisse*, wherein Marx spends considerable time on money before proceeding to capital, Negri (Negri 1991: 21ff) claims that Marx demonstrates his move “from the critique of money to the critique of power.” The reason is that Marx makes “money the representative of the form of value” which signifies “that money is the exclusive form of the functioning of the law of value” (Negri 1991: 24). Negri sees in this a decidedly Hegelian move. To emphasize *money-value* over *commodity-value* (as he does later in *Capital*) is to create an immediate knot between money and value, or between appearance and essence (Negri 1991: 39).

With the money-value knot, there is a purely concrete entity (i.e. money) that “contains all the dynamism and the contradictions of value, as much from the formal as from the substantial point of view, without possessing the abstract void of the discourse of value” (Negri 1991: 39). It is simply in the money-value knot that Negri sees capitalist antagonism directly expressed. What this does is ubiquitize the sites for communist struggle. This is because contestation with capital is not isolated at the point of production, but involves a theory of power and subjectivity as a “microphysics of power.” As Negri (Negri 1991: xvi) declares: “To be communist today means *to live as a communist.*” And to live as a communist today means that there is no striving for a recomposition in a unity, “but that of a multiplicity of needs, and of liberty” (Negri 1991: 14).

Negri goes so far as to claim that *The Grundrisse* doesn't offer a philosophy of history at all. There, Marx (1973: 88) writes:

Personal independence founded on objective [*sachlicher*] dependence is the second great form, in which a system of general social metabolism, of universal relations, of all-round needs and universal capacities is formed for the first time. Free individuality, based on the universal development of individuals and on their social wealth, is the third stage. The second stage creates the conditions for the third.

And in response, Negri notes that this is not a philosophy of history but one of *relation*.

For Callinicos (2001), this relationism is a reduction of “history to the clash of rival class wills,” and as such explains nothing. He continues further by suggesting that without an objective elaboration of history as central, struggle cannot be understood. As with Harvey, we are once again brought up to a limit which reveals the ultimate concern:

*the possible*. Namely, for Callinicos and Harvey, how can we justify identifying when and how to act? *When can we seize the possible in order to realize it?*

For Negri and Negri-Hardt (H-N), on the other hand, they eschew an historical dialectic for a monist ontology of power. Why? Because, so long as time is understood as historical, in the sequential sense, then it will be beholden to the logic of the mathematical order that will stifle true freedom. So long as history is defined in terms pertaining to extensional quantification, then all desire for historical change will be subjected to the metaphysics of the possible and The Dogmatic and Moral Image of Thought, which will, ironically, prevent radical change from emerging. This is why Osborne draws our attention to another binary that separates Classical from post-Marxian thought: that between history and events.

### 2.2.3 *Bad Forms v. Good Forms of Time: History v. Events*

Negri hones in on what he sees in Marx as a distinction between bad forms of time and good forms. The *bad forms* of time are those beholden to a logic of historical time that is characteristically extensionally quantified. History, with a capital ‘H’, is the temporal whole that Negri explicitly rejects. The *good forms* are qualitative forms concerned with *the new* as such – events. He maps this distinction onto the Marxian division between capital and living labor; or as we saw above in *Marx Beyond Marx*, between “a theory of the subjectivity of the working class against the profitable theory of capitalist subjectivity” (Negri 1991: 94). This distinction is further drawn across social and temporal lines. Socially we have capitalism v. communism, wage labor v. free activity, alienation v. appropriation, and value v. wealth; whereas temporally we haven quantitative v. qualitative and homogenous empty v. absolute movement of becoming. As Osborne (2008: 17) summarizes, all of this can be understood in Hegelian terms as the bifurcation between bad infinity and good infinity. Further, Osborne claims we can view this in Deleuzian terms, understood as the separation of state v. nomad, molar/paranoid v. molecular/schizo, and time v. space.

However, in a discussion with Deleuze, Negri levels a critique and seeks a conception of events that is not purely an escape, as he sees in Deleuze’s concept ‘lines of flight’. Negri (Negri and Deleuze 2011) asks Deleuze, “Is there some way for the mass of singularities and atoms that we all are to come forward as a constitutive power, or must we rather accept the juridical paradox that constitutive power can be defined only by constituted power?” Deleuze admits that the challenge of subjective constitution is a problem from the perspective of the event. However, he values the process of creation

that events engender. Negri concurs that events can be creative, but presses further by declaring that there must be a way, as a matter of priority, to conceive of collective struggle in formal terms. Control cannot merely be evaded, but freedom has to be positively conceived as well. This is the path to communism.

This path cannot proceed in strict Marxian terms, as he faults Marx for tying his historico-political critique of capital to the function of time as a measure of value. Instead, for Negri, what must occur is that good forms of time must be set against the totalizing tendency of the bad time of capital. With living labor, a creative and formal conception of subjectivity emerges that is qualitatively opposed to the strictly quantitative foreclosing logic of capital. This emergent subjectivity is what he and Hardt would later identify as the *multitude* (Hardt and Negri 2004).

This emergent subjectivity is not reduced to labor power by the analytic of capital. But, in a moment of *displacement*, the very dialectical reproduction of capital's subordinating tendency is dissolved, as both synchronic structures and diachronic movement are unified. The result is that the dialectical reproduction of power asymmetry loses its totalizing capacity, leading to the emergence of a new form of time, a good form of time; one characterized by social composition rather than "the totality of exploitation" (Negri 2013: 80).

Temporally speaking, this constituent power is de-totalizing, which produces "the emergence of plural, multiverses and mobile times of subjects [emphasis in original]" (Negri 2013: 54). This is the emergence of what he calls *irreversible times*. This is contrasted with what he sees in Classical Marxists who advocate only for the reversibility of time which relates to the shift in distribution of the time-value flow of capitalist development. But, for Negri, time and value are tautological, and as such, constitute the regime of *real subsumption* that constitutes the global order in terms of the bad form of time. Therefore, contestation must be drawn on a qualitatively different time register: namely, that of *irreversible time*.

Irreversible time is consubstantial with but constitutively opposed to capitalist reversibility.<sup>22</sup> As Negri (2013: 47) asserts, it is time that is "the real material from which communism is constructed." And because this moment is a *displacement*, it is unconscious, which means it is not ensnared by either the logic of capitalist reason, nor the desire for a 'strategic reason' to be able to pre-identify the opportune moment to act. Therefore, what Negri (and H-N) offer is a theory that is at odds with a dialectical logic of

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<sup>22</sup> It is worth noting at this point that he also draws from Benjamin's conception of time.

History, and that also seeks to substantiate emergent forms of positive liberty, that think subjective constitution in temporal terms that are not extensionally quantified.

It is at this juncture between Marxism and post-Marxism that we turn to the work of Moishe Postone. The reason is that Postone deeply ruminates on temporality as a central feature of capitalist social formation. Working through ambiguities across Marx's oeuvre, he emphasizes time as a condition of commodification as the key to understanding Marx's *Capital*.

## 2.3 Postone: Beyond Marxism and Post-Marxism

### 2.3.1 *The Twofold Character of Labor: Postone Contra Lukács and Traditional Marxism*

Postone (1993) grounds his engagement with *Capital* by distancing himself from what he calls 'traditional Marxism', most notably in the thought of Lukács. His critique is highly theoretical and centered on Lukács opposing the "static quality of abstract time to historical process, as if the latter, in and of itself, represents a noncapitalist social reality" (Postone 1993: 215, footnote 109). By opposing a pure qualitative outside of time to a degraded conception of capitalist social formation via quantifiable abstraction, Lukács posits a metaphysical domain open for a subject position to assume, wherein the proletariat can critique capital from a special vantage (Postone 1993: 82). At issue is the romanticism Lukács affords the proletariat.

However, the opposite of capital is not labor, for Postone. Labor is, in fact, an expression of capital. So the proletariat *in se* cannot be the expression of the break or the gap in the totality; it is a reinforcement of it. Therefore, Postone undertakes an immanent critique of capital, not from the standpoint of labor but as a critique of labor itself. This is because an objective conception of labor remains trapped within the framework of bourgeois political economy, and fails from the outset from being able to investigate the 'hidden abode of production'.

What makes Marx's project unique, for Postone, is his use of the concepts of political economy but in a critical manner. Marx's categorial analysis insists that there is a twofold character of labor: concrete, useful labor and abstract labor. These two are not opposed but attest that labor is internally contradictory (Postone 1993: 144). What this means is that the contradiction is not between capital and its putative outside, labor. The contradiction is internal to the capitalist system itself. John Milbank makes a similar point that capitalism does not "necessarily and contradictorily produce a subject antagonistic



to itself.” However, his argument is built on the claim that alienation does not imply a concealment of subjective freedom, primarily because

even the conditions of appropriated labour under which the labourer is deprived of a part of the value of what he produces can come to be increasingly assented to by the labourer, who thereby makes a continual choice for the regularity, predictability and ease of commodity production, and the security, relaxation and leisure which the wage labourer may (in recent capitalism especially) come to enjoy (Milbank 2006: 188).

But, for Postone, it is not that the laborer comes to enjoy commodity consumption which pulls fidelity inward, but because of the process of abstraction that *objectively* transforms labor under the regime of capital. Marx call this “real subsumption,” and Postone (1993: 348) refers to it as part of the law of history that is a “dialectic of transformation and reconstitution.”

### 2.3.2 Postone and the Dialectic of Transformation and Reconstitution

Real subsumption is aligned with the production of relative surplus value in *Capital*. Marx distinguishes between absolute and relative surplus value in this way: “The production of absolute surplus-value turns exclusively upon the length of the working-day; the production of relative surplus-value, revolutionizes out and out the technical processes of labour, and the composition of society” (Postone 1993: 348). This transforms the mode of production itself from formal to real subsumption. Postone states that this transformation makes human labor the object of production. What he means is that “concrete proletarian labor acquires materially the attributes that Marx accorded it logically at the beginning of his analysis of the valorization process.” It is real subsumption that is the “specifically capitalist mode of production” (Postone 1993: 348). Postone emphasizes that Marx is noting how value and capital mold the very processes of production from start to finish. This means that the fundamental contradiction in capitalism is not between industrial production and capitalism, as though one were contrary to the other. No, the fundamental contradiction is “within the capitalist mode of production itself,” which Postone is quick to note undermines traditional Marxism’s (and Lukács’) privileging of the working class in the transition to socialism.

For Postone (1993: 348), this entire process that culminates in the real subsumption of labor under capital is a materialization of the twofold movement of labor’s

internal contradiction. This contradiction is between the labor of the isolated individual and its social form of abstract generality. As the materialization of the twofold, real subsumption constructs capitalist society in such a way that social forms are constituted by commodified forms of practice, which in turn transform practice and thought in the image of value. Because of this internal contradiction, capitalist society is a totality that is inherently dynamic. This dynamism of the twofold is what inaugurates the possibility of Marx's investigation into the movement of capital, starting with the commodity, which presents itself in its dynamic form through the lens of critique.

From here, Marx analyzes the twofold's externalization as money and commodities. They are expressive forms of value in motion. Capital is not a static substance, but is a "category of movement, of expansion." Postone remarks that it exerts a "mode of abstract compulsion and constraint on people." So, he can speak of capital as the self-moving substance that is Subject, precisely because of its transforming power to subsume labor (in its twofold dynamism) and put this social form to further work for capital by producing further value forms. Thus, Postone identifies Marx's critique as *categorical* precisely because his project is concerned with the categories of bourgeois political economy as expressions of value – i.e. value forms. And it is the category of capital that is the "central category of a society that becomes characterized by a constant directional movement"; this movement itself characterized by "efficiency, rationalization, and ongoing transformation" (Postone 1993: 272).

What is most important, for Postone (1993: 269), is that we understand that, "*This expansion, this ceaseless motion is, within the framework of Marx's analysis, intrinsically related to the temporal dimension of value* [emphasis in original]." It is as time is perpetually transformed and reconstituted as the general form of all labor and value that real abstraction is proliferated. However, there is a sense in which this tendency is never fully actualized. That is, there is a sense in which the ceaseless motion, the expansion of capitalist abstraction (even as real subsumption materializes the twofold movement via its expression in money and commodities) still remains *virtual*.

In the post-Lukácsian landscape, there are two general camps that extend Lukács' theory of reification: on one hand, we have those like H-N, who focus on the early Marx and therefore on real subsumption in more subjective and ideological terms; the other grouping fits with Postone and emphasizes the proliferation of real abstraction as the dominant social relation in abstract temporal terms. The former grouping intends stronger towards the virtual, whereas Postone *et al.* emphasize the actual.

It is the eventual possibilities that mark the H-N position as unique from Postone's. That is, H-N refuse to accept a conception of time that is extensionally quantified, precisely insofar as their monism allows for virtual shifts of intensive variation to express qualitative breaks from outwith the domination of capitalist totality. By contrast, Postone sees the motion of capital as unceasingly constructing its own conditions for reproduction, but without admitting as easily a theory of its overcoming. As he writes,

because the dialectic of transformation and reconstitution not only drives productivity forward, but also reconstitutes value, it thereby also structurally reconstitutes the necessity of value-creating labor, that is, proletarian labor. The historical dynamic of capitalism, then, increasingly points beyond the necessity of proletarian labor while reconstituting that very necessity (Postone 2017: 50).

This process is a global historical dynamic, driven by an "accelerating increase in productivity." But what makes this accelerative process most problematic, for Postone, is precisely its temporal nature, that "value is a temporal form of wealth. As a result, the valorization process transforms production into a peculiar process, whereby – beneath the surface of material production – matter is transformed into units of abstract time" (Postone 2017: 49-50). And these units of abstract time are the moments of profit of which Marx speaks. *Therefore, real subsumption, for Postone, is the perpetual process of capital's transforming activity of abstract temporality through the construction of moments for profit.*<sup>23</sup>

This results in an actual totality, one that does not easily articulate ruptures (as in the more virtually focused work of H-N). We might say that if H-N de-emphasize the historical, Postone intensifies the historical to the point where it is no longer history but logic.<sup>24</sup> While both stand in the Lukácsian legacy, H-N emphasize subjectivity and rupture, whereas Postone emphasizes objectivity and reproduction. This is most fundamentally related to their divergent conceptions of temporality. We have already seen how H-N refuse the extensional logic of dialectical historicism, in favor of theorizing qualitative

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<sup>23</sup> To speak of units here is to speak of the number 'one'. For Plato and Aristotle, the number one erected a foundation for a discrete ontology. This unitary ontology asserts that a sense of a prior unity has to be fixed in order to account for any object's existence. As Gabriel (2015) explains, "The metaphysical idea behind this is that to exist is to be a unified object, an individual." This is something that we will return to, especially in the relation between discrete ontology and the construction of a totality.

<sup>24</sup> He admits as much when he speaks of the flow from commodity to money to capital as being a logical chain, not an historical progression (Postone 1993).

shifts of novelty – i.e. events. Postone similarly regards sequential historicism as inadequate, however precisely how he conceives of the temporal dynamic at the heart of capital's movement still needs to be revealed.

### 2.3.3 *The Accelerative and Integrative Logic of the Capitalist Dynamic*

Postone articulates a totality that is historical, but dialectically so. His effort is to think of historical time as the dynamic, logical product of the twofold of labor in temporal terms. That is, the twofold, concrete labor and abstract labor, correlate with concrete time and abstract time.

However, Osborne (2008: 19) critiques Postone precisely on this point, by noting that, in *Capital*, “abstract labour is not simply concrete labours as ‘measured’ in time.” Abstract labor is not concrete labor + abstract time. More fundamentally, the very ‘time’ of labor-time is not separable from labor as though it can be abstracted from it. This is because time is “part of the *life-time* of the labourer” (Osborne 2008: 19). Osborne brings Heidegger's being-towards-death in to supplement his reading of Marx, where the latter speaks of the ‘plea of the worker’ in the section “The Limits of the Working Day” in *Capital*. It is the phrase of the worker, “I *must* be able to reproduce it every day, thus allowing myself to sell it again” that Osborne sees as key. The point being that this ‘*existential* imperative’ threatens the permanent eradication of life itself under the weight of the law of value.

Thus, the value of the life that is threatened is what manifests in Marx's negative conception of value, whereby the value of *life-time* is deemed valuable precisely because *life-time* is a precious, scarce resource. When the worker agrees to sell their *life-time*, they are giving up substantial portions of their very finitude. This is what yields value in its expenditure as expended labor-power, and this is also why the LTV is always-already a theory of class struggle (Bidet 2007: 12). This is so because the “substance of value is defined as the expenditure of labour-power” (Bidet 2007: 17). Or, in connecting this with Osborne, the substance of value is the expenditure of *life-time*. Thus, as Negri notes, what Postone calls the twofold is not merely an economic transformation, but is necessarily political.

Viren Murthy (2009) defends Postone from Osborne by asserting that Osborne fundamentally misunderstands Postone's project not as an investigation into the ontology of time, but rather as a denial of such transhistoricity. For Murthy, Osborne demands too much in seeking a conception of time that is either ontological or conceptual. Instead, he claims, Postone's project is simply concerned with historicizing “the production of

ontology and the concept of time” (Murthy 2009: 20). However, what is at issue, for Osborne, is that Postone offers no *concept* of historicity itself. Postone claims repeatedly that Marx’s project is an ‘historically specific social theory’, but never substantively provides a concept for what this means. He merely claims that Marx’s theory is a fundamental break with the philosophy of history and the transhistoricity of historical materialism of traditional Marxism. However, as George Tomlinson (n.d.) notes, one can only assert historical specificity in relation to a concept of history that makes this specificity intelligible in the first place.

This is why Osborne critiques Postone’s privileging of the “independent variable” of abstract time as “absolute,” over against the “dependent variable” of concrete times. Postone asserts that abstract time expresses “a general temporal norm.” However, to make abstract time expressive of a general temporal norm is to establish a regulative principle of temporality that is both constituted and constitutive. This is not denied by Postone’s elaboration of the ceaseless motion of value through social forms. What is curious is how this temporal norm becomes the concept that is under-investigated, and which serves as the metaphysical background out of which Postone’s project emerges.

For Osborne (2008), no account of Marx’s conception of time can proceed without securing three claims:

- (1) the existence of distinctively social being (this is Marx’s concept of the human);
- (2) a distinctive temporality associated with this social human being (a temporality rooted in social production);
- (3) that this distinctively human temporality is – or at least has come to be – ‘historical’ in the sense associated with philosophical concepts of history

It is the last point that is most important for us, at this juncture. For it is the coming to be of the specifically historical form that Postone’s project poorly addresses. And this is due to his absolutizing of abstract time contra concrete times; whereas for Osborne (2008: 19), it is disposable time in free activity that is absolute, for Marx. He quotes *The Grundrisse* to show how disposable time is not merely the antithesis of surplus time under capital, but “freed from its antithesis to labor-time, since necessary labor-time, now ‘measured by the needs of the social individual’, is taken to be freely embraced as necessary” (Osborne 2008: 21). Here, again, we see the division between a theory that is more inclined towards the actual (Postone) versus one inclined towards the virtual (Osborne).

All this considered, Marx (1973: 535) is clear that labor itself is a positive, creative activity: “Something that is merely negative creates nothing. . . . Labour *alone* produces; it is the only *substance* of products as *values*.” In denaturalizing labor (contra Ricardo), he retains a focus on activity as expenditure as a positive creative projection in itself. Jean Baudrillard critiques Marx precisely on this point for reducing the human to *homo faber*. He refers to Marxism as seeking a “good use of the economy.” Rather than contesting the very forms of bourgeois political economy, “Marxism is therefore only a limited petit bourgeois critique, one more step in the banalization of life toward the ‘good use’ of the social!” (Baudrillard 1991: 136).

Baudrillard’s (1975) critique of Marx’s conception of value starts with his critique of what he sees as Marx’s *coding* of the human in terms of labor, via the ‘mirror of production’. That is, Marx produces the concept and then imposes a specific form of nature onto humanity in the form of productive labor. This is the basis of political economy, for Baudrillard. In doing this, Marx posits that there can only be labor: either qualitatively or quantitatively. But in form, they are both reflections of the mirror of production: the quantitative signifies the commensurability of all forms of labor in abstract value, and the qualitative, which is putatively incommensurate, signifies the comparability of all human practice in terms of production and labor.

A primordial act of inscription has coded human activity, according to the image of capital as supplied by political economy (Baudrillard 1975: 25). Political economy, as a *coding system*, produces the very conception of labor power as the fundamental human potential. However, for Baudrillard (1975: 31), “[Man] is not only quantitatively exploited as a productive force by a *system* of capitalist political economy, but is also metaphysically overdetermined as a producer by the *code* of political economy.” For Baudrillard, Marxism assists the “cunning of capital” by convincing humans that they are alienated by the sale of their labor power, which censors the more radical hypothesis: they are alienated as labor power. Thus, “Marx’s concept of labor must be submitted to a radical critique as an ideological concept” (Baudrillard 1975: 43).

Graham MacKenzie (2015) defends Marx from Baudrillard’s assault, by arguing that Baudrillard’s criticism is already present in Marx’s immanent critique (as found in Postone). However, what MacKenzie misses is that Baudrillard’s criticism is best read as a critique of the post-Kantian tendency that we’ve noted in the division between time and being. That is, the very dialectical relation between subject and object (i.e. time and its objectification) presumes a metaphysical relation between essence and appearance that

creates a progressive dynamism by making (abstract) time the formal condition of commodification, and the ceaseless movement of value in motion.

Tying this further with Osborne's remarks about the post-Kantian landscape being concerned with the management of temporality via the construction of an internal subject whose primary concern was handling multiple singularities, we can see the post-Kantian legacy inflected in Marx's construction of a temporal theory of value and labor. The construction of *homo faber* in political economic terms, sets the condition for a putatively disenchanted rational subject that is able to come into its own through a better form of social production. However, for Baudrillard, it is the very conception of production itself that is necessarily wedded to a pre-coded conception of temporality that prevents the Marxian logic from its stated purpose. This is because production, *per se*, speaks of extensional quantification, through the accelerative and integrative logic of the capitalist dynamic. Or, if we fear the word production is still too ignorant of Postone's intervention, we can say that *the arrow of time per se is informed by extensional quantification and the logic of the possible, which accelerates and integrates via the ceaseless motion of capital*. And even Postone's appeals to the logical rather than historical sequence don't immunize him from this tendency. This is why Marx (1973) speaks of the *measure* of wealth even when speaking of disposable time. For, while Marx does not conflate wealth with value, there is a sense in which both are calculable *under a regime of measurement*, which requires the objective priority of a mathematical order.

That said, as Mandel (1991: 18) reminds us, "For Marx, the problem of value as an embodiment of abstract human labour is not a problem of measurement, of *numeraire*, but a problem of essence." In order to understand what this means and how to address it, we need to investigate the fetish forms of value themselves.

## **2.4 Towards a Marxian Theory of Finance: Time, Value, and Real Subsumption**

### *2.4.1 Capital's Fetish Forms*

Stavros Tombazos (2014: 6) claims that "capital is, precisely, a *conceptual* organization of time." Working within the trend of New Hegelian Marxism or New Dialectics, Tombazos claims that the homology between Hegel's *Logic* and *Capital* is most stridently seen in the concept "the organic time of capital" which unifies the time of production and the time of circulation. This concept is the "time of capital" (Tombazos 2014: 35). Tombazos (2014: 75-79) claims that the shift from simple commodity

circulation to the circulation of money-capital correlates with the shift from chemism to teleology in Hegel's *Logic*. For Hegel, this shift is one from processes, to purposeful activity. With *mechanism*, there is only external relationality between objects. *Chemism* introduces internal relations, but without purpose. It is only when *teleology* is introduced that nature becomes conscious of itself. Tombazos shows how, for Marx, once money-capital is introduced, circulation not only presupposes but it also posits the conditions by which needs can and must be satisfied. This is capital become *self-expanding value*.

That said, it is the Second Volume of *Capital* that provides the key for Tombazos' understanding of the full development of capitalist social formation. *Total social capital* and its triple autonomous movement of money capital, productive capital, and commodity capital are the fullest expression of the life of capital (Tombazos 2014: 144). Following Hegel's syllogism of universality, particularity, and singularity, Tombazos maps money, the commodity, and production. This is the "syllogistic structure of capital" and it bespeaks of capital's purposive activity as a living being divided into three processes: 1) the circuit of productive capital (singularity/conservation of value), 2) that of commodity capital (particularity/self-control of value), and 3) that of money-capital (universality/valorization of value) (Tombazos 2014: 140).

In Marx's (n.d.) most complete statement on total social capital he details how the unity of these three processes characterize total social capital:

The total circuit presents itself for each functional form of capital as its own specific circuit, and indeed each of these circuits conditions the continuity of the overall process; the circular course of one functional form determines that of the others. It is a necessary condition for the total-production-process [*Gesamtproduktionsprozeß*], in other words for the social capital, that this is at the same time a reproduction-process, and therefore the circuit of each of its moments. Different fractions of the capital successively pass through the different stages and functional forms. Each functional form thus passes through its circuit simultaneously with the others, though it is always a different part of the capital that presents itself in it. A part of the capital exists as commodity capital that is being transformed into money, but this is an ever-changing part, and is constantly being reproduced; another part exists as money capital that is being transformed into productive capital; a third part as productive capital being transformed into commodity capital. The constant presence of all three forms is mediated by the circuit of the total capital through precisely these three phases.



As a whole, then, the capital is simultaneously present, and spatially coexistent, in its various phases. But each part is constantly passing from one phase or functional form into another, and thus functions in all of them in turn. The forms are therefore fluid forms, and their simultaneity is mediated by their succession. Each form both follows and precedes the others, so that the return of one part of the capital to one form is determined by the return of another part to another form. Each part continuously describes its own course, but it is always another part of capital that finds itself in this form, and these particular circuits simply constitute simultaneous and successive moments of the overall process.

It is only in the unity of the three circuits that the continuity of the total-process is realized...total social capital always possesses this continuity, and its process always contains the unity of the three circuits.

It is this syllogistic unity of total social capital that prepares the ground for a material investigation into the logic of finance in Marx. For, it is the unity of total social capital that bridges the gap between the first elaboration of capital as self-expanding value in Volume One and price as the “surface of society” in Volume Three. By the time Marx (1991: 117) investigates prices of production, he is not formulating a price theory, but rather demonstrating how value, as self-expanding, comes to full expression in the unity of the processes of total social capital, which then translates into the ways “the various forms of capital... approach step by step *the form which they assume on the surface of society*, in the action of different capital upon one another, in competition, and in the ordinary consciousness of the agents of production themselves [emphasis in original].”

Elena Louisa Lange (2016) has undertaken an extensive critique of the homology thesis that is central to New Dialectics. Working within a Hegelian frame herself, Lange argues that New Dialectics (notably Chris Arthur) fail to understand the significance of Volume One of *Capital*, decrying Marx for introducing LTV too soon as a pure presupposition that can only be posited. This failure is due to a misunderstanding of Hegel’s philosophical project, which then inflects into a reductive reading of Marx’s supposed Hegelian homology (Lange 2016: 237). Arthur (2004: 85) disagrees with Marx’s introduction of labor so early because, “Bringing in labour too early risks giving the appearance of model-building and committing the exposition to a stage of simple commodity production.” What is most important for Arthur is “conceptualizing capital as a form-determination.”

Lange sees this as a misunderstanding of Hegel's project more broadly, and therefore of Marx's project specifically. For Hegel, there is no such thing as a presuppositionless beginning. Therefore, pure being is already mediated from the standpoint of the whole, which conditions the only way it can be thought. As he states, "Essential to science is not so much that a pure immediacy should be the beginning, but that the whole of science is in itself a circle in which the first becomes also the last, and the last also the first" (Hegel 2010:49). Likewise, Lange (2016: 243) claims, Marx's beginnings with the commodity and value reveal the twofold of labor which serves as a heuristic tool for the entirety of *Capital*, not merely Volume One. Only when we are equipped with this heuristic tool in the early stages of the argument are we able to engage in the rest of the critique of political economy. This is because, to understand *Capital*, we need to understand how LTV is an "enigma machine." Her invocation of this term from Turing is apt in that LTV *decodes* the fetishized value forms that obscure the process of production (Lange 2021).

In fact, for Lange, *Capital*, as such, is a critique of the tendency towards fetishizing: how this happens under capital; to what effects; how it is historically specific (i.e. distinct from previous modes of fetishizing); etc. If we do not begin with this understanding, then we rob *Capital* of its very *raison d'être*. She finds fault with the entire Unoist tradition on this point, for whom value is conceived in pure terms, without fetish (Lange 2021: 6). The great error here is that such theorizing views money in non-essential terms; whereas, for Lange (2021: 158, 222 *et al.*), money must be conceived in Marx's analysis as a fetishized value form necessarily tied to abstract labor. Therefore, her focus is on the ways that *fetishism applies to all the categories of bourgeois political economy*, as they are all based on simple and equal exchange as the basis of the capitalist metabolism. In value's self-expansion, it shows itself through increasing levels of obfuscation, from the commodity, to money, to capital, then on to profit, commercial capital, and finally interest-bearing capital, where "the capital relationship reaches its most superficial and fetishized form" (Marx n.d.). It is, therefore, the social form/formation of this *fetish tendency* that drives Marx's inquiry, so that he might unveil the intensification of labor exploitation through the accelerative, integrative logic of value's self-expansion. For Lange, LTV is, thus, akin to Turing's Enigma Machine, in that it decodes the relation between appearance (value forms) and essence (value).

Like Hegel's admitted circular beginning to *The Science of Logic*, Marx is aware of the presuppositions in his starting point in *Capital*. Like Hegel, he presupposes the entire analysis at the outset. As he states, "The whole system of bourgeois production is

implied, so that exchange value can appear as a simple point of departure” (Marx 1987) And again in *Capital*, he reinforces this point. As Bidet affirms, “We are first presented with what in *Capital* is called abstract labour, in the following terms: ‘uniform, homogeneous, simple labour’, ‘simple labour, labour, so to speak, without any qualitative attributes’” (Bidet 2007: 15). As the project unfolds, through ever-complex stages, the value forms signal the dialectical progression of the concepts of bourgeois political economy. The relation between essence (value) and its determinations (value forms) becomes progressively complex, but also intensely more potent. As a tool, LTV reveals the internal logic of the movement of capital’s process from simple to complex which intensifies the internal contradictions of capital itself, in the increasing disconnect between the value of labor-power and value produced.

But it is *not* labor that is essence, for Marx. As Postone rightly emphasizes, labor is an expression of capital. The essence is *value*, precisely because it is the abstract, temporal nature of capital that produces value in measurable forms. So, capital moves, from value to value, insofar as the appearances of the fetish forms express value in capital’s expansion. The appearance of the fetish form is not akin to false consciousness. It is better to think of appearance as expression. It is the singular-universal that both is and is not what it is. That is, the singular form that is taken as given, is that object; however, what that object is is a complex manifold of social relations that make up also what it is not. This is because the universal is not fully expressed in the fetish form, but is also not eradicated. Thus, the commodity is never *just* what it is, but conceals a universality.

With that said, let’s take a brief moment to pause and clarify a few points. Section 2.3 concluded by exploring the accelerative and integrative logic of capital in temporal terms that are conceived as *extensionally quantified*. Section 2.4 has so far extended this by looking at capital’s fetish forms as appearances of the essence of value: capital’s accelerative and integrative temporal logic moves from value as self-expanding, through to total social capital, and culminates in the fullest expression investigated in the fetish forms of value. But what of finance specifically? What have we learned about Marx’s conception of finance by lingering on these discussions on time, space, place, abstraction, history, events, essence-appearance, etc? In fact, everything we need for the present investigation. More than ‘profiting without producing’ (Lapavitsas 2013), finance is an integral expression of the productive flow of capital as such. Centering it in this way gives us insight into the Marxian logic of financialization as the highest form of rationality of the accelerative, integrative logic of capital.

#### 2.4.2 *The Accelerative, Integrative Logic of Finance Capital, or Financialization*

For Costas Lapavitsas (2013), finance is not productive because it does not operate as production, but in circulation. Following Baran and Sweezy, financialization, for Lapavitsas, is the transformation of ‘the conduct of non-financial enterprises, banks and households’ due to the stall in productivity that negatively affected the rate of profit, all resulting from a failure of surplus absorption. Central banks stepped in as the “dominant public institution of financialization, the defender of the interests of the financial sector” (Lapavitsas 2013: 3). Here he echoes Marx, for whom the central bank was the greatest of capitalist powers, driving the shift in emphasis from production to circulation, through the reinstatement of ancient predatory forms of financial usury, which siphon profits from loanable capital.

The narrative Lapavitsas paints is one of a structural transformation of capitalism. Finance does not produce because it can only redistribute surplus-value through trading loanable money capital. This “financial expropriation” is thoroughly temporal, as profit “depends on the difference between a fixed financial parameter and its uncertain value in the future” (Lapavitsas 2013: 6). What is more, for Lapavitsas (2013: 17), financialization is seen as a more potent concept for understanding contemporary capitalism than is globalization, as financialization is the “decisive way of absorbing the investible surplus that inundated the sphere of production.”

This reading is indebted to Hilferding’s (2006) first great feat to bring finance under the microscope of a Marxist analysis. For Hilferding, finance is a great organizing power that draws territorial lines for the ultimate benefit of domestic industrial and banking capital. Hilferding seeks to give reason to the shifting dynamisms of capitalism at the end of the 19th and beginning of the 20th centuries. While his work is the first sustained Marxist analysis on finance, it is less concerned with the logic of finance *per se* than it is with extending and applying Marx’s investigations into finance as sketched in *Capital*, to further explain the historical development of capital. Finance comes to be seen more as a tendency of capital’s organizing principle than anything. Thus, the logic of finance is viewed in historical terms, as contributing to the unceasing movement of value in motion.

For Hilferding, this takes place through an amalgamation of banking and industrial capital. Lapavitsas (2013: 45) tells us that, for Hilferding, “as the size of capitalist production grows monopolies come to depend heavily on investment credit provided by banks. A close relationship thus ensues between banks and industry, eventually leading to the emergence of finance capital.” But banks are not mere players in this shifting

development. They come to be more and more integral to the movement of capital. Thus, the transformation of the capitalist mode of production is towards greater monopolization and therefore banking power. As Hilferding (2006) states, “by increasing its own capital the bank is able to participate more fully, and on a more enduring basis, in industrial enterprises, eventually establishing control over them; and can exert a stronger influence upon speculation in commodities and securities.” This results in an incentive to increase banking capital, which works as a self-feedback loop, reinforcing the expanding power of finance.

The mechanism that is operable here is one of *conversion*. Through a ‘purely juridical transaction’, banks convert deposited money capital into bank capital by issuing shares. This creates fictitious capital as a claim on surplus value. Only if the bank profits will they increase their bank capital, because then they can justify the creation of more capital for speculative investment without assuming greater risk (Hilferding 2006). This leads to more industrial investment and the ever-increasing need for issuing more shares, tied to the expansion of bank capital. The supply and demand of money capital is unaffected by this, which means that interest rates aren’t influenced by this activity. This is because only the distribution of profits is affected, which derive directly from industrial activities. The conversion of money into fictitious capital feeds back into industrial capital in the form of investment. This process, then, leads to a shift in property relations, as the bank has now become a co-owner of the industrial enterprise.

Our primary takeaway is that through this process of technical conversion there is a shifting site of institutional control. Hilferding introduces the financial industry as the central driver of the technological machine of capitalist social formation. The ultimate question, for Hilferding, is not ‘what is finance?’ but ‘how does finance change the capitalist mode of production?’ And his answer is that finance creates the conditions for organizing capitalist property-power in ways that exponentially increase the tendency of capital concentration under the expanding powers of financial operations. It is with this that Hilferding gives us the first full set of parameters for developing a Marxian theory of financialization.

This narrative has been contested by many Marxist theorists. Most notably, Baran and Sweezy argue that Hilferding confuses a specific historical situation with a structural feature of capitalism. At issue is that between *what finance is* and *how finance transforms*

*capitalism*. While Marx painted with broad strokes to describe what finance is in *Capital*,<sup>25</sup> Hilferding inaugurated the other tendency, which we might call Marxian theories on the financialization of capitalism. This does not mean Marx was not also interested in how finance capital differed throughout its historical forms. However, what it means is that Marx was more interested in examining the credit system under capitalism *from the perspective of its expression of value in the particular complex fetish form of finance capital*.

This is what leads Schumpeter (1954) to refer to Marx's theory as a "monetary theory of credit." By prioritizing money as value form, with credit piggy-backing off of it, Marx paints a picture of a tiered system, with value moving through the expressions, conditioning their determinate forms. The forms, as expressions of value, appear in different guises, to varying effects, but ultimately guided by the unique, tendential, homogenizing ontology of capital. This view is contrasted with credit theories of money that invert the relationship between money and credit, and give place for a theory of money that is not an expression of value as it moves through commodity exchange.

However, for Marx, there is a clear chain from value through value forms, to more complex value forms. This is why Marx views finance capital as a higher rationalization of the process of accumulation: it brings the monetary operations of industrial and commercial capital together, and therefore accelerates the movement of value (Manigat 2020). In Marx's (n.d.) words, the credit system is the "specific machine for the concentration of capitals." This is because finance capital "signifies the unification of capital" (Hilferding 2006).

Postone speaks of this accelerative, integrating tendency as perhaps even signaling a path beyond capitalism. The accelerating logic of finance capital, as it ever-intensely financializes capital's movement, creates a world of global coordination through the construction of "supranational rather than international" order. As new forms of wealth are generated, more wealth is created apart from the production of surplus value. Financial capital, then, comes to become more separated from the value production process, and creates "its own realm of wealth production" (Postone 2017). As Maria Ivanova (2013: 61) declares, finance "strives incessantly to free itself from the monetary base." Not only will this create more crises for the capitalist mode of production (because

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<sup>25</sup> There is notable hesitation with analyzing Part V of Book 3 of *Capital*, as Engels noted that these were the least developed manuscripts of Book 3. That said, 'interest-bearing capital' has been often translated simply as 'finance capital' (see, for ex, Cohen-Salal and Badia's translation of *Capital*).

debts increase exponentially in relation to surplus value), but the time horizon becomes more explicit.

For Postone, finance operates by a promise that at some point in the future there will be enough wealth to cover the debt. However, that horizon is constructed by the rates of wealth production that value production can't keep up with, thereby perpetuating the expansion of the realm of wealth vis-a-vis value. Thus, the time horizon of which Postone speaks is explicitly characterized in sequential terms. Though it is *constructed*, and though the horizon recedes, the relationship posited is between a sequence of presents: the present-future (i.e. the future from the perspective of the present) and the future-present (that present that will come). These two time dimensions are paradoxically related. And we will discuss them further in Chapter 4 in the work of Elena Esposito. For now, what we can say is that this conception of time is historical, in the sense that we've been discussing in this chapter. And this historicity is both accelerative and integrative in extensional terms.

Further to this, Ivanova presents a picture of finance primarily as a mechanism that allows for capital to find new areas for accumulation.<sup>26</sup> Following Marx, she claims that while crises appear as liquidity problems, they are, in fact, problems of value production. The real issue is that of the "formation of surplus capital relative to the opportunities for its employment" (Ivanova 2013: 61). In other words, over-accumulation. Two strategies are employed to mitigate the fallout: 1) the reorganization of the labor process (domestically and globally) and 2) the spatial and temporal restructuring of production and exchange. This has taken place in recent years through the link between the "export-driven industrialization of the periphery and financialization in the core." This creates a mutually enforcing feedback that accelerates and integrates. As she notes,

[The] globalization of production and the financialization of the U.S. economy have been linked via two main channels. First, U.S. transnational companies have employed the formidable profits generated through offshore outsourcing of their

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<sup>26</sup> Rosa Luxemburg (2022) makes a similar point: "For the accumulation of capital, the loan has various functions: (a) it serves to convert the money of non-capitalist groups into capital, i.e. money both as a commodity equivalent (lower middle-class savings) and as fund of consumption for the hangers-on of the capitalist class; (b) it serves to transform money capital into productive capital by means of state enterprise-railroad building and military supplies; (c) it serves to divert accumulated capital from the old capitalist countries to young ones. In the sixteenth and seventeenth centuries, the loan transferred capital from the Italian cities to England, in the eighteenth century from Holland to England, in the nineteenth century from England to the American Republics and Australia, from France, Germany and Belgium to Russia, and at the present time [1912] from Germany to Turkey, from England, Germany and France to China, and, via Russia, to Persia."

production activities to engage in lucrative financial operations at home. This business model has produced a combination of rising trade deficits and financial asset appreciation in the United States. Second, a generous portion of the earnings of the export-oriented periphery has been reinvested in U.S. Treasury securities, further boosting domestic consumption, credit expansion, and asset price inflation (Ivanova 2013).

This co-constitutive relation between export-driven production and financialization has many effects. Most notably, in the context of the present study, we can note that, for Ivanova, crises are mitigated by the perpetual restructuring of the relation between these two channels. However, the “imbalanced system of global accumulation” that she analyzes reveals something key for us in a chapter on Marxian finance theory. Namely that, contrary to Lapavitsas’ emphasis of financialization over globalization, finance is a *topological technology*, that operates via the *conversion* of land, labor and capital. This is what we mean when we speak of the accelerative and integrative logic of finance, in Marxian terms.

Thus, from Hilferding to Lapavitsas to Postone, there is a consistency with how finance capital operates as an expression of value: namely, *finance is a temporal mechanism oriented to the future, as an accelerative and integrative dynamic of capital expansion*.

Tying this to the previous sections above, we can think of this in Hegelian terms as the expansion of capital through the *proliferation of fetish objects*. These are the financial *techné* that accelerate the dynamism of value in motion, in the construction of a capitalist *topos*. This is how we can now deploy Lange’s terms in the language of the present project: *finance is a regime of fetish objects that work towards the intensification of the dialectical flow of capital*. They are *techné* that impel and inform the unceasing movement of which Postone speaks, that pertains to the internal contradictions of the temporal dynamic of value. *Finance then, in the form of its fetish objects, is for a Marxian theory of finance the most potent technological form for the movement of money generating more money*. And this is built into the very simple part of Marx’s investigation as the germ of what is more fully elaborated by the time he investigates finance capital, since the capitalist doesn’t only purchase labor as such (and therefore the abstract time of labor constituted under the regime of value), but also always-already makes a speculative purchase by buying surplus value (which is a measurable temporal quantity).



It is this speculative purchase that that sets up Marx's theory of desire that is related to a logic of extensional quantification. That is, the desire in the speculative act relates to the separation between a now and possible-now. This is Marx at his most reductive. For, it is not materialism as such that is reductive. In fact, a materialism constructed through a rigorous elaboration of social relations and internal relations is quite robust (Smidt 2019). Where we run into the limits of a mathematical order (in Bergson's sense), or the schema of the possible (in Deleuze's sense), or more generally of the logic of extensional quantification, is precisely at the very beginning of *Marx's philosophical decision*, where we find a dualism between time and being that is tied to a logic of extensional quantification.

#### 2.4.3 Finance as Real Subsumption

Marx retains a dualism in the core of his thought that is tied to a logic of extensional quantification: a separation between time and being. But rather than the single Cartesian subject, it is capital itself that becomes the world historical Subject. Marx (n.d.) claims that value presents itself as a self-moving process. Postone (1993: 75) comments that, here, Marx is explicitly characterizing "capital as the self-moving substance which is Subject.... His analysis suggests that the social relations that characterize capitalism are of a very peculiar sort – they possess the attributes that Hegel accorded the *Geist*." Robert Albritton claims that this is what gives capital its unique ontology. Between Althusser's scienticity and Derrida's antiessentialism, Albritton (1999: 13) follows Postone in arguing that capital has a unique ontology that "Despite the multiplicity of forms, there seem to be certain persistent forces or logics at work that tend to homogenise social relations in capitalist societies, even if they fall short of ever achieving full homogenisation." Capital is Subject writ large, for Albritton, while it makes objects of subjects. This process has resonance with Jason Moore (2016) who has forcefully argued that capital puts resources to work for its furtherance, through a primary act of conversion, whereby previously unincorporated things are turned into cheap inputs that then express the rational logic of capital in their social form.

The consistency we see here is that capital as Subject does not overcome the liberal legacy of Kant, but transposes the site of subjectivity from the singular or personal to the world historical. In creating a world apparatus that is Subject, the unique ontology of capital erects a zero-point much in the manner of Cartesian subjectivity (Castro-Gómez 2021). The relation between time and being that Osborne notes as being the hallmark of post-Kantian philosophy is now projected onto history writ large. Capital manages *time*

through the management and construction of singularities according to a logic of extensional quantification that leads to its capacity for endless integration; and it produces *spatial* configurations wherein its operations can continue to accelerate. *Time and space* have become new transcendental forms of experience for the Subject that is capital. They operate as the conditions of possible historical experience under the regime of capitalist social formation.

Finance functions as the most intense fetish form of this operation. It is the logical *denouement*, we might say, of the general law of accumulation. As Robert Meister (2013: 70) shows, finance is introduced into the market mode of production as a way to increase relative surplus value through investment in productive technologies. How this takes place with finance is, once again, through the accelerative and integrative temporal logic of capital.

In a scathing critique of “the romantic Adam Müller,” who claimed that “In determining the prices of things, time is not considered; while in determining interest, time is the principal factor,” Marx (n.d.) retorts, “the time of production and the time of circulation enter into the determination of commodity-prices, and how this is just what determines the rate of profit for a given period of turnover of capital, whereas interest is determined by precisely this determination of profit for a given period.” The point to takeaway is that the temporal logic of value is not different from the temporal logic of finance. Rather, the latter is better seen as a culmination of a tendency present from the very opening of Marx’s investigation into capital. Meister (2013: 71) makes this clear when he speaks of Marx’s anticipation of modern finance theory:

We can see that in embryo the pure financial asset was present at the very start of capitalism if we remember that capitalist commodity production could be financed (for the purpose of advancing rent, wages, etc.) and that its by-product was a debt secured against a future commodity. The ability of the capitalist to pledge his future commodity as collateral meant that his product, more precisely his right to appropriate the surplus from it, was already capital even before it was a commodity. This explains why he could always have financed commodity production and is one reason Marx called his book on the commodity form “Capital.”

Benjamin Lee (2016: 133) extends this idea further when he intuits that there is “something like a derivative relationship... already in the simple form of value [ex. 20

yards of linen = 1 coat], which is the first ‘stage’ on the way to money.” What he means is that the simple form of value is a ‘derivative’ in that the relative form (20 yards of linen) of value derives from the equivalent form (1 coat), “which manifests what is ‘immanent’ in the relative form but which the relative form cannot itself express (i.e. its value)” (Lee 2016: 132). To say that the equivalent form ‘manifests’ what is immanent in the relative form is to speak of the expressive appearance of the commodity. Therefore, if the relationship between essence and appearance can be understood as that between Subject and object (i.e. capital and its expressions), then we can think of the derivative logic of the form of value as a complex fetish of the underlying process as the capital Subject sets objects into itself.<sup>27</sup> By this logic, the derivative is not fictitious, but is a higher rationalization of the organizing tendency of financialization to create the conditions for the production of relative surplus value. Lee is arguing directly against Postone here, for whom finance creates wealth but is not productive of value, thus severing the tie between essence and appearance, by banishing finance to the realm of circulation. However, as Lee suggests, ought we not see derivative finance, in particular, as “initiating the ‘real subsumption’ of production by circulation”? What this indicates is that the derivative, as a form of financialized money, organizes the conditions of total social capital in its syllogistic unity (money, productive capital, commodity capital). Finance, then, is not understood as being separate from value, but rather as expressive of it.

More than merely investing in productive technologies, finance has a direct relation to value. This does not negate its fetish form, as Lee and Meister might suppose. But it does reframe how to understand the fetish forms beyond a Postonean critique of the fetish as an idolatrous form of mediation (Meister 2020). While Lange still speaks of the fetish form in terms of falseness, the point, for us, is not that the fetish forms conceal the Real that would otherwise be expressed, but rather that the fetish forms operate at the level of fantasy (Tomšič 2015).

Samo Tomšič (2015) asserts that finance is fictitious and thereby refers to the supposed suprasensual source of value that exists beyond the sensual, beyond the empirical reality of commodity relations. What we would rather suggest is that finance is fantastical, but so too are commodity relations. This is the core of what it means to speak of real subsumption; for, the Subject of capital comes into its own when its self-expression expresses itself through a concealment of that which it can never fully

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<sup>27</sup> This phrase is derived from Hegel, for whom a subject thinking things “sets their content into itself.”

disclose. Fetishism is the result of this. When the entire *socius* is speaking of and for capital, then there is no sense in which a real separation between production and circulation can be upheld. What we have instead is a unified system of self-expression that pathologically promises some form of reckoning, but that induces only further motion through fidelity to a Subject that is ultimately substanceless, whose essence is analogous to the “empty Cartesian subject” (Zizek 2017: 166).

Presskorn-Thygesen and Bjerg (2014) elaborate on this empty Subject of capital by bringing circulation and production together in an analysis of sign value. Following Baudrillard and Zizek, they claim that, “Not only is the exchange-value of the commodity a product of symbolic processes working internally in the capitalist system, but even the use-value of the commodity and the subjective needs to which it refers are socially generated.” Why this matters is that every need, every desire, is appropriated and structured by being *coded* for capital (Presskorn-Thygesen and Bjerg 2014: 201).

This is not merely a shaping of desire (as in Postone), but of the “shaping of the shaping.” This is the pre-coding of which Baudrillard (1975) speaks, and which Presskorn-Thygesen and Bjerg (2014: 202) get from Lacan: “In this regard, capitalism is not primarily a particular way of *satisfying* the subject’s desire, but rather a particular way of *structuring* this desire in the first place.” Here again we see how subjects are converted into objects. Or, better, we see a process of coding whereby putative human subjects are structured, in the first instance, by the very fetish logic of real subsumption. Such fetishized (in)humans become more and more coded by the fetish tendency, which converts more aspects of thought, feeling, and action into expressions of capital’s self-expansion.

However, in Lacanian fashion, the Real is never fully foreclosed, as it resists codification, leaving only little reals or traces within the symbolic order. As Zizek (2019) states, “[The] Real is the rock upon which every attempt at symbolization stumbles, the hard core which remains the same in all possible worlds (symbolic universes).” But because the symbolic order is built on a paradoxical relationship with the Real (which both is and never is included), this means that every attempt at closure fails, whether that be in the simple value form or the higher forms of capitalist rationalization. Another way of saying this is that there is never real value, or true price, or the right contract. There is only

ever the ideological desire for a settling.<sup>28</sup> Baudrillard refers to this as the ‘naturalist guarantee’, and Presskorn-Thygesen and Bjerg (2014: 206) relate this to the function of fantasy in capitalism: “Capitalist ideology functions by masking its own role in establishing the subjective desire for a particular object.” (In)human subjects must operate under the illusion that they have found an object of closure; however, the Subject is what conditions the very means for this discovery in the first place, by orienting the desire relation.

Yet, because desire is never satisfied, the system is characterized by *jouissance*, or the tragic failure of enjoyment. As Lacan claims, “*jouissance* is suffering.” Under capital, *jouissance* is best seen in that commodity consumption only satisfies for a moment. However, where Presskorn-Thygesen and Bjerg speak of *jouissance* in relation to consumption, we need to remember their own prompting to think of sign value as beyond the twofold of the commodity. What this means is that capital as Subject thinks itself through its objects being for itself. (In)human subjects, therefore, construct the very desires that thwart their own satisfaction. This is a pathological process, where, to varying degrees of self-expression (in production and circulation), capital as Subject constitutes the very moments in which commodity consumption happens. This occurs through the temporal dynamic of extensional quantification. And through the accelerative and integrative logic, as fetishization intensifies, this produces further compulsive tendencies, which therefore intensifies capital’s self-expansion. Again, we see the superego injunction: the more innocent you are, the guiltier you are. However, capital as Subject is subsumed under this logic itself, with all of its fetish forms serving as deputies disseminating the limits and demands that condition social life, such that all possible objects are converted into inputs for its self-expansion.

It is in this way that we need to conceive of finance as real subsumption. Robert Meister (2020: 114) tells of his account of seeking to expand beyond Postone’s (and Marx’s) conception of real subsumption merely under the commodity form by thinking “the real subsumption of everyday life under the asset form.” Why this correction is needed is precisely because Postone’s critique of real subsumption is still trapped within a Kantian framework. As Meister (2020: 117) notes:

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<sup>28</sup> Mirowski makes a similar point in his elaborations towards a social theory of value: “because the arbitrage-free state is never attained, so everyone is calculating with faulty prices.” However, Mirowski does believe that developing a social theory of value would be primarily concerned with closing the arbitrage gap, under the conviction that “prices can be brought closer to their underlying determinants or coherency conditions” despite those underlying conditions being “intrinsically stochastic.”

Just as Kant's "critique" of human understanding consists of making visible the epistemic role of abstract homogeneous space and time in Newtonian physics, for Moishe, Marx's critique of the value form consists of making visible the epistemic role of abstract homogeneous labor time in political economy as the a priori precondition of the social world it purports merely to describe.

The political implications for this are crucial. According to Meister, this is ultimately an epistemological critique, not a moral (or ontological) one. Meister is therefore confused if Postone is critiquing "concealment-by-abstractation, or whether it is more fundamentally a critique of what is concealed." By contrast, the real subsumption of everyday life is an immanent proposal. However, for Meister (following Randy Martin), this proposal opens up an investigation into 'derivative sociality', whereby the derivative functions as a mediating signifier,

not primarily as the creation of an abstract common denominator that commensurates existing products (the price system already does that) but, rather, as the creation of new, specifically financial product—essentially a written contract—that mediates between potentially heterogeneous measures and scales by coreferencing rather than commensurating them (2020: 123).

For Meister, the financial derivative does not reduce variance to a common denominator, but establishes a relation wherein variance can be conceptualized by the derivative signifier which interprets various social and material relations. We will say more about derivatives later. For now, what matters is that we think of finance as the real subsumption of everyday life. And further, that this 'everyday life' be understood in the syllogistic unity that we have elaborated as the accelerative, integrative temporal dynamic of capital-as-Subject.

What is more, this Subject needs to be understood in terms of "a desperate need to postpone settlement indefinitely" (Karatani 1995: 179). This is what leads Karatani (1995: 177) to identify finance as a perverse compulsion as the root in fully formed capitalist social formation. For Karatani, it is credit that undergirds the capitalist system. What he means is that capitalism is driven by a social, compulsory power; what he calls a "mana-like" power. This drives capital forward through the compulsion towards settlement. However, the temporality of capitalism is not towards an open future, but "an incessant deferment of the settlement to the indefinite future." Like Presskorn-Thygesen

and Bjerg, there is no object of desire at which it aims, but merely a compulsory drive – a *death drive*.

Karatani (2016) further develops the concept of fetish that is useful for us. If it hasn't been understood already, the fetish must not be understood in metaphorical terms. Nor is it merely a by-product of exchange. To make this claim is to presume that fetish emerges out of the act of commensuration. Rather, as Karatani shows, fetishism is first. That is, fetishism is the “spiritual power attached to the things exchanged,” which guarantees the conditions for the exchange relation in the first place. This is how Marx transforms Hegel's *Geist* into capital as self-expanding Subject: capital-as-Subject becomes fetish writ large. Therefore, it is the ‘spirit’ of capital-as-Subject that is inflected through the ‘spirit’ attached to the fetish forms, with finance as the fullest organization of fetishism. (Karatani 2016).

Thus, with real subsumption, we have a theory of value that proposes immanence. Morgan Adamson (2009: 274) tells us that it is “the productive capacity of the human conceived as capital itself.” The converting effect of the unique ontology of capital turns resources into images of itself. Baudrillard critiques Marx for failing to put this activity of inscription and conversion front and center. H-N, by contrast, focus on this in elaborating an immanent theory of Empire that refuses the logic of extensional quantification that the majority of readings of Marx perpetuate. It is the conversion of life into capital *per se* that characterizes real subsumption (Adamson 2009). And financialization is best conceived as the most efficient operation of real subsumption, in Marxian terms. However, no discussion of real subsumption would be complete without discussing technology and general intellect.

#### *2.4.4 Finance as Technology: Machines and General Intellect*

Karatani makes a provocative claim, which opens up our final thoughts in this chapter. As we have already discussed, for Marx, real subsumption relates to the production of relative surplus value. And relative surplus value is derived from increasing productivity, primarily through technological innovation. However, Karatani notes that the incessant drive of capitalist accumulation cannot continue forever, because it “cannot accumulate itself without constant technological progress and the advent of new laborers-consumers.” Therefore, the “secret of the capitalist economy ought to be seen in the process of exchange instead of production” (Karatani 2016). Of course, this is not revealed until Volume Three of *Capital*.

In Volume One, as we learned from Lange, it was necessary to begin somewhere, and to presume the whole at the outset, while also leaving room for development in the analysis as the simple become more complex. Therefore, Karatani reads Volume Three back through to the beginnings of Volume One, which he notes actually reveal germinations of what is fully developed with the joint-stock company as the “centralization of the means of production and socialization of labor” (Marx n.d.). Similar to Meister’s prompting above, this culmination is best seen as a sort of mediating signifier that is transversal of production and circulation.<sup>29</sup> That is, the culmination of the project in *Capital*, for Karatani, is when capital itself becomes commodified. This is the culmination of the ‘simple spirits’ of commodities from Volume One in their most complex form as ‘share capital’ in Volume Three that is the ‘absolute spirit’. (Karatani 2016).

That said, for Karatani, finance operates through *parallax*. This is because there is a parallax characteristic of the value form itself. He does not deny that value is created in production, but this value is only realized in circulation. There is a temporal gap projected into a future fulfillment. What guides the process from production through circulation and therefore to realization is the fetish power – credit. This serves as a third term between production and circulation/exchange, guiding the process. Thus, advocating a sort of ‘consumptionism’, Karatani (2005: 289) suggests that it is only in exchange when surplus value is putatively realized “by workers in totality buying back back what they produced.” This creates an oscillating picture of the worker-producer, one that cannot be reduced to either mere producer or mere consumer. This is the parallax view of capital.

Why this matters is that this leads Karatani to a fundamental rejection of any divide between financial speculation and a supposed real economy. As he states, “The majority of economists warn today that the speculation of global financial capital is detached from the ‘substantial’ economy. What they overlook, however, is that the substantial economy as such is also driven by illusion, and that such is the nature of the capitalist economy” (Karatani 2005: 241). Or, said otherwise, credit and speculation are built into the very structure of capitalist social formation, from the simple (commodity) to the complex (finance). And far from there being any possible horizon of settlement, capitalism operates as a bad infinity postponing resolution forever. The fetish operates as a way of negotiating this impossible resolution by mediating all possible relations and offering the means of negotiation. Adorno recognizes this financial logic in Hegel when he speaks of living off of a credit that is never resolved. Likewise, Karatani (1995) views communication

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<sup>29</sup> It is worth nothing that Karatani’s first formal foray into Marx was in the development of what he called a ‘transcritical’ approach.



and language in similar terms, which has greatly informed his reading of Marx. Therefore, what matters, in the case of finance specifically (and capital generally), is the *construction of the means for deferment*.

We have already spoken about capital-as-Subject constructing the fetish forms as means. With finance, once we understand its fetish character, we see how it operates not simply instrumentally for the intensification of technological innovation. Finance must be conceived as a technological fetish itself that organizes total social capital through its mediating status. It is, as it were, a meta-technology of and within capital spirit itself. This is what is meant by finance being a higher rationalization of capitalist expansion. As Riccardo Bellofiore (2011: 206) demonstrates, “[We] have to consider that the real subsumption of labour under ‘industrial capital’ considered by Marx has evolved into a real subsumption of labour under ‘finance capital’ not only indirectly, via the financing of capitalist production, but also directly in the form of consumer debt and the subordinate inclusion into the stock exchange and the housing market.” While we might quibble with Bellofiore on the epochal nature of this claim, what is crucial to highlight is how real subsumption is not indirect but direct. This is the real subsumption of every day life.<sup>30</sup>

Thus, finance directly operates as a technology that increases productivity through debt mechanisms that force consumers to “work more and with higher intensity” (Bellofiore: 206). This jointly creates both absolute and relative surplus value. And tying this in with Karatani, debt mechanisms also create more intensely fetishized means of consumption.

This is contrasted with most Marxian theories on financialization, for whom finance is not a technology itself but a fictitious enabler of technological innovation. Ivan Ascher (2016) speaks directly to this claim when he investigates ‘the capitalist mode of *prediction*’ as an integral technological motor within capital itself. Because of humanity’s fears concerning the future (i.e. its inability to achieve closure), “man tends to imagine or predict possible futures and to protect himself accordingly” (Ascher 2016: 24). With the rise of the ‘portfolio society’, people are not merely exploited for their labor power, but are “constructed as individuals and populations... whose credibility or probability can similarly be measured, abstracted or exchanged” (Ascher 2016: 89). This transforms the human from the liberal subject of standard Marxian theories, into *Homo probabilis*. Such subjectivity expresses the financial logic of probability inherent in the credit logic of capital itself. They take on the complex structure of finance that subsumes them in their

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<sup>30</sup> Srnicek (2013: 73) views finance as “the purest attempt at the quantification of all available material.”

total selves, which then in turn affects the very expenditure of their life-time. Financialized capital as Subject for-itself, thus takes on the very technological logic of temporality that undergirds the simple commodity in its mana-like credit character, orienting capital's expansion as death drive. This permeates through simple fetishes, and capital as absolute fetish.

Ascher speaks of the credit card as a direct financial consumer technology. But where things get more interesting is in the world of structured finance, where securitization serves as a direct financial technology "for commoditizing, dividing, de-differentiating, re-differentiating, and therefore standardizing as securities any financial asset" (Lozano 2015: 19). These operate at the meta-technological level mediating the parallax between production and circulation. What needs to be kept in mind is that finance cannot be conceived in indirect terms, but must be seen, even within a Marxian frame, as technology directly contributing to capitalist expansion.

Ascher discusses the enclosure of the entire market by finance in a similar vein to this, one that subsumes production and circulation into the financial logic of mathematical prediction. This took place through the enclosure of a type of commons, for Ascher: the welfare state. The end of Keynesianism brought new risks and uncertain futures. When Bretton Woods collapsed, the financial market was primed to manage these emergent risks with offers of its own: protection by insurance companies, pension funds, and credit card providers (Ascher 2016: 96). The result was the construction of the neoliberal order, complete with all its tools and technologies for probabilizing life.

But what about Marx? What does he say about technology that we can loop into finance-as-technology that will justify its function in this accelerative and integrative temporal dynamic? Marx's investigation into machinery in *Capital* only take us so far. Primarily investigating what we might call machinism and chemism, machines in *Capital* do not take on a logic of teleology. That is, they are not purposeful. Their purely instrumental quality culminates in machine-based production. However, he does admit that at its highest stage of development, machines produce other machines, which creates a technical basis that maps onto the ruling principle of capital's dynamic logic. Yet, in the end, what most interests Marx, in *Capital*, is the way that capitalist production's incessant drive demands innovation, which then displaces labor and exhausts the land (Marx n.d.).

It is the famous "Fragment on Machines" that provides us the speculative material to ground a Marxian theory of finance as technology. The first point, for us, is that Marx (1973: 626) speaks of machinery as "organs of the human will over nature, or of human

participation in nature.” Whether we accept the instrumental or participatory phrasing is secondary for the moment. What matters is that machinery is essentially viewed as the material transformation of inert material to objectified knowledge. Sartre speaks of there being a ‘transubstantiation’ in this relation (Smidt 2019). For him, all matter takes on the form of the *practico-inert*. Matter, as worked, is, therefore, both alive and inert. And what is infused into the object is nothing more than the very life-time of the worker (‘praxis’ in Sartre’s terms). Therefore, inherent in the machine, as a practico-inert object, are the exigencies (i.e. limits and demands) objectified through the extension of the human brain and human hand. Solidified, these exigencies, in turn, exert themselves in mediatory conditions by declaring the limits and demands for its use. But these exigencies are nothing other than the return of stolen praxis (Turner 2014). Therefore, what confronts the human in the machine is the practico-inert logic of the return of stolen praxis. It is, therefore, human confronting human, but in practico-inert form.

The practico-inert field, composed of all manner of objects (including the threefold parts of machinery from *Capital*: motor mechanism, transmitting mechanism, and working machine), is infused with more and more human vitality through the very temporal dynamic that drives capital-as-Subject forward (namely, death drive). The more knowledge that is objectified, the more subsequent fidelity must be paid to the ever-expanding demands of the practico-inert field. This means that contained within the practico-inert field is a vast reservoir of human knowledge. This social intellect is the precondition by which subsequent material transformations of inert matter can be appropriated for production, in the first instance. However, this social intellect is not regressive, but itself grows in all manner of directions, exponentially. It is this intellect that has captured the attention of many, most notably the autonomist movement.

In the “Fragment,” Marx argues that the tendency of technological expansion produces more machines and knowledge. Knowledge comes to predominate, as machines produce more relative surplus value. Humans are liberated, to increasing degrees, from the expenditure of their life-time. This leads to the proportional increase of free time. Knowledge continues to expand, and this ‘general intellect’ is freed from its investment into machinery, thereby breaking the circularity of the practico-inert logic noted above, as the mediatory relations shift from human-matter by way of the practico-inert object (what Sartre calls ‘negative reciprocity’), to human-human by way of general intellect (‘mediated reciprocity’). We have come back around to Negri and H-N, for whom this argument has great appeal in elaborating the qualitative break from the temporal logic of the capitalist dynamic. We do not need to repeat their arguments here. For us, what

this shows is precisely how we can conceive of finance as a technology. For, finance is not merely an inert instrument. Rather, finance is at once cognitive, affective, and cooperative. But *how*? Nick Srnicek gives us a clue into precisely how finance is a *technological material that is cognitive, affective, and cooperative*, and that will bring this investigation into a Marxian conception of finance to a close, before proceeding to further stages of this project.

#### 2.4.5 Quantifying the Future: Making a World in Capital's Image

Srnicek tracks the historical and conceptual development of financial logic, from medieval through to postmodern times. Central to his argument is that the logic of finance is characterized by the development of “three separate areas: measurement, the application of numbers, and calculation” (Srnicek 2013: 73). What results is the erection of a *mathesis universalis*. More than the historical development, it is the conceptual elaboration that matters here. The reason is that in the conversion of the quantification of reality, we need to be able to account for the active agent of construction. In the context of this chapter, therefore, we need to think of the ways in which quantification functions as a subjective logic, finding its full expression, in Marxian terms, with capital-as-Subject.

The problem comes when we seek to give material structure to the endless logic of deferment. In other words, how does one rationally conceive the future? Joel Kaye (2004: 120) puts it this way: “Since [the lender’s] profit is in the future he has no way of making a rational decision as to whether or how much he will benefit from the [lending], and both equality and rationality are essential to proper, non-usurious economic transactions.” The issue comes down to the need for a way to rationally conceptualize something that is immaterial. In other words, there need to be a way to quantify the future.<sup>31</sup> One of the most inventive technologies that created the conditions for this to emerge was double-entry bookkeeping. What was so inventive with this form of organization was that a merchant’s capital stock could always be tracked in relation to their debits, creating algebraic calculations for anticipating future rounds of profit-seeking. For us, it is the *mathematical logic* that is most inventive. Once this was established as not only possible, but also desirable (even necessary), the ground was set for the introduction of calculation techniques that would turn that speculative project to seek profits into a technological science.

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<sup>31</sup> Srnicek (2013) claims that this was not present in commercial activity, but we might refer to Karatani (2016) here, for whom the credit logic is primary, which means that there is always a possible need to quantify the future within the economic relations; the issue is that in former modes of exchange, such a need to quantify the future remained virtual.

What Srnicek provides that is most valuable on this front is insight into the metaphysical logic that creates the rationalization in its pursuit. Karatani (1995) calls this logic the ‘will to architecture’. This ‘will’ is a striving to *make* out of that which is *becoming*. Srnicek (2013) refers to this as the *quantification of quality*. Either way, the point is that there is a striving desire to transform something into an objectified human idea or concept. In a return to Laruelle and our Introduction, Karatani (1995) similarly speaks of philosophy as being such a striving. It is *architectonic*. And without too much forcing, we can map this tendency onto Marx’s elaborations about the logic of machinery being objectified human knowledge. Machinery, or allow us now to speak more broadly of *techné*, is therefore architectonic. With the introduction of number, then, what we have is a formal means of rationalizing this will to architecture.

Justin Joque (2019) has gone a long way in investigating how forms of mathematical logic function precisely in this way. In his article on the Bayesian revolution, he insightfully argues that,

We may look back at this revolution in statistical methodology as being equally important as the Taylorist and Fordist revolutions in production at the turn of the 20th century. While those earlier revolutions created the conditions for the ‘automatic’ production of material goods, the Bayesian revolution is cementing the conditions for the automatic production of knowledge.

This ‘automatic production of knowledge’ is precisely the extension of the logic of *techné* that we can ascribe to the logic of finance. This shift in thinking carries with it a shift in objectified human knowledge, which is imbued into financial technologies that then condition further expressions of this rationality, threatening not merely how we see the world, but also how the world (i.e. capital-as-Subject) sees us. This leads to the very enclosure of general intellect itself (Joque 2022). The meta-technological logic of finance has to be understood not only in terms of the actual models (ex. BSM or CAPM) but as expressions of absolute spirit. They are fetish objects that exponentially bespeak of further fetish tendencies, all of which derive from capital-as-Subject.

The striving towards an architectonic world, therefore, can be seen as the desire of capital-as-Subject to construct the world as quantifiable according to its fetish logic. Finance is merely the most explicit desire towards this aim. As purposeful, capital converts all possible resources into fetish objects that all function in their particular ways to endlessly defer settlement, while simultaneously inducing fidelity to its unceasing drive.

And because finance is a product of social intellect, it is imbued with cognitive, affective, and cooperative meanings. Thus, as *techné*, finance makes a World (and worlds within worlds) in its own image.

### **Conclusion: Financialization as Social Topology.**

What we have investigated in this chapter is a broad field of ideas surrounding a central set of concerns: namely, that *there is a temporal dynamic characteristic of capital, and that finance is not separate from this dynamic in qualitative terms, but is rather a higher rationalization of a tendency inherent in capital from its most simple forms*. This logic of capital gives us insight into finance from a Marxian perspective, but more importantly signals to broader concerns for how to understand what we are calling the techno-temporal logic of finance.

At this stage, we can sketch our first moment in elaborating this techno-temporal logic. That is, finance has certain tendencies in constructing a world according to an image. This is because finance is a *techné* of objectified praxis. In this endeavor, finance converts resources by promising settlement, but only ever offering deferment. The world it constructs, therefore, is fraught with insecurity. As it carves out pathways, means of life take on the social forms provided by its conditioning, which then proliferate its fetishizing compulsion through the construction of path-dependencies.

By converting quality to quantity, through the will to architecture, determinate realities congeal. More than the annihilation of space, the accelerative and integrative logic of finance (as capital-as-Subject) creatively differentiates. This is a constructive activity, making worlds within worlds that are coded by the logic of extensional quantification.

What Marx, therefore, provides is an angle on capital that is both conservative and also transgressive. In its conservative moments, Marx's *Capital* thinks of a world that is, and that ought to be, conceived in extensional terms. However, in its transgressive virtualities, *Capital* creates space to think of the process of world construction beyond representation. Moving forward, we will take both the conservative and transgressive aspects of our Marxian approach to finance (and capital-as-Subject) into dialogue with Keynesian/post-Keynesian and Critical Finance approaches; not to have them battle it out in pursuit of the theory that is most accurate to thinking finance, but so we might come to see through the bricolage *how and in what ways* thought forecloses finance, and how

these ubiquitous approaches attest to an orientation that is finally and fully non-representational, where finance can think according to the Real.

Chapter 3  
A Keynesian Logic:  
From Ethics to Macroeconomic Rationality

### 3.0 Introduction

For Keynes, time is of central importance. In fact, it is not an overstatement to posit that time is what gives Keynes' economic theory its unique qualities. That said, in order to substantiate this, we must investigate not only how he views time in terms of macro-economic management, but we must also unveil the underlying conception of time that conditions his economic theory. Thus, it is his *philosophy of time* that becomes our Rosetta Stone.

As his biographer Robert Skidelsky (1994) notes, philosophy came first, for Keynes. It was the foundation upon which his economic theory was built.<sup>32</sup> Therefore, in the language of this project, Keynes ought to be seen as a profoundly foundationalist thinker. This is because *his economic theory is built upon his philosophy*; all of which is constructed as an *arborescent model*. Skidelsky (1994) further remarks that Keynes' philosophy was a *philosophy of ends*. What this means, in the context of our investigation, is that *Keynes was a thinker of representation*. How this shapes his economic theory will be revealed in the following pages. Therefore, to understand Keynes is to understand the architectonics of his philosophy of time.

For Keynes (2015: 571-572), economics is a "science of thinking in terms of models joined to the Art of choosing models which are relevant to the contemporary world." It must be this, for Keynes, because economic material is not static and unchanging. The model, therefore, serves as a way to manage the transitory nature of the object under investigation, so that sequential, logical ways of thinking about the object of concern may develop. Immediately, we are struck with a number of things.

*First*, Keynes views objects of economic analysis in qualitatively different terms than that of the natural sciences. The latter investigates material that are "homogenous through time." In other words, Keynes accepts as a first principle that there is an objective world with some sense of constancy. We can think of this as *Keynes' metaphysical spacetime*

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<sup>32</sup> Much work has been produced on Keynes' philosophy. See Gillies and Ietto-Gillies (1991), Davis (1994b), O'Donnell (1989), Carabelli (1988), Bateman (1988), Runde and Mizuhara (2003), Bateman (1996), Bateman and Davis (1991), Coates (1996) *et al.*



*presupposition*. And he also thinks of the objects of economic science as being transitory. We can think of this as *Keynes' metaphysical sociological presupposition*.

*Second*, economic science is unique from natural science in that its material is fluid, which therefore prevents modeling from taking the shape of laws. *Models are heuristics* that are suitable in context in relation to the material under examination, and as we will see, which correspond to a desired solution.<sup>33</sup>

Which leads to the *third* immediate observation: economic models are problem solving. Natural scientific models map or chart, whereas economic models manage. They are, in a sense, active. We might be tempted to think of natural science as representational of the real, whereas economic science is performative. But this is not the case, for Keynes. Economic models are no less representational in their formalism. This claim will be elaborated below.

And *finally*, economic models allow for thought to extract from the model logical ways of thinking about the objects of economic science in relation to “time sequences” (Keynes 2015: 572).

This chapter will be framed around these immediate observations.

In **Section 3.1**, we investigate Keynes' *philosophy of time*. However, this philosophy is not separate from his ethical philosophy. Ever concerned with the future well-being of the nation, it is Keynes' philosophical concerns for *the good* that guide his later economic theory. We begin by centering this chapter thusly. Then in **Section 3.2** we look to how Keynes proposes to construct a future good society in economic terms by *managing the future itself*. We close in **Section 3.3** by offering a *speculative Keynesian proposal of modality* that equips us with a semantic framework for understanding the mechanisms of financial operations. This will prove useful in that it enables us to connect Keynes' philosophy of time, with his ethics, through a form of economic management as an ongoing communicative activity through institutions and subjects.

In the end, we offer a picture of Keynesian theory defined as an *ethics of macroeconomic rationality*. This is because Keynes is a moral thinker, centrally concerned with the philosophical pursuit of *the good*, in the form of *national well-being*, through the *management of an uncertain future*. Thus, finance, for Keynes, must be understood within this broader set of concerns. For, finance is both *ethical and political economic*. That is, finance is *techné* that straddles subjects and institutions between an uncertain future and a present that is charged with mitigating the consequences that such uncertainty presents.

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<sup>33</sup> Geoff Mann (2017) notes that the reason Keynes' ideas took off was precisely due to their ability to solve prescient problems.

If the Marxian schema is primarily concerned with the present and how both past and future are related to it in extensional terms, the Keynesian schema centers the future as uncertain from the vantage of the present. Keynes' future is a future *for probability, for rational degrees of belief* that will impact present decisions, which takes place through an ongoing communicative activity of present expectations in relation to how the uncertain as such can be conceived. Thus, this chapter will show that Keynes open an aperture onto finance that is thoroughly ethical and political economic in that it centers 1) the uncertainty of the future, 2) the certainty that challenges will befall us, alongside 3) the social mandate to develop economic models that are supposed to mitigate the negative consequences stemming from the transitory nature of reality.

### **3.1 Ethics, Temporality, and Formalism: Keynes' Philosophy of Time**

#### *3.1.1 The Philosophical Foundation of Keynesian Political Economy*

So much of what frames how Keynes understands economic science derives from his years at Cambridge under the tutelage of G. E. Moore (Skidelsky 2015). In his most celebrated work, *Principia Ethica*, Moore (1922: 133) provides insight into his meta-philosophical project by excoriating idealism in the following way:

That 'to be true' *means* to be thought in a certain way is, therefore, certainly false. Yet this assertion plays the most central part in Kant's 'Copernical Revolution' of philosophy, and renders worthless the whole mass of modern literature, to which that revolution has given rise, and which is called Epistemology.

For Moore, true propositions are not representations of real states of affairs 'out there'. They are simply facts. Truth "differs in no respect from the reality to which it was supposed merely to correspond" (Moore 1993: 21). Wilfrid Sellars (1968: 99) explains that when Moore speaks of 'truth', this also carries the sense of 'obtains' or 'is the case' in the absolute sense (of Carnap), where truth is an attribute of non-linguistic entities. This means that propositions are true whether anyone thinks them or not (Moore 1993: 4). How this translates into his ethical thought is a matter of most significance for Keynes.

Rather than building a system of ethics (as in, say, Kant), Moore (1922: x) begins by contesting philosophical investigation, through the elaboration of a meta-ethical theory concerned with establishing the "fundamental principles of ethical reasoning." By providing

this heuristic, Moore believes he can ground any future ethical practice. He does this by defending his *intuitionist non-naturalism* against the *cognitive naturalist* claim that moral terms can be defined with natural terms. We see this latter approach in the utilitarianism of Mill, for whom ‘good’ and ‘pleasure’ are synonymous. This psychological and egoistic hedonism rests on what Moore (1922) identifies as the *naturalistic fallacy*. This is because when Mill writes, “To think of an object as desirable... and to think of it as pleasant are one and the same thing,” he conflates that for something to be ‘good’ it also means that it is ‘desirable’, and therefore, all that is desired is therefore good, insofar as that which is desirable produces pleasure (or at least reduces pain).

What this means is that desire, for Mill, is *ipso facto* good; and likewise that the good is *ipso facto* what motivates us. The reason this commits the naturalistic fallacy is that ‘pleasure’ is a natural term, whereas ‘good’ is an ethical one. By conflating them, Mill makes a fallacious move, with the naturalist term taking priority over the ethical but retaining the veneer of an ethical proposition.

For Moore, cognitive naturalism is obviously false; for, there is no way to resolve ultimately whether something is good because it is desirable. Further, not all that is good is normal, and it is not clear that all that is normal is good. Thus, it leaves us with an ‘open question’ (Moore 1922: 43-44). By virtue of the fact that we can ask if things are good or not, we open ourselves to the possibility that what we desire is not, in fact, good. Thus, for Moore, it is only through *intuition* that we can ever truly ascertain what is ethical.

This is where Moore’s common sense philosophy enters; for, identifying good from bad is a simple procedure. As he states, “when I call such propositions ‘Intuitions,’ I mean *merely* to assert that they are incapable of proof; I imply nothing whatever as to the manner or origin of our cognition of them [emphasis in original]” (Moore 1922: xi). This is because if we suppose that something is good *because* of the manner in which we conceive them, we fall into idealism. Like his view on propositions more broadly, ethical propositions are true because they are true, and not because our thoughts correspond to some domain of reality that is represented, or because our ideas about the true make it so. Therefore, ethics must avoid the pitfalls of both the naturalistic fallacy and also of metaphysical speculation.

Our concern here is not to engage critically with Moore. Rather, what matters is how these ideas form the crucial philosophical foundation for understanding Keynes’ own philosophico-economic approach.

### 3.1.2 The Ethical Foundation of Keynesian Political Economy

In 1904, Keynes wrote the essay “Ethics in Relation to Conduct.” In this essay, he lays out his ethical philosophy by extending Moore’s cognitive non-naturalism, while also departing from his mentor on one crucial point that has great import regarding his economic theory. Where he agrees with Moore is on intuitionism, the primacy of ethical reasoning, and the doctrine of organic unity.<sup>34</sup> However, where he parts from Moore is the nature of probability. This is because, whereas Moore asserts that due to a lack of frequencies pertaining to knowledge of outcomes we must therefore simply side with the well established rules, Keynes (2015: 66) avers that we should “act to produce the greatest good in the circumstances of the case.”

While both approaches are predicated on a probabilistic argument in relation to *expected good*,<sup>35</sup> they differ drastically: Moore’s rule-based utilitarianism functions by asserting that certain rules ought to be followed because they will yield the most frequent good outcomes; and Keynes’ act-utilitarianism asserts that probability cannot be reduced to the relation between an assertion in the present to its either proof or disproof in the future. This would be to make probabilistic statements “a prophecy of certain truths concerning events” (Bateman 1996: 44).

For Keynes, it is *belief about future expectations* that constitutes probability. Keynes notes that Moore’s idea (that by short-term probabilistic calculations one could ascertain the right course of action) is based on a conception of past composite experiences (Davis 1991). However, Keynes claims that past experience does very little in explaining exceptions to rules. When such events arise that cannot be typically accounted for, we must avail common sense rule-bound rationality.

Where Moore’s theory of probability only thinks of expected good in relation to past knowledge, Keynes’ conception allows for rational decision-making to have direct involvement in addressing the transitory nature of the occurrences under observation. There is a sense in which, for Keynes (2015: 3-4), a rational claim can be made that is grounded, not on past occurrences, but rather on an agent properly equipped to make a logical assessment when all the evidence is presented; or, as he would later formulate: probabilities are “degrees of rational belief.”

In *A Treatise on Probability*, he fleshes out these germinal thoughts that add further clarifications, inching him towards his general economic theory. Contrasted with Moore’s

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<sup>34</sup> “This is the view that a whole consists of interdependent parts, so that its value – as in a work of art – can be greater or smaller than the sum of those parts” (Keynes 2015).

<sup>35</sup> This is typically formulated as ‘expected utility’, however, we follow Bateman’s lead here in recognizing that it is more apt to speak of *good* than *utility* with reference to Moore and Keynes.

frequentism, Keynes' Bayesian approach begins with probability as a subjective method of belief (Joque 2022). Neoclassical economics typically assumes that rational agents that face uncertainty follow Bayesian rules (Ramsey 1931; de Finetti 1937; Savage 1954). They do so by maximizing expected utility through Bayesian formulations, which they are constantly updating. However, for Keynes, uncertainty is rampant. Therefore, we have to make decisions based on the best available evidence at hand, but that is largely informed by non-rational expectations.

Moore's doctrine of 'organic unities' informs Keynes on this point. Because decisions are made in a large system of interrelated parts, there is no way to add together component parts to reach a sum total of individual choices that might yield a composite conception of expected goodness. This 'fallacy of composition' misses that decisions within an organic unity have intense multiplier effects, insofar as they create vast fields of uncertainty that are necessarily non-quantifiable. This leads to more than an epistemological point, for Keynes. It is ontological.

Some commentators have supposed that Keynes' early theory of probability was purely subjective (Boland 1982). However, these views miss that what Keynes considered was not an epistemological issue but ontological, and therefore objective (Bateman 1988; Davis 1991). This is due to his concern for the good, not utility, and why he never advocated for pareto-optimum policy results or those that would maximize aggregate utility. Further, his approach to modeling was never concerned with seeking to rationalize putative utility-maximizing behavior; hence why it never serves as the basis for his economic science. We can understand this as the explicit long-term influence of Moore on Keynes' thought. Since searching for the good is not reducible to cognitive naturalism, neither are questions of utility sufficient for an economic science. This forms the philosophical bedrock upon which rests Keynes' rejection of Walrasian equilibrium theory.

From Jevons to Walras, the naturalistic fallacy that Moore's *Principia* so forcefully contests, is held up with bold reverence. After discovering Louis Poincaré's *Elements de Statique*, Walrus constructed a mechanical theory of economics, an "economics of pure political economy" based on Newtonian mechanism. This led him to construct what he saw as a new science, one analogous to astronomy:

I cite astronomy because it is in fact the type of science... the theory of social wealth ought to become. In both there are natural facts, in the sense that they remain superior to social conventions and that they impose themselves on the human will... facts and laws suitable for an extensive and fruitful application of

calculus and mathematical formulas. The analogy is complete and striking (Letter of 1862, Translated by Walker 2006: 5-6).

This putative imposition on the human will, and the assumption of the quantifiable nature of social relationships would produce the formulation for utility maximization that characterizes Walrasian equilibrium theory. And this valorization and rationalization of utility is precisely where Keynes parts ways.<sup>36</sup> Therefore, to speak of Keynes' conception of probability as being useful for an active agent to manage states of affairs through rational decision-making is not to reduce his approach to either Walrasian utility maximization, nor to a theory of an aggregate of subjective aims at the good. Rather, it ultimately has to do with long-term outlook *that creates conditions* for deducing responses in the short term.

How he arrives at an alternative position to Walrus *et al.* is through a critique of Moore's meta-ethical theory on the grounds that the latter reduces individual good and general good. How Keynes' does this is by articulating a theory of ethical egoism that rejects utilitarian conceptions, but that also refuses to admit of Moore's common sense claims in *Principia*.<sup>37</sup>

Essentially, Keynes' argument is twofold: first, he claims there is a *petitio principii* in Moore's metaethics because the latter does not adequately prove the connection between universal good and ought but merely asserts that individual aims for the good are universally good; and second, Keynes faults Moore for using a fallacy of composition when he assumes that there is a rational basis for individual pursuits of good that is generalized in some form of aggregated universal aim for the good.

To the contrary, Keynes argues that there is no sense in which the general good can be supposed to have intuitive immediacy. Thus, there is a contradiction in Moore's thought that leads to the rational opposition between one's individual pursuits and the general, when, for instance, the general good might require the individual to make himself bad for the general good. Keynes claims that it makes no sense that one would rationally choose to make oneself worse off for the sake of the general, when the general has no intuitive rationality to justify its pursuits (Davis 1991: 69). Keynes sees in this the faulty probabilistic logic in Moore's ethics. There is no sense in which we can calculate the

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<sup>36</sup> See his essay "The End of Laissez-faire," for a full throated rejection of hedonistic individualism (Keynes 2015).

<sup>37</sup> See Davis (1991) where he discusses Keynes' unpublished essay "Egoism," wherein Keynes sides with Moore's teacher Henry Sigwick against Moore.

general good, because of the multiplier effect of non-numerical consequences spread throughout the organic unity.

Therefore, Keynes concludes is that there is a dual problem that requires further attention: that between the rational intuitive pursuit of good and the notion of general good as such. This dilemma is shown from the following quotes: “For my own goodness and the goodness of the Universe both seem to have a claim upon me and claims which I cannot easily reduce to common terms and weigh against one another upon a common balance.” And more provocatively: “I am a good friend of the Universe and I am willing to do my best for it: but am I willing to go to the devil for it?” (Keynes 1906). It is this dilemma that he would endeavor to resolve in *The General Theory* and his shift towards macro-economic philosophy.<sup>38</sup>

We view this dilemma in temporal terms as seeking to resolve the immediate with the futural, or between the rational and therefore understood and the unknown and therefore speculative. It is to this temporal concern that we now turn, as it is not an overstatement to claim that Keynes’ concern with time is *foundational*. Accordingly, Roger Backhouse (2006) writes,

In a series of books Shackle argued that the Keynesian revolution concerned time. The essence of time is that it is irreversible and that we can know nothing about the future ... The Keynesian revolution was about breaking with equilibrium, which can occur only in logical time, and creating a theory about how economics activity took place in historical time that was relevant to the real world.

In fact, Keynes himself notably defended critiques of *The General Theory* by focusing on temporal, rather than technical, grounds, essentially claiming that what ultimately matters is that we do not know the future (Backhouse and Bateman 2006).

Many others have centered their reading of Keynes relating to his conception of time (Davidson 1972; Robinson 1974; Chick 1983; King 2002). However, in order to plumb to the depths of these interpretations, we will focus on the *philosophy of time that he explicitly avows*, in order to then extend his ideas insofar as they contribute to his economic theory, which will then open up more direct questions about the techno-temporal logic of finance.

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<sup>38</sup> J. B. Davis (1991) suggests that Ramsey’s attack on Keynes’ objective conception of probability in the *Treatise* led Keynes to reinforce his position in *The General Theory* as ‘expectations of prospective yields’.

### 3.1.3 *The Temporal Foundation of Keynesian Political Economy*

Keynes' early formative conceptions of time were largely inspired by J.M. McTaggart (Madsen 2020). While we cannot be certain of the extent of McTaggart's effect on Keynes from biographical anecdotes, we do know that Keynes frequented McTaggart's lectures on metaphysics, and that the framing McTaggart establishes between the A- and B-series of time do appear in various ways throughout Keynes' writings.

In his most famous article "The Unreality of Time," McTaggart (1908: 458) argues that time is unreal, beginning with the following claim:

For the sake of brevity I shall speak of the series of positions running from the far past through the near past to the present, and then from the present to the near future and the far future, as the A series. The series of positions which runs from earlier to later I shall call the B series. The contents of a position in time are called events. The contents of a single position are admitted to be properly called a plurality of events. (I believe, however, that they can as truly, though not more truly, be called a single event. This view is not universally accepted, and it is not necessary for my argument.) A position in time is called a moment.

He then proceeds to claim that: 1) time is real only if change happens, 2) change happens only if the A-series exists, but 3) the A-series does not exist, so, time is unreal.

It is important to note that he is not claiming that people do not experience events. Rather, the claim rests on a metaphysical supposition about the inconsistency of time series, based on the notion that in order for the A-series to be real, it must be objective. Remember, he is concerned with the stakes of the reality of time, not the experience of passing moments. Therefore, he argues that the A-series does not exist, precisely because the ordering of time events is not an objective reality, but is only an arbitrary standpoint from which one begins to reason in relation to other standpoints. The fact that these standpoints change the order, or at least contest the priority of the sequence of events, proves that the A-series as such does not exist. Therefore, if the A-series does not exist, then neither does the B-series, because if the A-series cannot found the reality of a past, present, or future position in time, then the B-series itself is ungrounded.

Of note in this formulation is *the relationship between time, change, and existence*. Namely, it is the relationship that secures time to change, and the relative reality or



unreality of dimensions of time from within the time-change schema that bear upon Keynes' own understanding of time.

In his early essay on time, Keynes shows a fascination with the metaphysical debates of the day, as well as being thrillingly overwhelmed by being violently plunged “from ordinary life into metaphysics” (Keynes 1903, in Madsen 2020). In strictly Aristotelean terms, he defines time as nothing other than the measure of change. Further, he notes that if it is supposed that there is a timelessness that characterizes ultimate reality, then change is merely illusion. This includes a static conception of an eternal now, or some future absolute to be realized, which again bespeaks of a fallacy of composition (as the aggregation of everything) (Madsen 2020: 18).

His thoughts linger on what he sees as the most crucial consideration pertaining to time: “the most important question that I have omitted all together is that of past, present and future.” And in a gesture that is not dissimilar from his mentor's, he concludes, “Yet it is difficult to see in what sense if time exists, the past and future can exist” (Keynes 1903, in Madsen 2020). Taken together, what we can surmise from these early reflections is that *Keynes was interested in the dynamism of change, which constituted temporality in the metaphysical sense*. Thus, to accept a world of change, is to also *posit a world of uncertainty*. The future (and the past) were conceivably unreal, for Keynes. And it is this unreality of the future that translates in his economic writings into the problem of uncertainty. Not merely in epistemological terms, *uncertainty is part of the very fabric of objective spacetime reality*.

That said, Michael Emmet Brady (2019) contests the claim that Keynes ‘posits a world of uncertainty’ by arguing that Keynes does not, in fact, have a conception of ultimate uncertainty. He argues this based on a technical debate in the secondary literature pertaining to Keynes' philosophical commitments. In the end, he claims that Keynes has to be viewed as *both a Platonist and an Aristotelean*; not merely a Platonist as is suggested by many, and as the assertion of an objective reality of uncertainty appears to suppose. Aligning Keynes' conception of mathematics with Kurt Gödel's mathematical Platonism, Brady seeks to demonstrate that the majority of readers of Keynes' probability theory, and therefore conception of time, start from a faulty premise.<sup>39</sup>

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<sup>39</sup> Here's a concise statement on Gödel's mathematical Platonism: “The truth, I believe, is that these concepts form an objective reality of their own, which we cannot create or change, but only perceive and describe... Thereby I mean the view that mathematics describes a non-sensual reality, which exists independently both of the acts and the dispositions of the human mind and is only perceived, and probably perceived very incompletely, by the human mind.”

Why this matters, for us, is that the status of ‘uncertainty’ is the hinge upon which his conception of the future turns. If uncertainty is an absolute metaphysical principle, then Keynes’ approach posits the necessarily non-knowability of the future, which has implications for the rational beliefs in the present that are challenged by this irreducible uncertainty. If, however, the uncertain future is knowable, say, probabilistically, then the management of the future takes on a different status. Therefore, to understand the quality of the future in Keynes’ philosophy of time, we need to briefly examine the Platonist and, perhaps, Aristotelean influences over his way of thinking concerning uncertainty.

### 3.1.4 *Platonist or Aristotelean, or Both?*

Traditionally, Keynes has been viewed as a Platonist. As a sample, Brady addresses texts from Rod O’Donnell, Bradley Bateman, Roger Backhouse, and J.B. Davis. These authors, among others within the traditional Keynesian orbit (Shackle, Robinson, and Skidelsky *et al.*), have all supposed that Keynes was a Platonist. In so doing, they have erected a picture of Keynes as one who establishes a binary between historical time and logical time; between an atomistic versus an organic conception of the whole; between ergodicity and non-ergodicity; between certainty and uncertainty; and between empiricism and rationalism. The result is a limited understanding of Keynes’ handling of either side of these binaries by reducing Keynes’ approach to one of either simple virtue ethics or metaphysical idealism, dismissing the more complex possibility that Keynes’ position was both realist (i.e. empiricist) and rationalist (mathematical Platonist).

The claim that Keynes was a Platonist is largely due to the influence of Moore on his thought. Moore’s (1922) explicit claims regarding the intuitive commonsensical nature of the good attest to his Platonism. Thus, when Moore claims that the good is indefinable, this is indistinguishable from Plato’s claim that the Form of the Good is indefinable. This is because, for Moore, concepts are simply facts. Therefore, the form of the good is merely a concept of something that ineluctably *is*.

Rod O’Donnell (1990) remarks that it is not inconsequential that the book with the single most import for Keynes’ ethical development was Moore’s *Principia*. Ackerman takes this further to draw an opposition between empiricism and rationalism, claiming that, for rationalists, sense experience is insufficient for knowledge; only a type of rationalist intuition is able to accede to the true. Of course, this isn’t something easily performed, as Moore’s philosophy demonstrates. There are all sorts of pitfalls that thought falls into. However, the meta-philosophical approach is to train the mind to become more efficient in

its intuitive rigor. But this rigorous training is necessary, because empiricism *de jure* rules out the search for platonic essence.

It is precisely on this point that Brady interjects and draws the parallel between Keynes and Gödel. It is not that Keynes held the idea of an otherworldly transcendent form, as the Ackerman opposition between empiricism and rationalism supposes. Rather, insofar as Aristotle claimed he was a Platonist, so too are Gödel and Keynes, in that intuition of concepts is not an assent beyond the empirical, but is part of the very fabric of intuitive consciousness that thinks concepts as facts. These facts are objective, and not in the mind. But neither are they beyond reality in an immaterial realm, exerting their force over the unreality of fluctuating existence, which is thereby given derogatory status.

Where this matters most, in the context of this project, is with regard to the status of uncertainty. For Brady, Keynes' mathematical Platonism espouses that probability is a logical relation that is both intuitable and also oriented towards objective concepts. This is because, according to Brady, Keynes is both Aristotelean and Platonist.

When understood from this perspective, Keynes' elaborations on uncertainty take on new meaning. For the one-sided Platonist reading, Keynes' probabilistic claims must be read as purely epistemological, in that intuition is separate from the real. Therefore, the formulation of probabilities is an epistemological activity in relation to a putative outside. The goal is therefore to refine calculations so that they better map onto the real relations among the variables. The true probabilistic claim, on this reading, is the one that recognizes the "'truthiness' of 'the 'real' relationships among the variables'" (Emmett 2017: 72). Brady's synthetic view, by contrast, refuses the binary between intuition and real, by advocating for a mathematical Platonism, where *the relation between intuition and real is immediate*. The consequence is that probability models belong strictly to formal logic.

On this point, we look to Keynes' reply to a critique from Frank Ramsey and the distinction he draws between rational degrees of belief and belief in general; which, again, bring us back to the issue of scale, or aggregation. As with his critique of Moore, the difficulty arises when one seeks to address the whole. This is largely due to the fact that we have incomplete knowledge. As Keynes (2015: 76) states, "All propositions are true or false, but the knowledge we have of them depends on our circumstances." Therefore, propositions are not probable or certain; to speak of probable or certain is to be speak of the degree of rational belief that we have in relation to the proposition. When we have incomplete knowledge, therefore, it is the conditions of rationality that dictate how and to what extent this knowledge is incomplete.

Gallavotti (2009) claims that this incomplete knowledge is based, not on a prior ignorance, but grounded on prior knowledge that determines the choice-selections that include or exclude relevant or irrelevant pieces of evidence. The picture that is provided is one of interval valued probability, where non-additive and non-linear formulations refine their measures through approximation. Brady (2017b) agrees with Gallavotti and argues that Keynes does allow for numerical and non-numerical probability, but that he does not think of uncertainty in terms of a class that is entirely non-quantifiable. He claims that interval probability allows Keynes to conceive of that which is uncertain in still probabilistic terms, through interval valued “judgments about the choice of an option, given alternatives, that would be valuable to the decision maker” (Brady 2017b). Brady goes so far as to claim that there is no reference in Keynes’ work to non probabilistic uncertainty. When there is ignorance, it is “undefined because no conditional probability can be defined. It has nothing to do with being unknown” (Brady 2019).

However, Keynes (2015: 542) is quite clear that when he speaks of uncertainty *there is both probable uncertainty and non probable:*

By ‘uncertain’ knowledge ... I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty; nor is the prospect of a Victory bond being drawn. Or, again, the expectation of life is only slightly uncertain. Even the weather is moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest ... *About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know* [emphasis added].

From this, we see that Keynes admits of forms of uncertainty that are probabilistic. But he goes one step further to speak of that which is *irreducibly uncertain*. There is ‘no scientific basis on which to form *any calculable probability whatsoever* [emphasis added]’. This is precisely the type of uncertainty that Brady claims is missing in Keynes. It is the pure unknown. We might be tempted to speak in McTaggart’s terms of this attesting to the fundamental incompleteness of reality. However, this would be to overstate the significance of McTaggart’s Hegelian philosophy in Keynes’ mature philosophical positions. Rather, it is better to speak of the unknown in terms of degrees of reality (numerical and

non-numerical probabilistic),<sup>40</sup> on the one hand, and unreality (non-probabilistic), on the other.

This does not mean that Brady's synthetic conception of Keynes is necessarily wrong. In fact, we should allow for the valorization of empiricism to be inflected into Keynes' rationalism. As early 20th century British philosopher Samuel Alexander expounded, empiricism is not opposed to rationalism. The primary difference between philosophy and the physical sciences is the subject matter. The orientation of the philosopher is towards the *a priori* parts of the actual world, which are "experienced just as much as the empirical ones" (Alexander 1920: 4). This is very much akin to Moore's desire to establish a prolegomena that could make a claim to be scientific. Not that the subject matter is the same as the natural sciences, but that the orientation is indistinguishable. Likewise, Keynes' (2015) prolegomena is scientific, but in the sense that he would later define as economic science 'thinking in terms of models joined to the Art of choosing models which are relevant to the contemporary world'.

Therefore, we ought to see Keynes' orientation in terms of 1) being oriented towards conceptual (*a priori*) realities, but while 2) also allowing for *a posteriori* information to aid in our approximations towards true propositions, while 3) allowing for the (un)reality of irreducible uncertainties. The future, for Keynes, therefore, is *both real and unreal*. It is at this point that we can begin to identify Keynes' formalism, which serves as a transition into a discussion on *The General Theory*.

As Kojin Karatani (1995: 10) notes, all 20th century formalisms are marked by their "insulation from what one might call the problematic of 'to be'." We spoke of this in Chapter One when discussing Deleuze and *the everybody knows*. Everybody knows what relations are, therefore to inquire into the status of the ontology of relationality as such is either secondary or not necessary at all. Like Gödel, Keynes inadequately addresses the ontology of relation, relying on the supposition that what matters is the immediacy of thought to object (concept).

Further, formalism takes Plato's proof for granted. This is because, for Plato, what was unique was not that there was an essential plane of reality, but that it could be discovered *through dialogue*. As Gadamer (2007: 311) writes, *methexis* initiates the "Socratic-Platonic ground which Plato entered with the flight into the *logoi* and which he introduced to the world with the name 'dialectic'." This linguistic dialectic is a formal

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<sup>40</sup> These degrees of reality create degrees of uncertainty. Chick and Dow (2001: 714-715) acknowledge that "While Keynes was for a long time characterized as posing a dual between certainty and complete uncertainty, research resulting from the publication of his *Collected Writings* has revealed his conception of degrees of uncertainty."

process in the manner we established earlier with regard to Laruelle's non-philosophical critique: there is a *decision* based on the principle of sufficient philosophy. And this decision demarcates which assumptions or axioms to include; which method to employ; the logical framework to use; and operates via closure.

Brady (2017a) argues that Keynes' employs mathematical formalism in using the IS-LM model, while using interval valued probability. Chick and Dow (2001), however, point out that the IS-LM model of Walrus produces a restrictive kind of closure, one that has only one solution: equilibrium. Because of this, such formalism is "only applicable in closed systems, which are the ones that can yield certain knowledge." In contrast, they argue that Keynes only allows for *partial equilibrium* in his modeling, through what they call "ordinary logic or human logic." This is because mathematical formalism requires "that all arguments be expressed, or at least be expressible in mathematics" (Chick and Dow 2001: 715). Since Keynes' presents us with an open system, an organic system, and because of his centering of non-quantifiable uncertainty, they conclude that Keynes is not a formalist.

However, the ultimate character of this putative open system is still in question. What is more, the aspect of the future that we have identified in Keynes' thought as unreal has only been posited. The *nature* of the unknown is not revealed. While it is accurate to recognize that Keynes allows for both degrees of reality that are probabilistic (numerical and non-numerical) and also for a conception of the future that is irreducibly unknown (i.e. non-probabilistic), it remains to be seen whether this is a position that is other than one positing a single domain of reality; and we will do this by examining the ambiguities in *The General Theory* that produce various interpretations between those who center time and events versus those who center (quasi) equilibrium and the desire to realize stability through economic management.

## 3.2 Keynes' Economic Management of The Future

### 3.2.1 Chapter 12ers v. Book 1ers: Post-Keynsianism and The Neoclassical Synthesis

Paul Krugman (2011), has made a useful distinction to describe the landscape of Keynes reception. He refers to *Chapter 12ers* and *Book 1ers*. The latter are those who claim Keynes' most significant contribution is the refutation of Say's Law. Book 1ers

read the principle of effective demand as a quasi-equilibrium concept and see no problem combining Keynes's ideas with an orthodox framework in what has come

to be called the 'neoclassical synthesis.' For them, the adjective 'Keynesian' is basically equivalent to 'disequilibrium' or 'non-Walrasian' (Mann 2017: 108).

Chapter 12ers (or post-Keynesians) take a different route, and focus on uncertainty and long-run expectations (Mann 2017: 107). Krugman (2011) claims that Chapter 12ers focus on how "investment decisions must be made in the face of radical uncertainty to which there is no rational answer." What Krugman does not disclose is the ultimate underlying divide between these two approaches: *time*.

Joan Robinson (1972: 6), however, centers this in her famous 'bastard Keynesianism' diatribe:

Never mind! Never mind! cry the bastard Keynesians. We can pretend that capital goods are all made of putty. They can be squeezed up or spread out, without trouble or cost, to give whatever amount of employment is required. Moreover, there is no need to worry about mistaken investments or about technical change. Not only the putty added this year, but the whole lot, can be squeezed into any form that is needed so as to reestablish equilibrium instantaneously after any change. There has been a lot of tiresome controversy over this putty. The bastard Keynesians try to make out that it is all about the problem of "measuring capital." But it has nothing to do either with measurement or with capital; it has to do with abolishing time. For a world that is always in equilibrium there is no difference between the future and the past, there is no history and there is no need for Keynes.

For Robinson, to understand Keynes is to center historical time. Without this, there is no way to understand institutional processes as *open-systems* (Harcourt and Kerr 2009: 193). The bastard Keynesians (or Book 1ers) posit a *closed system* that is preconditioned by a desire to realize a formal stability, whereas, for Robinson, Keynesianism is preeminently concerned with avoiding instability that would be brought about by unforeseen events.

When Keynes (2015: 572) remarks that "[Economics] is a science of thinking in terms of models joined to the Art of choosing models which are relevant to the contemporary world," he posits this as point one of two. The second point is that "economics is essentially a moral science... That is to say, it employs introspections and judgments of value." What matters most of all, for Keynes, is that national prosperity not be threatened. This is seen in his early essay on "National Self-Sufficiency," wherein he

speaks glowingly of a nation that is free to explore the arts and pursue the good (Keynes 2015). And it cuts through to his work in *The General Theory*, where his concerns with expectations are tied to his elaborations on investment decisions, so that he might give rational ground to managing radical uncertainty through a technocratic regime. As Geoff Mann (2017) highlights, all of this relates to the imminence of both *bliss* and *disaster* that face a nation at every turn. Certainly, in the long run, we are all dead. But Keynes endeavors to prolong this fact as long as possible by extending the short-term moments that can ‘put off disaster’. In one of his more bleak statements, he remarks, “The best we can do is put off disaster, if only in the hope... that something will turn up” (Keynes 2015: 783).

Marc Lavoie (2009) formalizes this concern by drawing attention to the two essential characteristics of post-Keynesian thought: 1) effective demand, and 2) historical time. The principal of effective demand is not unimportant, but, considering the nature of this project, we will focus on the second point and the implications it offers by positing a time that is irreversible.

### 3.2.2 *The Irreversibility of Time*

As noted above, of central significance, for Keynes, is the relationship between time and change. In fact, time simply *is* the measure of change. This is more than mere movement. Change is a qualitative designation. Movement is a mapping of a state change. Change is the qualitative shift from one order to another, such that at least one aspect differs (Madsen 2017). So, what we have is a primary concern with *events*.<sup>41</sup> This is why we can think of Keynes’ interest in historical time as more than abstract succession, but as dynamic.

One of the simplest ways post-Keynesians speak of the dynamic of time is that it is *irreversible*. With equilibrium theory, or within a closed system, time is only logical. As such, there is the possibility of reversal. From one moment, to the next, a series of snapshots are presented. There is no explanation of the jump from one unitary moment to the next. They are pure abstract instants. As Lavoie (2009: 14) puts it, “Logical time has no depth.” But with historical time, the dynamism ensures that 1) across the organic unity there will be multiplied effects such that there is no possible accounting for them all and 2)

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<sup>41</sup> We can think of this concern in mathematical terms, as relating to the maxima and minima of a mathematical function. As we saw with Deleuze, this moment at which there is a state change is an event, and it signal a qualitative shift of intensive variation. In other words, an event is an actualization of virtuality.



the arrow of time presses forward, such that the scattering of dynamisms creates an endless heterogenous march.

We see that irreversibility is characterized as both dynamic and historical. While the arrow of time factors centrally in Keynes' understanding of time, what this means is that the future is something towards which historical dynamism proceeds. There is a sort of being-towards-death in this, that the present is straddled between the temporal dimensions, which condition the complex orientation of the present, as we face inevitability.<sup>42</sup> Because we are thrown into complex conditions, we cannot have complete knowledge. However, we can engage in better and worse forms of forecasting. Long-term forecasting is fraught with uncertainty. The further removed we are from our present bearings, the more noise enters our cognitive abilities. Therefore, short-term forecasting becomes paramount. For, if we run into increasing difficulties managing the increasing complexities that come from the unknown, but if we can continually create short term focused models, then we can logically address what can be managed through probability.

Yet, to manage in the short term, *decisions* have to be made. As Keynes' (2015: 572) states, "The object of a model is to segregate the semi-permanent or relatively constant factors from those which are transitory or fluctuating so as to develop a logical way of thinking about the latter." This requires *formal generalizations* to be made so that a logical analysis can begin.

### 3.2.3 *Managing the Short Term: Formalism Between Equilibrium and Disequilibrium*

Skidelsky (2015) notes how in Keynes' *Treatise on Money*, there is an assumption of an ideal equilibrium – the Fundamental Equations. The *Treatise*, thus, primarily deals with explaining why the ideal is rarely achieved (the credit cycle which causes disequilibrium) and what could be done to mitigate the consequences (stability of purchasing power). Brady (2017a) goes so far as to claim that "Keynes built uncertainty into the IS and LP equations" but that it was Robinson and Kahn who overlooked that *The General Theory* simply was IS-LP (LM) by claiming that Keynes was forced to scrub out lines in the manuscript that would have supported their opposition to IS-LM. He views this as a result of a lack of mathematical sophistication, which led to the erection of the post-Keynesian binary between stability (i.e. Walrasian equilibrium) and instability (*The General*

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<sup>42</sup> This straddling is later elaborated in monetary terms, where "Money in its significant attributes is, above all, a subtle device for linking the present to the future; and we cannot even begin to discuss the effect of changing expectations on current activities except in monetary terms." This quote is in the context of "changing views about the future [that] are capable of influencing the present situation." Or, what he calls "the theory of shifting equilibrium" (Keynes 2015).

*Theory*). He even charges Samuelson and neo-Keynesians (Hicks, Reddaway, Meade, Harrod) with failing to understand the macro-implications of IS-LM. For them, it was not possible to have “any microeconomic foundation in optimization theory at the macro level. Maximum principles were only operational at the micro level.” All that could be surmised, for these neo-Keynesians, was whether the equilibrium was stable or not (Brady 2017a).

Walrasian Anghel Rugina goes even further, however, and suggests that there is no logical possibility for any synthesis. Commenting on Samuelson, he writes,

The two positions [Walrasian equilibrium and Keynesian instability] are located in two entirely different economic worlds. In between there is a large number of weak and relatively strong minor disequilibria on one side and a large number of the same kind of major disequilibria on the other side (Rugina 2003).

For Rugina, the reason the Neo-Keynesians can't admit this is because they cannot admit the qualitative separation between models that center on formal equilibrium versus those that focus on instability as the prime variable. For Rugina, Walras is representative of a system that is 100% stable, whereas Keynes' is 50% stable and 50% unstable. But the degrees of separation between these two are not reducible to mere quantitative difference such that a synthesis can be completed. Samuelson's *et al.* error is in their conflation of classical logic to pure mathematical logic. Walrasian equilibrium, on the contrary, is not quantifiable in the same terms as instability as is supposed by neo-Keynesians. This is because the very binary established is itself false. Neoclassical economics (concerned with what he calls “normal economic dynamics”) cannot be characterized as ‘static’. And conversely, Keynesian economics (“abnormal economic dynamics”) cannot be identified as “dynamic.”

Rugina defends the notion that, in Walrasian theory, there is a *dynamics of stability*, where fluctuations occur like a pendulum. For Neo-Keynesians, like Samuelson, on the other hand, there is a dynamics of disequilibrium, characterized by “irregular, stochastic motion around a saddle point” (Rugina 2003). The picture of the former allows Rugina to claim that integration is not a problem in the sense of a fallacy of composition, because a national economy is nothing other than a living organism seeking optimization through economic growth. Optimization seeks the best possible conditions for growth, which is what the Walrasian system of general stable equilibrium posits. This allows for the possibility of determinate solutions to problems, through rational decision-making “both in

consumption and production” (Rugina 2003: 428). Therefore, it is immune to anomalies, relativity, and uncertainty insofar as the guiding light is pure and perfect competition.

The neo-Keynesian approach, by contrast, is foreclosed from this possibility at the outset, because of the inclusion of indeterminacy which means that any solution to a problem is necessarily irrational. All the efforts to mathematize this indeterminacy away are futile. The Neo-Keynesian reliance on modern logic means that their approach is concerned not with truth-content (as in classical logic), but with the truth-form of the proposition. This results in the formulation of models that have the veneer of rationality in logical form, but that abstract away from the concrete realities of human social life.

It is not surprising that Rugina comes to these conclusions. Tracing his own concerns to Moore’s *Principia*, he remarks that the great shift characterized in this meta-ethical project is from the classical concerns of harmony, unity, stability, and perfection, to fundamental relativity, or disequilibrium (Rugina 1998). This charts a concern for the construction of an ethics of relativity, as opposed to the construction of an ethics of certainty.

For Rugina, the possibility for an ethics of certainty requires for great degrees of neutrality with regard to scientific investigation. Supplementing Weber’s theorem of ‘ethical neutrality’, which states that ‘there is no place in science for values and value judgments’, Rugina (1998) replies that not all values are subjective. Even further, he claims that it is a requirement that social, impersonal values and value-judgments have a central role in science, insofar as they are conceived to be objective:

We can formulate, therefore, a law of objectivization of social values as follows: all social values are the result of a historical process of purification and adjustment of some personal ideas or feelings which are attractive to a large number of people; thus they become impersonal, objective. This law opens the door to the induction of social values into modern science, that is, to the possibility of being studied by the scientific method (Rugina 1998: 763-764).

Of course, the irony must be noted that Rugina makes the same critique of Neo-Keynesians that post-Keynesians Chick and Dow make. Speaking of Frank Hahn’s high degrees of model abstraction, they note that, for neo-Keynesians, the purpose of theory is to make claims precise enough for definitive empirical testing.” However, this activity is

never neutral. They claim its close relationship to Hilbert's mathematical formalism,<sup>43</sup> and note how advocates appreciate this approach for its construction of a "closed, logical system" that can be lived in consistently (Chick and Dow 2001: 708). Further, along similar lines to Rugina's criticisms of Neo-Keynesian formalism, Chick and Dow note that this desire to live consistently within a formalist schema tends toward abstraction away from the real world. The consequences of this are that meanings hidden within the formalist process embed themselves into the formal logic, and contribute to analytical distortion.

The rub is that Chick and Dow claim that formalism is not exclusive to the domain of Neo-Keynesian synthesis, but arose from the belief that "nature is entirely mechanical and closed," which they trace to Jevons and Walras. The issue comes down to fundamental ontology. For Rugina, the reason he absolves Walrasian thought from this sort of critique is that Walras' mechanicism allows for fluctuations within an optimization process seeking the best possible conditions for growth. There is, thus, a purposefulness, or teleology, that characterizes his ontology. Post-Keynesianism, on the contrary, by focusing on time and uncertainty, espouses a different ontology, what we can now call a *nominalism*.

This leaves us with the choice of either 1) aggregating the particulars into a system of generality (which would lead to the fallacy of composition), or 2) with the construction of a program of short term modeling that views equilibrium as a kind of "temporary closure, which will break down as time goes by" (Chick and Dow 2001: 713).

### 3.2.4 As If Existing: Function v. Form

Post-Keynesians emphasize the need for such short termism through the selection of inputs for formal modeling *as if* the process had come to a stop. Quoting Coddington, Chick and Dow (2001) note that the issue with formalism is less about abstraction per se, but about the *form of abstraction*. We can relate this to Rugina's claim to an objective formalism through the establishment of social rules that develop over time into objective conditions for future thought and action. The issue, for Chick and Dow, as for Keynes, regards *the selection of inputs* into any model, which is never a neutral decision.

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<sup>43</sup> "Hilbert's formalist approach sought to render mathematics genuinely independent of perception. By depleting the axiom of all intuitive meaning, Hilbert formalized mathematics as a nonsensical collection of symbols or formulas and their transformational rules of inference. For Hilbert the meaning of the axiom is not questioned; it no longer requires intuitive self-evidence. Rather, what matters is the qualification of the propositions that form an axiom and, upon acceptance of such propositions, what type of axiomatic system is constituted... In this way, Hilbert discovered the solid foundation of mathematics in the consistency of its formal system: mathematics does not have to be "true" as long as it is "consistent," and as long as this is the case, there is no need for further foundation" Karatani (1995: 54).

This is crucial for us to consider for a moment, in order to draw a distinction between functional activities and formal appearances. Reza Negarestani speaks of ‘as if’ judgements as being crucial for us to understand functions. He writes,

For example, when we study the heart, it is in regulative analogy to practical reasoning that we say that ‘the function of the heart is to pump blood’. But what we are actually doing is treating the heart as part of a whole (the circulatory system) in terms of means-ends relations: the causal role (means) of the heart is to pump blood in the circulatory system as its end. In accordance with the success or failure of this means-ends relation, which is a piece of practical reasoning, we can then talk about the function or malfunction of the heart (what it ought to do and what it ought not). So, in reality, what we are saying is that, in analogy to practical reasoning, it is *as if* the function of the heart is to pump blood (Negarestani 2018: 10).

This is important in multiple ways. First, functions belong to activities, not things. Second, understanding the nature of ‘as if’ judgments, ensures we don’t commit the naturalistic fallacy. And third, a functionalist analysis enables distinctions to be made between the constituent activities and the form of their appearance.

Insofar as functions belong to activities, not things, and insofar as we want to avoid the naturalistic fallacy, we can deepen the post-Keynesian critique of Neoclassicals and Neo-Keynesianism by highlighting how both conflate function with thing, and conflate is with ought.

It is the neoclassical centering of general equilibrium and utility maximization that confuses functional activities with formal appearances. Robinson (1962: 47) pulls no punches when she decries utility as purely metaphysical: "*Utility* is a metaphysical concept of impregnable circularity; *utility* is the quality in commodities that makes individuals want to buy them, and the fact that individuals want to buy commodities shows that they have *utility* [emphasis in original]." We saw this earlier with Moore’s criticism of the utilitarian conflation of pleasure with good. For neoclassical thought, utility is both a natural function and a moral end. As Robinson notes, this metaphysical postulation goes uncontested in its circularity. And yet, exacerbating her frustration, it is used to construct an arborescent model upon which neoclassical price theory is constructed.

Equilibrium prices, for neoclassicals, “equate the demand for, and supply of, commodities (and factors)” (Nicholas 2012: 459). These prices are putatively economy-

wide prices that balance supply and demand simultaneously, such that the satisfaction (i.e. totally utility) of all trading partners is maximized at these prices.

It is important to note that utility is *maximized* at these prices. ‘Maximization’ is a technical term that relates to functions in math and physics (Rugina 2003). This use of function is different from the use just above. As we discussed in Chapter One, a function in mathematical terms relates to a shift in state. The maximum, therefore, relates to the greatest quantity attainable prior to a state shift. In this sense, utility maximization relates to the greatest amount of marginal utility prior to a change in the quantified value of the commodity (i.e. the price). Again, we have a tautology: utility is maximized at equilibrium prices, the latter which are quantifications of maximized utility.

The conflation of function (now back to the definition above) with thing is most poignantly seen in the Rational Expectations Hypothesis, with its implicit Efficient Market Hypothesis, and DSGE models, which turn the tautological relationship between utility and equilibrium into normative models that govern rules for economic rationality. What is more, their conception of utility maximization is purely defined in *extensional terms*. That is, the abstract variables of price theory measure the shift in state that characterizes utility maximization, leaving their approach solely concerned with extensional quantification.

Neo-Keynesians make a similar error. After initially being critical,<sup>44</sup> by 1952, Samuelson centered utility in his work by concentrating on the fundament of expected utility (Moscati 2016: 221). At root in this turnabout is the *normative force* carried with it. Whereas ‘Revealed Preference’ is valuable descriptively, for Samuelson, it is not fully predictive, and is thereby weak as a normative principle. He came to accept expected utility, however, as carrying that normative force.

Spurred by extensive debates with Milton Friedman and Leonard J. Savage, he accepted that ‘rational behavior’ ought to be understood in terms of utility expectation. It was Savage’s *Sure-Thing Principle* that tipped Samuelson over. The argument runs as follows: If Jimmie wants to purchase land but is unsure of the outcome of the next election, he can ask if the outcome will affect his decision; if he decides that regardless of who wins,

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<sup>44</sup> His previously espoused doctrine, Revealed Preference, argued that utility was unreliable as a measure, whereas consumer habits revealed their preference, which was much more reliable to quantify. In 1937, in “A Note on Measurement of Utility,” he wrote of the impossibility of conceiving of “economic man, whose tastes remain unchanged, who seeks to maximize some function of consumption alone, in a perfect world, where all things are certain and synchronized.” Because life is “socially determined,” there are many parameters that “are not of an equilibrating nature.” Then, in 1938, in his famous paper, “A Note on the Pure Theory of Consumers’ Behaviour,” he formalized his theory of Revealed Preference as a descriptor of behavior under present circumstances. It was not fully predictive, however, because socially determined parameters (ex shift in taste when income changes) cannot be conceived before the fact (at least not fully so).

the investment will be a good decision, then he will make the purchase – it is a sure thing. This had normative explanatory power for Samuelson, but he never accepted it as descriptive, as did both Friedman and Savage. However, Samuelson took expected utility via the normativity of the Sure-Thing Principle as requisite for rational behavior in conditions of risk. Therefore, rather than Revealed Preference serving as the basis for utility measurement, it became expected utility that determined preference, for Samuelson.

During his Nobel acceptance speech, he noted the special importance of employing theoretical economics to welfare calculations. Although he never solved the ‘Maximization problem’, he believed it to be of signal importance. As he states, “I have tried to understand what it is that Adam Smith’s ‘invisible hand’ is supposed to be maximizing.” Then invoking Pareto-optimality, he critiques the New Left (and Old Left) by proclaiming that there is “an especial importance to the notion of giving people what *they* want” (Samuelson 1972: 260-261). The implication, of course, being that only through market competition and expected utility will such be realized. This commitment is common to the neoclassical synthesis, which is fleshed out in – among others – 1) Modigliani’s (1986: 299) life-cycle hypothesis, where the “purpose was to show that all the well-established empirical regularities could be accounted for in terms of rational, utility maximizing, consumers, allocating optimally their resources to consumption over their life, in the spirit of Irving Fisher” and 2) Hick’s (1980) formulation of IS-LM, which codified Walrasian equilibrium on the basis of utility, which he argued was nothing other than a theory of choice.

As with the neoclassicals, the tautology of utility remains, leaving a metaphysical first principle as a flimsy foundation upon which the rest of the system is built. The mark of the *everybody knows* haunts the neoclassical synthesis. And as Chick and Dow repeatedly remind us, in these decisions, value judgments are being made. This is not to say that Keynes was not engaging in value judgments. As ever the moral philosopher, Keynes was aware of the choices that needed to be made when selecting the variables to the analysis. The issue is that neoclassicals insufficiently consider the means by which such value judgements are made, due to their metaphysical positing of utility, and also because of this positing being determined by the logic of extensional quantification.

With Keynes, as Chick and Dow note, the activity of modeling is tied to the nominalist worldview undergirding his ethical orientation, which posits an open system both spatially and temporally: spatially as market boundaries must be traversed to find new elements; and temporally in that both long-term and short-term expectations have direct bearing on demand and output. They claim that since one cannot know all the interactions

described in *The General Theory*, a temporary equilibrium is posited as a necessity merely to begin scientific investigation. This form of abstraction is neither susceptible to the naturalistic fallacy, nor does it conflate functions for things, which therefore 1) allows post-Keynesian analysis to posit forms as *if* they had functions, and also 2) to retain the ability to distinguish constituent activities from the form of their appearance, while 3) preserving the right to make cautious claims about the proper or improper ‘functioning’ of the form without *necessarily* falling into dogmatic acts of closure in modeling.

It is here that we can begin to explore Keynes’ temporal logic of money and its relation to liquidity preference, as this links present and future through a ‘theory of shifting equilibrium’ which allows changing beliefs to influence present decision making.

### 3.2.5 Liquidity Preference and The Temporal Logic of Money

In Chapter 21 of *The General Theory*, Keynes gives us his clearest definition of the temporal logic of money. He draws a sharp distinction between “the theory of stationary equilibrium” and “the theory of shifting equilibrium.” The latter is that “theory of a system in which changing views about the future are capable of influencing the present situation.” Therefore, the importance of money is that it “essentially flows from its being a link between the present and the future” (Keynes 2015: 504). This has implications for the status of equilibrium.

Under the stationary model, where “all things are foreseen from the beginning,” money is superfluous and can be treated as requiring a separate theory. However, with the theory of shifting equilibrium, and as a link between present and future, money takes on “peculiar properties” that are not distinct from value and distribution. Namely, money becomes the form by which the “effect of changing expectations on current activities” is made rational.<sup>45</sup> In the short term, the quantity of money will affect prices. However, in the long term, things are more complex. To clarify this requires an understanding of Keynes’ doctrine of liquidity preference.

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<sup>45</sup> A year after the publication of *The General Theory*, Keynes elaborated on what a monetary theory of production means: “The theory which I desiderate would deal, in contradistinction to this (a real-exchange economy), with an economy in which money plays a part of its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or in the short, without a knowledge of the behaviour of money between the first state and the last” (Keynes 2013: 408).



The factors that contribute to both short and long term activities are psychological and technical.<sup>46</sup> However, they are also ethical (Gomarasca 2018). In the short term, psychologically, Keynes is concerned with “the psychological propensity to consume, the psychological attitude to liquidity and the psychological expectation of future yield from capital assets” (Keynes 1937: Ch. 18). For him, these subjective attitudes “are unlikely to undergo a material change over a short period of time.” In other words, in the formal activity of model construction, these subjective attitudes are considered as independent variables (Madsen 2017). They are the “relatively constant factors” that must be selected artfully in model construction. Such a decision is not a pure technical activity, but is the result of ethical intuition that is able to position itself in relation to those inputs that would contribute to model calculations ultimately aiming towards the good.

Amato, Doria and Fantacci (2010: 69) claim that money has “no meaning of its own.” Its function is simply to procure things through its disappearance (Keynes 1971: 124). This does not mean that money is neutral. As a form, it operates via the logic of selection and closure that we have already discussed (Chick and Dow 2001). Further, intrinsic in money is the temporal concern related to peace of mind that comes by mitigating uncertainty (Culham 2020: 504). Therefore, to say that money has no meaning of its own, is to characterize it with the *as if*. That is, it acts *as if* its function is meaningful, so that its use can be examined in formal terms. However, this formal investigation reveals the activities that constitute money. And what constitutes money are psychological, technical, and ethical activities. In the short term, this is seen, psychologically, by the constancy of consumption, the desire for liquidity, and the expectation of future yield. And, in the short term, things are relatively calculable in formal terms, as the degrees of invariance do not preclude the possibility for ‘actuarial certainty’ (Davidson 2015).

Technically, in the short term, there are numerical and non-numerical probabilities that can approximate stability. Stochastic calculations, for example, are built on the assumption that “economic relationships among variables are timeless, or ahistoric in the sense that the future is merely a statistical reflection of the past” (Davidson 1988: 331). This allows for reliable statements to be made about the future. Built on the putative reliability and sufficiency of access to a closed system, stochastic calculations presume ergodicity, which allows for actuarial certainty to mathematize uncertainty in terms of risk

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<sup>46</sup> In Madsen (2017), he claims that the two factors are psychological and mechanical. However, we hesitate to use the term mechanical, for the philosophical assumptions it makes pertaining to mechanism. Since the psychological factors intrinsically affect the ‘mechanical’, it is better to use the word technical so as to avoid determinist or atomistic reason. See Keynes *The General Theory*, Chapter 21 for a discussion of the co-constitutive relation between the psychological and technical.

(Boltzmann 1884). Essentially this means that time (and uncertainty) is “integrated out,” as the phase space constructs a field in which any and all things can occur, which then allows for any substantial path chosen to be representative of the entire phase space (Weintraub 1991: 102).

However, despite the preliminary assumption of ergodicity, uncertainty asserts itself and time becomes an active factor (Kirstein 2015). Not time in purely sequential terms, but time in terms of its eventual dynamism. Thus, as uncertainty increases with respect to the future, these short term attitudes, remain constant as independent variables, but take on a different sense in terms of the “effect of changing expectations on current activities” (Keynes 1937: ch. 21). As uncertainty intensifies, the importance of money – in its function – requires that it become more secure in its procuring capacity to mitigate the varying degrees of uncertainty. This leads to liquidity preference.

Uncertainty is both a short- and long-term phenomenon. However, for Keynes, the short term is conceived in terms of degrees of uncertainty related to numerical and non-numerical probabilities. This does not mean that the radical unknown will not irrupt. However, the purpose of short-term modeling is precisely to mitigate its effects through interval probability. This is the importance of the “schedule of the marginal efficiency of capital,” which is of “fundamental importance because it is mainly through this factor (much more than through the rate of interest) that the expectation of the future influences the present” (Keynes 1937: ch. 11). Therefore, short-term formal models have validity insofar as they function *as if* uncertainty can be mitigated.

With the long-term, there are both numerical and non-numerical probabilities, but with the added *certainty of uncertainty*. While the psychological factors remain independent variables, their meaning is changed so that now liquidity preference conditions their content. This is not to suppose that liquidity preference only emerges in specific cases of long-term investment strategy (in fact the opposite is the case). Rather, the supposition is that liquidity preference becomes operable in light of the increasing uncertainty that intensifies from short-term degrees of uncertainty, to long-term degrees of uncertainty and the full unreality of the unknown.

James Culham categorizes the four motives for liquidity that help clarify the temporal logic at play here:

- 1) **The transaction motive:** a firm determining which transactions for goods and services will be undertaken. *Relates to consumer demand*

- 2) **The finance motive:** analyzes what levels of financing are required in order to begin an investment project. *Relates to investment demand*
- 3) **The precautionary motive:** insures certain liquid assets are held to meet unexpected payment (both money and near-money).
- 4) **The speculative motive:** directly sensitivity to interest rates, insofar as holding liquid assets depends on “how far the current rate of interest differs from the investor’s perceived ‘safe’ level of the rate of interest” (Culham 2020: 493).

Taken together, these four become paramount in the strategy of mitigating uncertainty, but even more, for our purposes, bespeak of the acceptance of an ontological condition of the unknown. This is because liquidity preference does not turn the unknown into actuarial certainty, as it presumes non-ergodicity. Therefore, particular activities can yield relative numerical and non-numerical probabilities within relatively stable states of affairs, but liquidity preference signals the impossibility of final closure, by valorizing the function of liquidity as preferential in light of the full recognition of irreducible uncertainty.

Liquidity, itself, however, cannot rationalize uncertainty away (such would be the fullest form of “liquidity fetishism” [Keynes 1937: ch. 12]). Try as it may, ironically, *liquidity preference affirms uncertainty*, through preparatory and normative forcing. In Keynes’ words, “Our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations and conventions concerning the future” (Keynes 2015: 546).

This has profound ethical consequences, for Keynes (1978), who believed that the love of money was an unethical tendency increasingly characteristic of the age in which he lived. So long as money is hoarded, treated as a store of wealth, the love of money will 1) prevent economic growth, but more importantly 2) *prevent the pursuit of the good* by fracturing community relations (Ortiz 2021). This “over-valuation of the economic criterion” is the hallmark of all classical and Neo-classical models that center Benthamite utilitarian principles (Keynes 1973: 445). To contest this, Keynes calls on us to eradicate “pseudo-moral principles” and to “return to some of the most sure and certain principles of religion and traditional virtue – that avarice is a vice, that the exaction of usury is a misdemeanor, and the love of money is detestable.” Only then might we be able to “prefer the good to the useful” (Keynes 1978: 331).

However, as Martijn Konings (2018: 19) notes, the postulate of irreducible uncertainty does come with a conceptual slide into a reactionary theory of history, which, we will show next, produces a justification for technocratic sovereignty:

[There is a conceptual slide] from the acknowledgement of the ineradicability of risk, fluctuation, and volatility to a cyclical theory of history that precisely negates the productive role of contingency and is only able to view the speculative engagement of risk as a divergence from foundations.

The post-Keynesian emphasis on uncertainty, then, ought to also be conceived as *highly metaphysical*. By focusing on irreducible uncertainty, it posits a vision of the world that is split between that which is rational and that which is irrational, which positions subjects and institutions of power to be able to set the parameters over that which is deemed rational vis-a-vis the irrational, and to also be the ones who are bestowed with the right and legitimacy to manage the perceived threats of the irrational in the name of the putatively rational.

### 3.2.6 Irreducible Uncertainty and The Rational Justification for Technocratic Sovereignty

Shackle has written that Keynes was two-headed on this front: that he was both positivist and Kantian; positivist with regard to “risk and probability,” and Kantian in that “he had, essentially, only one thing to say about expectation: that it eludes reduction to clear and stable principles and laws” (Konings 2019: 59). This split is illuminated by Paul Livingston’s rubric of the *four orientations of the relation between thought and being*, as both *criteriological/constructivist* and *onto-theological* (Livingston 2012).

The criteriological orientation is characterized by “the totality of existence [being] regulated by the discernible protocols of a meaningful language, comprehensible in themselves and capable of distinguishing between the sayable and the non-sayable.” There is a strict drawing of a line between sense and non-sense. What is crucial to understand for the criteriological orientation is that the sayable and non-sayable are determined to be so “within the determinate norms definitive of a language” (Livingston 2012: 54). Russell’s formal logic is one example; as is Wittgenstein’s *Tractatus*; and perhaps more prudent for this discussion, so is the logical analysis of G. E. Moore.

As discussed above, Keynes notably departs from Moore with regard to the frequency theory of probability, introducing instead his conception of probability based on degrees of rational belief. As Davis (1994) notes, Keynes believed he was extending the work of Russell and Moore against the idealism of Bradley; however, it was Frank Ramsey’s critique of Keynes that brought Keynes to realize that his positing of “abstract but real probability relations” relied on the acceptance that one could intuit metaphysical

relations, which Ramsey viewed as a spurious (even non-sensical claim). In response, Keynes (1973: 338-339) famously declares

[The] calculus of probabilities belongs to formal logic. But the basis of our degrees of belief – or *a priori* possibilities, as they used to be called – is part of our human outfit, perhaps given us merely by natural selection, analogous to our perceptions and our memories rather than to formal logic. So far I yield to Ramsey – I think he is right.

What is important in this concession is that a definite line is being drawn between that which is relevant for probability (namely, that which is susceptible to formal logical analysis) and that which is other. In Keynes' (1973: 338-339) words, what Ramsey revealed was that “the calculus of probabilities simply amounts to a set of rules for ensuring that the system of degrees of belief which we hold shall be a *consistent* system. Thus the calculus of probabilities belongs to formal logic.” The point here is that a set of rules are established so that a consistent system is *constructed* in its logical form. Degrees of belief, therefore, are regulated by the determinate norms of formal logic.

In Livingston's (2012: 54) terms, this is the establishment of a *bounded* and *finite* whole, “outside of which it is possible for the theorist or the inventor of languages unproblematically to stand.” For Keynes, this outside position is a matter of excess. Even in the Ramsey concession he avers that while Ramsey was right to posit that the calculus of probabilities belongs to formal logic, “in attempting to distinguish ‘rational’ degrees of belief from belief in general he was not yet, I think, quite successful” (Keynes 1973: 339). In other words, there is still some measure of excess that needs to be accounted for, grounded. So, while there is a positivist strand to Keynes that is clearly highlighted by his claims that degrees of rational belief are subject to the rules of logical analysis, the very nature of belief itself has metaphysical properties. It is here that his positivism tips into Kantianism.

By drawing a demarcation between the logical and the other, he creates a separation between phenomena and noumena, such that probability (with its accordant logical analysis and the *a priori* possibilities of ‘human outfit’) is governed by a regulative principle. In the weak sense, this regulative principle is subjective and pertains to subjective belief in the vein of Wittgenstein's *Tractatus*. In the strong sense, it posits uncertainty as the ultimate limit that inscribes a border around that which is sayable.

Livingston (2012: 55) notes that there is a political correlate to this criteriological conventionalism, which “sees the totality of a language as wholly perspicuous from outside its determinate bounds, but forecloses or ignores the question of the possibility of *language*, or meaning, *as such*.” Konings (2018: 58) claims something similar when he notes that “uncertainty features as an external limit to statistical probability rather than as something that is always already at play in the engagement.” This more epistemological tendency is seen in, for example, Rod O’Donnell’s defense of the human abilities and characteristics approach (HAC), which is defined by three foundational postulates:

1. “[There are] epistemologically oriented facts about the human condition that refer to limitations in our knowledge and abilities and that are as true, objective, and indubitable as any other facts we possess: we do not know the future; we have incomplete knowledge of the past and present; and we have no means of knowing, with certainty, anything about future events or everything about past and present events.”
2. “[The] HAC approach independent of whatever deeper stochastic or nonstochastic ontology the world might happen to have.”
3. “[Our] rational strategies for dealing with these uncertainties and limitations are either probabilistic or nonprobabilistic, with both seeking as much rationality as situations allow” (O’Donnell 2014: 206).

Where this becomes even more problematic is when this strong sense veers into dogmatism, by asserting that uncertainty is the irreducible unknown in the ontological sense.<sup>47</sup> This is to assert that uncertainty is an absolute that is necessarily excessive. For Livingston (2012: 54), this tendency bespeaks of the onto-theological orientation, which posits an external, ineffable other as a super-existence “that assures the place of everything else, while at the same time obscuring its own moment of institution or the grounds of its own authority.”

This is seen in the work of post-Keynesian theorists (following Paul Davidson), who fetishize the unknown. For them, probability, as such, is irrelevant to uncertainty because it only concerns “knowledge, not uncertainty!” (Davidson 1991: 132). The result is that they tend to depict speculation as tending towards the non-knowable in-itself, which irrationally

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<sup>47</sup> On the post-Keynesian divide between epistemological conceptions of uncertainty (human abilities and characteristics approach) versus ontological conceptions of uncertainty (ergodic/nonergodic), see O’Donnell (2014).

rebounds by destabilizing the real economy, which then requires regulation (Konings 2018: 117). So, we can see how the initial conceptual slide, can turn into metaphysical dogmatism, which culminates in the necessary and justified solution of technocratic sovereignty.

This is not to claim the more epistemologically focused tendency does not similarly advocate forms of technocratic regulation that supposedly curb the fallout from irrational exuberance. In fact, both positions fetishize the unknown. The difference cuts across how one justifies technocratic management: for both O'Donnell and Davidson (Davidson 2012), the matter is concerned with "logical deductions from specified assumptions," but for the former this is a subjectively idealist operation, whereas, for the latter, it is metaphysically dogmatist.

*Prima facie*, it appears that Keynes' critique of liquidity fetishism is indicative of a larger rejection of violent abstraction within the Keynesian program. However, upon closer examination, his metaphysical positing of the certainty of uncertainty reveals the criteriological and onto-theological tendencies in this entire paradigm of thought, which create different but equally potent *fetish forms* by demarcating between the sayable and non-sayable.

It is this boundary between the fetish forms of the sayable and the non-sayable where we find the key to understanding the logic of financial operations in the Keynesian framework. This is because negotiating that boundary takes place via an ongoing communicative activity through the *techné* of institutions and subjects of power. Therefore, to conclude this chapter, we examine a semantic framework of modality that offers a way to reveal the consistent logic that binds the apparently inconsistent tendencies of Keynes' ambiguity surrounding the sayable and the non-sayable. This will prove useful in that it enables us to connect Keynes' philosophy of time, with his ethics, through a form of economic management as an ongoing communicative activity through *techné*.

### **3.3 Macrofoundations of Micro: The Modal Logic of Macroeconomic Rationality**

#### *3.3.1 Economic Management: An Ongoing Communicative Activity*

Referring to the Kantian in-itself, Markus Gabriel (2015: 85ff) notes that the noumena is a type of existing, more than mere existence or non-existence – it is *as if* existing. *As if* existing is not entirely cognizable – if it were, it would be entirely on the side of the sayable, the known; but neither is it known in its absolute unknownness, for this

would be to speak categorically of the non-existent and would be a determinate negation of existence. *As if* existing, on the contrary, is not a static concept but *operates functionally as an ongoing activity*.

To understand the theoretical purchase of the functional ongoing activity of *as if* existing, we can look to Robert Brandom's (2008: 95ff) "Modal Kant-Sellars Thesis." He begins by posing the difficulty with accessing possible worlds (i.e. the in-itself).<sup>48</sup> This is posed epistemologically as follows:

the *epistemological* question of how we are to understand the possibility of our *knowing* anything about such items (and their accessibility relations), and the question how, if the possibility of such *cognitive* contact is mysterious, the idea of our having the *semantic* contact necessary so much as to *talk* or *think* about them can be made intelligible, are wholly untouched by this formal apparatus (Brandom 2008: 94-95).

This empiricist problematic leads Brandom to devise the Modal Kant-Sellars Thesis, which is built upon the rejection of the empiricist assumption of *semantic atomism*. This is because "meaning must at least determine an inferential role" (Brandom 2008: 95).

For Sellars, this means that there is no such thing as pure belief derived from perceptive experience. Even observational beliefs derived from perception ought to be understood as having conceptual content "in virtue of their inferential relations to other possible beliefs" (Brandom 2008: 95). Referring to Wittgenstein's *Tractatus*, Sellars (1968: 23-24) remarks that "at the level of atomic propositions the conceptual representation of a complex state of affairs is a complex of conceptual representations... I wish to call attention to the fact that a comparable thesis can and has been advanced with reference to sense impressions." This is because while Kant does note that "representations of complex items [are] acts of spontaneity or the understanding... he nowhere denies, and is not committed to denying, that the manifold of external sense as such is a relational structure" (Sellars 1968: 29). In other words, nowhere does Kant deny, nor need he deny, that the in-itself can be conceived as a relational structure.

The issue, for Sellars (1968: 29), is that Kant does not clearly distinguish "between the 'forms' of receptivity proper and the 'forms' of that which is represented by the intuitive conceptual representations which are 'guided' by receptivity." For Kant, the relational

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<sup>48</sup> Brandom (2008) loosely offers a short litany to define possible worlds: "abstract objects, as concrete particulars spatio-temporally unconnected to our universe, or as *sui generis* *possibilia*."



structure of the in-itself cannot be the same as conceptual representation. However, Kant could have developed the idea that “the manifold of sense as characterized by analogical counterparts of the perceptible qualities and relations of physical things and events [provide] an explicit account of the ability of the impressions of receptivity to guide minds” (Sellars 1968: 30).

Brandom (2008: 95) speaks of this as the rejection of the ‘layer-cake’ model, where there is a “semantically autonomous base of perceptual experience or reports thereof, on which is erected a semantically optional superstructure, in effect, of theories inferentially based on those observations.” The empiricist position assumes that there are forms of discourse that are purely descriptive. However, as Sellars contends, even the ability to empirically describe presupposes a “grasp of the kinds of properties and relations made explicit by modal vocabulary” (Brandom 2008: 96-97). What needs to be developed, then, is a “functional theory of concepts” (Brandom 2008: 98).

He does this by arguing that modal locutions are tools that reveal, or make explicit, “the rules we have adopted for thought and action” (Brandom 2008: 98). So, when one says, for example, “the sky is clear,” there are rules that govern the adoption of such a position. The statement is not a statement corresponding to a ‘real’ state of affairs, but is rather a pragmatic declaration, or inference, that orients us in a particular way. These ‘rules’ are made explicit precisely when we then say further that “the sky is clear, therefore it won’t rain.” The modal qualification is what reveals the implicit modality of the initial proposition.

Further, when one says “the sky is clear” we can only say this because of the *inferential license* afforded by the modal expression. That is, the modal expression (“the sky is clear, *therefore it won’t rain*”) gives license to the inference that “the sky is clear.” This modal expression serves as a type of condition of possible inferentiality. And this condition of possible inferentiality is what makes explicit the rules that orient certain investigations into, in our example, the weather.

What this means is that “one already knows how to do everything one needs to know how to do in order to introduce and deploy modal vocabulary” (Brandom 2008: 98). This is because when a statement is made, something is both said about the matter of fact and also something is conveyed about one’s beliefs. What is more, these beliefs act as a *pragmatic metavocabulary* that enable one to examine any empirical claim. This pragmatic metavocabulary is, therefore, always-already orienting for any possible empirical claim, which then allows for that which is implicit in any empirical claim to be made explicit (Brandom 2008: 102).

This is even more important when we consider ethical claims, such as “liquidity fetishism is unethical.” Implicit within the claim are the modal commitments that condition one’s normative stance towards the inferentially articulated content. Further, since assertion and inference are indissolubly linked, this means that every discursive practice requires the perpetual giving and asking for reasons (Brandom 2008: 111). To inquire about the ethics of ‘liquidity fetishism’ is to, therefore, engage in the communicative practice of seeking understanding in perpetuity. And this understanding requires that we *endorse* it, take *responsibility* for it, *commit* oneself to it.

How this relates to Keynes is that the Keynesian theoretical framework is a modal investigation into the macro conditions for possible micro experience. Or, said otherwise, there are *as if* existing macro conditions which set the orientation of modal rules by which the manifold of market activities are made intelligible.

To say, for example, “central banks inject liquidity into the market” is a statement that has empirical content. A modal expression that makes explicit the rules implicit in this first empirical claim might be something like “in order to prop up asset prices.” This latter modal expression reveals certain rules that frame thought and practice in relation to the original proposition. The modal claim does not add exogenous truth to the original claim, but serves as the inferential license to make the original claim from, for ex, the perspective of political economic analysis.

Thus, since macroeconomic rationality derives from *as if* existing, the activity of making models is best understood as the practice of giving and asking for reasons. The formalist activity of selection and closure that we noted above is now understood more properly as an inferential modal practice that perpetually navigates through the field of pragmatic metavocabulary, that create conditions of possible inferentiality.

We can bring the theoretical to life by appealing to the work of Hyman Minsky, whose approach centers on balance sheet operations. These technological operations orient subjects to the future by providing the conditions by which the ‘degrees of rational belief’ will be made explicit. How future expectations affect present decisions is, therefore, no Kantian leap (Konings 2018), but rather, is the perpetual technical activity of navigating the sea of modal content implicit in any given empirical terrain.

### 3.3.2 *Balance Sheet Operations: The Technological Logic of Modal Activity*

How Minsky brings this into the light is by emphasizing how balance sheets are filled with “clusters of promises received and promises made” (Konings 2018: 75). The world is uncertain. But we are thrust into this uncertainty and, in a word, compelled to

*endorse* it, take *responsibility* for it, *commit* oneself to it. Speculation is thus concerned with navigating through uncertainty, knowing that the relative success or failure of any investment will only make sense in a revealed future scenario; that is, through the perpetual negotiation of financial communication, which we can now define as *the process of giving and receiving 'reasons'*.

As the capacity to meet obligations, *liquidity*, therefore, becomes a modal capacity to better meet obligations as they arise, with *solvency* serving as a type of qualitative check upon the total asset structure of the balance sheet (Konings 2018). Liquidity fetishism is, then, akin to hoarding communicative content. It is essentially a form of power asymmetry. This explains the desire to hold liquidity. Since social interactions are so complex, and since the future is uncertain, holding communicative power is a way to ensure that single persons or corporate entities can always engage in modal balance sheet operations. To ask 'what can be done?' or 'what should be done?' is framed to varying degrees of inferential purchase depending on one's socio-economic subject position with regard to their liquidity position. Therefore, the tendency to fetishize liquidity (both money and near-money) is to hoard a fundamental social capacity to engage in the very activity of giving and asking for reasons (but now understood in economic terms).

That said, liquidity is also *as if* existing that reveals the most basic activity of the economic system: cash flow (Merhling 2000: 82). Benjamin Lozano (2015) explains the importance of this by noting how what is of value is not an asset but its cash flow. To treat the asset as valuable in-itself is to fetishize it. But to treat it *as if* it were valuable, allows us to reveal the activities of the functions that give it value: namely, its cash flow.

For Minsky, there are three forms of operational cash flow: 1) income, 2) balance sheet, and 3) portfolio. What is important, for us, focusing on balance sheet operations, is that cash flow serves as a type of modal operator that is not reducible to a simple empirical unit, but that is conceptually loaded in the terms that Sellars provides. Therefore, even when examining cash flow, we are engaging with relations between implicit and explicit meaning. Thus, balance sheet analysis enables one to engage with the multiplicity of activities pertaining to the modal operators within and across an economy.

Further, James Culham (2020: 492) teaches us that liquidity needs to be conceived not merely as money but in degrees of intensity:

[Short] term assets (bills of exchange and repurchase agreements) ought to be considered as "near-money or 'cash-equivalents'" in that they are self-liquidating; and "many money-market instruments have a 'stable-price' or 'price-protection'

feature whereby they are 'extremely liquid'... but, like deposits, their value in terms of money is almost always extremely stable.

Therefore, since uncertainty forms a type of modal limit, liquidity operates as a way to prolong running into that limit by enabling the activity of giving and receiving promises to continue through short term interval management, whereby modal negotiations are pursued with respect to "the likelihood and size of the anticipated gain from purchasing an asset" in relation to "the likelihood and size of loss expected at the time of sale" (Culham 2020: 501). This can also be referred to as "different degrees of opinion as to the future of the market" (Culham 2020: 502). Modal strategies can then be charted, through diagnoses of the proper and improper functions of current balance sheet positions, *with the goal of modal inference ultimately aiming towards peace of mind as the liquidity premium* (Culham 2020: 504). The varying degrees of intensity that exemplify liquidity as *as if* existing further provide an aperture on the strategic rationality of modal operations in economic management.

Taken altogether, in the hands of fiscal authorities, through bank-created funding liquidity, in communication with corporations, and working alongside regulators, we can surmise that macroeconomic rationality is an *as if* formalist orientation primarily concerned with the modal rules by which the manifold of market activities are made intelligible.

### 3.4 Conclusion

This chapter argues that in order to understand the logic of finance in Keynesian theory, it is prudent to understand Keynes as a profoundly ethical thinker. It is not a stretch to claim that his economic theory is an expression of his ethical theory. In order to be able to seek the good, individuals and the nation need to be aware of the limitations imposed by an uncertain future. What is more, this uncertain future also acts as an image that spurs thought and action in the present to meet the challenge presented. This is the great ethical challenge that turns into the theory of economic management found in *The General Theory*. To be able to mitigate the negative fallout from an encounter with the uncertain future, Keynes presents us with a path by which we can continually negotiate the ambiguities that face us as individuals and communities.

Finance is a peculiar instrument in this endeavor. It is a modal operation that sets the macro conditions for micro experience through an endless ethical activity of giving and asking for reasons. This takes place through the perpetual rational shifting of present

expectations in relation to how the uncertain can be conceived. Keynesian thought turns the future into a problem for subjects – or more properly for economic science and institutions – to engage in the activity of model construction and policy making, which is both a science and art. The goal is the pursuit of the good: the future as the realization of the good, as understood from the vantage of the present. The result of this desire is the construction of a regime of technocratic management through the frenetic desire to mitigate the consequences that uncertainty certainly carries with it. Thus, our Keynesian aperture reveals the technological dimension of finance as a system of technological management.

Now we turn to the final persuasion under consideration in this project: Critical Finance Studies. The reason this diverse field is so ripe for exploration at this point is that they take the lessons learned from Keynes and his legacy, as well as the systemic approach of Marxian theory, and occupy a third position. If Marxian theory can be faulted for its highly theoretical and abstract approach, and if Keynesian theory straddles the boundary between positivism and Kantianism, Critical Finance Theory self-avowedly seeks avoid both of these pitfalls through a principle of symmetry. It this third approach to which we now turn.

Chapter 4  
Critical Finance:  
From Performativity, to Constructivism, and Beyond

#### 4.0 Introduction: A Speculative Investigation

Considering that there is no consensus definition of what critical finance *is* (Borch 2021), there can surely be no definitive determination of *the* temporal logic of an entire field of discovery. However, commonalities can be found across a sample of figurative voices. What is more, considering the aims of this project, the selection of certain concepts to serve as heuristics that might unveil tendencies indicative of a disciplinary persuasion is crucial.

As we have noted already, the activity of selection and closure is formalist. However, treating the concepts of formal investigation as raw material is to treat them as *if* they were existents. Therefore, the concepts that guide the investigation of this chapter will be wielded in order that they might orient us in a way that we can explore constitutive processes that would be hidden if we were to accept the formal operation as sufficient, in the first instance. Such an activity is necessarily *speculative*.

If positivism views speculation as irrational, and since representational thought forecloses any would-be novelty of speculative thought, our deployment of speculation bypasses these two approaches by 1) giving speculation a status as Reason, 2) prioritizing novelty, and 3) creating a space wherein the speculative, as such, can open fruitful terrain for discussions pertaining to ethico-politico-economico social concerns.

This approach to speculative thinking is characteristic of Critical Finance approaches, more generally; at least, the speculative move away from positivism and representationalism. If, as we discussed in the previous chapter, Keynesian rationality swings between positivism and Kantian formalism, the self-avowed desire of Critical Finance is to occupy a third position. With that, this chapter is not merely an investigation into Critical Finance, but is also a constructive elaboration of this desire to resist either positivism or mere representationalism.

Christian Borch (2021: 11) assists us towards this aim by identifying critical finance as a “*principal of symmetry*.” What he means is that critical finance must be robustly *empirical* and richly *theoretical*. The robustness of empirics is crucial to *familiarize* an approach with the subject, so as to avoid detached theorizing and the likelihood of

mischaracterizing (Borch 2021: 11). Ekaterina Svetlova's (2018) recent work on financial models is a good example of someone who has gone a long way in employing a robust empirics; as is the work of Eve Chiapello (2015; 2020) on management tools and socio-technical devices.

Since empirical work is designed to familiarize, Borch defines rich theoretical work in its *defamiliarizing* role. What he means is that theory is most useful when it creates space for self-reflection and awareness of the tendencies within a given approach so that these tendencies can be recognized for what they are, leaving room for development. The work of Elena Esposito (2011) and Martijn Konings (2015; 2018) are two exemplars on this front, as both engage with the methodological presuppositions that guide much thought pertaining to investigations into finance.

If one veers too far into empirics to the neglect of theory, then one risks missing the forest for the trees, as often happens with work under the umbrellas of new economic sociology (NES) and social studies of finance (SSF). Emphasizing an empirical methodology, NES and SSF have done great work in moving beyond the biases of orthodox economism, bringing the economic and non-economic together to examine social life in all of its dimensions. However, as Leigh Claire Le Berge (2018: 203) asserts, "humanities reads social science but social science does not read humanities." The result is that the metaphysical biases underpinning sociological, anthropological, economic, and political scientific discourse is often under-investigated.

Le Berge's suggestion is to include further work in literary theory, as an example, to buttress inter-disciplinary investigations into finance and time. This is not to suppose that there is no theoretical work defamiliarizing these approaches. However, it is to note that this defamiliarizing work, once settled, becomes its own form of scholasticism. This is seen quite evidently in the strong emphasis on STS/ANT and Foucault in SSF (Brown 2015; MacKenzie 2006). These theoretical underpinnings have proved quite useful in creating a third position between economism and Marxist system-building, but the limitations of both are often underdeveloped, leaving the work built upon them constituted with resources from hidden metaphysical biases that stifle the possibility of more elaborate investigative orientations.

With that, to lean too heavily upon theory is to risk fetishizing top-down idealist approaches, which leads to an ironic romanticism with regard to our pet theories, that become hammers with which all possible subject matter is smashed. Nietzsche's

'philosophize with a hammer' lurks in the background here.<sup>49</sup> Not merely because of its *prima facie* concern with being an active force, but more importantly for its claimed universal ability in deciding how to bring together any possible field of study under the gaze of the active agent, the sovereign decision-maker, or the philosophical overman. Borch (2021) is critical of Lazzarato's work on this front. 'If the only tool you have is a hammer, then everything looks like a nail,' might be the pitfall of the highly theoretical approach. Because there is a lack of familiarization through empirics, the desire to perpetually unground through theoretical analysis leaves the approach overly critical. Borch (2021: 9) claims this approach is at least Marxism-inspired, if not Marxism-adjacent. And as Adorno and Horkheimer's launch of critical theory casts a large net over its targets due the putative adequacy of the critical approach, Bay and Schinckus' (2012) "interdisciplinary manifesto" similarly castigates its target (finance), while sneaking in the presupposed political mission as supposed objective alternative.

With those preliminary remarks considered, we begin in **Section 4.1** by looking to the highly influential work of Donald MacKenzie, and the theoretical influences that frame his own investigation into financial technologies as *engines of financial markets*. If Keynesian theory leaves uncertainty externalized, what we begin with, here, is understanding how Critical Finance attempts to make uncertainty *endogenous and productive*. From there, we build upon MacKenzie's research on the endogeneity and productivity of uncertainty in **Section 4.2** by looking to the work of Elena Esposito, whose use of *performativity and systems theory* explicitly turns the social scientific investigations of uncertainty and risk in Critical Finance Studies into a set of *philosophical problems*. The driving concern, for us, is *the metaphysical status of temporality in her conception of financial derivatives as being concerned with expectations about expectations*. **Section 4.3** turns to the work of Martijn Konings, whose own elaborations of economic temporality signal a way beyond the ontotheological tendencies in Esposito's metaphysical conception of the 'open future'. His centering of the *plastic logic of value* reveals a scission at the heart of financial operations that enables us to consider *the materiality of the event* in terms that approximate those in Part One. Then, we close this chapter in **Section 4.4** by turning to the explicitly speculative financial theories of Elie Ayache and Jon Roffe, for whom Deleuze's novel conception of time factor centrally. With

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<sup>49</sup> It is obviously contentious to include Nietzsche in a discussion of idealism. However, to the extent that his approach was highly formalist in its desire to crush Socratic nihilism, we mean only to draw attention to the fact that the focused desire to occupy a singular and unique position (its own Archimedean point), carries with it ironic notes of idealism.



Ayache and Roffe, we close out Part Two of this project by bringing us right to the precipice of an elaborated conception of the techno-temporal logic of finance, preparing the ground for our culminating foray into the techno-temporal logic of finance in Chapter Five that can aid us to begin to think according to finance.

## 4.1 Intrinsic Uncertainty: Donald MacKenzie

### 4.1.1 *Beyond Judgment*

To begin, we must clarify some thoughts on the term ‘speculation’. For Hegel, speculation is not an ascension into the beyond. The beyond is already immanent to logic. Where formal logic is criteriological in its demarcation between the sensical and non-sensical, speculation admits of no prior act of demarcation, but works through all antinomies. This is because “dialectical logic is already the thing itself.” Therefore, “we pass from logic to metaphysics when we realize that logic already is metaphysics” (Zizek 2017: 29). Thus, there is no speculation outside of thought into some putative Real that we can, then, re-present. Instead, *the Real is always-already internal to thought as an excess*: something hidden; something more-than; something in-complete.

Yet, we must draw a distinction between *speculation* and *judgment*. *Judgment* is the activity of joining “subject and object in a connection of *identity*” (Hegel 2010: 67). *Speculation*, on the other hand, allows for the *non-identity* of the subject and predicate to be expressed. The great error in judgment is when it attempts to address ‘speculative’ targets by conflation or reduction. Martijn Konings refers to this as a ‘Kantian Leap’. Referencing how money is viewed by orthodox economics, Konings (2018: 25) notes how this leap acts as an ideal language that is able to settle all antinomies between “essence and appearance, substance and form, value and price.” Money, therefore, acts as a “neutral technology” that is able to judge speculative content through reduction and conflation. This *one-sidedness* gives “prominence only to one of the propositions in which it can be resolved” (Hegel 2010: 67).

In the case of a temporal investigation into the logic of finance, such a one-sided approach is found in those tendencies that view the relation between present and future in terms of the real versus the unreal, or the rational and the irrational, or the known and absolutely unknown. The formulation this approach takes is  $X=Y$ ; the future is unknown; the real is rational. Such judgments foreclose speculative thought in the name of

objectivity, but assert a preferential criteria selection in demarcating the terms and how they are formalized, in the first instance.

With an eye towards financial temporality, this takes the form of a culture/nature divide, where an ontological split is posited between financial technics (of the human world) and the future as such (the putative natural). Financial speculation, then, is seen as an effort to bridge that ontological divide through epistemological equipping. Like ancient prayer, which was used to ward off famine and extreme weather conditions, financial *techné* are viewed, from this perspective, as reaching into the abyss of the unknown. At worst, it is sin; at best, it can only ever yield asymptotic proximity.

However, Critical Finance begins by rejecting such a divide. In the first place, the use of Actor-Network-Theory gives material to scholars interested in moving beyond posited binaries between subject and object, nature and culture, phenomena and noumena, human and anti-human. In a field of actors, there is no *a priori* judgment about the status of micro or macro realities. The reality of an actor is dictated by the relations that make up its local network, which also has implications for its own capacities within the local network, and that scales up as we traverse the multiplicity of network relations.

The central point is that there is no *a priori* privileged relation between formal categories. In Latour's words, "Nothing is, by itself, either reducible or irreducible to anything else" (1988: 158). This means that all objects and all modes of dealing with objects are on equal footing. There is no difference *in kind* between them. Yet, this does not mean that there is simply a monism of a solid lump out of which objects emerge. Rather, the complete opposite is the case: there is a field of various objects, and the world is a series of negotiations or relations between objects.

These objects, or actors, are fully actualized; they are not holding back any potential reality that could be realized. This is because each actor *is just what it is in its relations*. This implies that relations are active and ever-changing, which means that 'the world' is a constant shuffling network of active forces/relations such that constancy is only a figure of speech.

In *Pandora's Hope*, Latour (1999) argues that all these nodes in the network – actors – are black boxes, objects made of relations that can be opened and endlessly explored, revealing new ways for us to grasp the constitutive relations that make up any 'point' or 'moment' of the network. The importance of this theoretical approach is that Latour fundamentally rejects the logic of Modernity that asserts a privileged position for the subject in relation to the object. For Latour (1993), Modernity tries to purify the world by dissecting it into two utterly opposed realms. On the one side, we have the human

sphere, composed of transparent freedom and ruled by arbitrary and incommensurable perspectives. On the other side, we have nature or the external world, made up of hard matters of fact and acting with objective, mechanical precision.

However, because of his theory of actors, there are not two spheres of existence; there could not be. So to divide the world into these two is simply a false, arbitrary move by 'Modern' thinkers, who then proclaim the right to posit that human knowledge is unique and therefore a matter of utmost priority, leading to ideas issuing from thought being also of utmost importance. Yet, for Latour, human knowledge is on the same footing as lightning, atoms, pizza boxes, light posts, and Darth Vader (Harman 2009).

#### 4.1.2 Pricing Uncertainty: The Engine of BSM

Donald MacKenzie (2006: 22) appeals to Latour, whom he finds valuable in aiding in the deconstruction of the "canonical view in which there is a 'world' entirely distinct from 'language' [which] thus undermines standard notions of reference in which 'words' have discrete, observable 'things' to which they refer." This deconstruction breaks down the binary between theory and object – or in finance between finance model and object to which it supposedly applies. This means there are no simple 'real world' prices about which financial models speak.

Problems of replication and reproducibility are thus characteristic of, what we might call, finance science (MacKenzie 2003: 22-23). MacKenzie speaks of this as a *crisis of knowledge*, and notes how it opens up to a deeper crisis pertaining to the process of classification and commensuration with which actors assign value to goods. Since buyers and sellers need to have some knowledge about the commodities they transact in, if that knowledge is problematized, then this produces crisis conditions. The GFC exemplifies such a crisis of knowledge.

MacKenzie (2011: 1778) uses the GFC to interrogate the "complex, esoteric financial instruments" at the heart of the crisis. Particularly, it is the mysterious 'ABS CDOs' that MacKenzie calls an "epistemic orphan." As outliers, beyond typical comprehension, these financial instruments yield particular risk in that their evaluations are complex. Because of the risk of either default or prepayment, calculating the present value of future payments for these debt instruments is fraught. While there were "clusters of evaluation practices" meant to address potential risks, the GFC proves that there were also slippages in these evaluative practices.

MacKenzie demurs on the point of whether such slippages were due to self-interest and greed or if there was institutional *habitus* built into the practices. Not to deny

greed as a factor, but so that we don't rest in a simple 'amoral calculator hypothesis', MacKenzie (2011: 1830) is more concerned with organizational routine and organizational structure. That is, to what extent is the GFC and its attendant fallout attributable to the routine practices of evaluation that had served an entire sector of the economy quite well for a significant amount of time, and how the ABS CDOs were more akin to a knowledge regime that provided barriers to information flow.

What is most striking is how little awareness there was that something was imminently wrong. In conclusion, what MacKenzie (2001: 1834) leaves us with is the assertion that, more than anything, the crisis "has shown how dangerous it can be (e.g., to public policy) to assess market processes in abstraction from the cognitive and organizational reality of evaluation practices." Since these practices are shrouded in layers of mystery, this leaves us in quite a precarious position. This is why in *An Engine, Not a Camera*, the political thrust of his entire project is to create the conditions whereby a "nuanced and imaginative politics of technology" might emerge (MacKenzie 2006: 26).

It is this endeavor to create a *politics of technology* that draws him to Latour (1999: 78-79), whom he claims establishes finance as a science that "Through successive stages... [links] us to an aligned, transformed, constructed world." Only from such an approach, can we suspend *a priori* judgments and begin an investigation into "the appropriate role for markets in our societies" (MacKenzie 2006: 26). This is because financial knowledge is not correspondence between "the model and an unaltered external reality," but pertains to a chain in which truth-value circulates (MacKenzie 2006: 33).

His primary concern is to show how the Black-Scholes-Merton (BSM) derivatives pricing model "itself became a part of the chain by which its fit to 'reality' was secured" (MacKenzie 2006: 33). This is because BSM has not mapped price-realities 'out there' but "informed practices such as spreading, and those practices in their turn helped to create patterns of prices of which the model was a good empirical description." Thus, in a complex world where knowledge is fraught, "Firms and other economic actors do not choose their courses of action in isolation: they monitor each other, and make inferences about the uncertain situation they face by noting the success or failure of others' strategies" (MacKenzie 2006: 272). BSM serves, as Myron Scholes (1970) PhD thesis attests, as a way to price this uncertainty.<sup>50</sup>

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<sup>50</sup> Myron Scholes (1970): "The shares a firm sells are not unique works of art, but *abstract rights to an uncertain income stream* for which close counterparts exist either directly or indirectly via combinations of assets of various kinds [emphasis added]."

Much as we saw with Minsky in the last chapter, what is of central concern is *cash flow*; but now with BSM we have a proposal to price uncertain cash flows, through a financial technology that does not view uncertainty as exogenous, but as always-already part of the process of knowledge construction. In effect, what BSM does is change the very nature of the speculative relation between model and price mechanisms. Rather than wagers or gamble on the unknown, BSM acts as an *engine*, a creator of conditions in which empirical realities come to be *rationalized*, not a *camera* capturing an external moment as a record.

As former counsel of the Chicago Board Options Exchange, Burton R. Rissman, explains to MacKenzie (2006: 158) during an interview,

Black-Scholes was really what enabled the exchange to thrive. . . . It gave a lot of legitimacy to the whole notions of hedging and efficient pricing, whereas we were faced in the late 60s–early 70s with the issue of gambling. That issue fell away, and I think Black-Scholes made it fall away. It wasn't speculation or gambling, it was efficient pricing.

MacKenzie (2006: 158) elaborates on this admission by noting that, in practice, BSM only found *approximate* agreement with prices in the New York options market. And, what is more, it is now known that price deviations of options from BSM even follow a pattern (Mingiang *et al.* 2004).

The value of this, for us, is to note that what matters most of all is not that BSM circumvents speculation as such, but that it is speculative in another sense; in a sense that is not reducible to gambling or mortgaging the future. However, in order to understand this we need to elaborate another conception of 'speculation'.

#### 4.1.3 *The Leaky Grammar of BSM and The Colonization of the Future*

Quentin Meillassoux (2015: 12) makes a distinction between *speculation* and *metaphysics*. *Speculation* is any philosophical approach *acceding to an absolute*. *Metaphysics* is any speculation that “claims to accede to the absolute *according to a more or less extended modality of the Principle of Sufficient Reason* [emphasis added].” This is the activity that supposes that things have a *necessary reason* for being as they are, rather than otherwise. In this sense, metaphysical speculation is akin to judgment in Hegel, as we saw above. It is the one-sided claim on an identical reality.

Benjamin Lee explains how BSM operates in this way, by claiming that it is precisely not modal but rather operates as a 'leaky grammar'. Quoting Edward Sapir:

The fact of grammar, a universal trait of language, is simply a generalized expression of the feeling that analogous concepts and relations are most conveniently symbolized in analogous forms. Were a language ever completely 'grammatical,' it would be a perfect engine of conceptual expression. Unfortunately, or luckily, no language is tyrannically consistent. All grammars leak (Lee 2018: 247).

Lee takes this to mean that no matter how hard mathematics and science try, no semantic clarity can ever be fully achieved. There is always a leak. Similarly, BSM operates, not as a modal logic, but as an *extensional mathematical language that seeks formal completeness* by erecting a "semiotic discourse grammar of prices" that generates "well-formed 'utterances', without ambiguity or rhetorical flourish" (Lee 2018: 246). Thus, BSM performs its utterances through inversion: what was originally meant to be a model of option prices, has become a model for pricing.

Implied volatility is BSM's forward-looking component operative here. By anticipating "the volatility of the stock at expiration," implied volatility "effectively moves the semiotic dimension immanent in the mathematics of dynamic replication into real time" (Lee 2018: 248). In other words, the performative utterance is now used to drive the orientation of the calculation of market prices, which creates an "'indexical grammar' calibrated to the real-time market price of the option" (Lee 2018: 249).

Thus, by setting the terrain in which implied volatility can serve as a calculative input, BSM becomes an *orienting semiotic discourse* that manages risk through a shared aperture. In this sense, BSM is *criteriological* in that sets the limits around that which is sayable or non-sayable, by creating the conditions by which sensical utterances pertaining to the market can be made. And further, BSM is *metaphysically speculative* in that it accedes to an 'absolute' that is governed by the determinate reality of efficient markets, as all available information is demarcated by the limits of the sayable.

From this perspective, uncertainty comes not to be seen as "an analytical category that serves to describe an inherent epistemic characteristic of the future," but rather as "an empirical category whose construction and use" are ripe for sociological examination" (Muniesa and Doganova 2020: 3). This is because BSM is inherently a critique of 'present prices' by speculatively attending to and performatively uttering novel

constructions of the present through its inverted deployment of implied volatility. In other words, it simultaneously “values and devalues the future,” by deriving value from the future, but then discounting the future, and then claiming a reward for managing the risk that the putative future brings (Muniesa and Doganova 2020: 98). This relationship between *present future* and *future present* forecloses modality by operating within criteriological parameters, and as such tames ‘uncertainty’ through leverage mechanisms that are able to seize and secure it (Konings 2018; Muniesa and Doganova 2020). Uncertainty, then, is part of a political technology that determines how life can and ought be governed (Borch 2021).

Beckert (2016) usefully speaks to this by noting how the world of finance is essentially the professionalization of confronting uncertainty. Not through ‘rational expectations’ but through ‘fictional expectations’, a shared sense of the future is constructed by those with the capacity to address the issue of concern. Of course, part of this has to do with how the issue of uncertainty is constructed in the first place. Finance is adept at creating ‘issues’ to which it is uniquely capable of responding. As Lawrence Summers (2012), perhaps giving up the game, has stated, “[The] task of a financial system is to make the most important decisions that society makes.” Therefore, as the driver of societal decisions, finance is essentially given status as primary power mechanism. It is the constructor of worlds. In Eric Alliez’ (1995) terms, what finance allows for is the ‘capitalization’ of the future, which is done through the “prior production of a concept of time as the time of monetary investment” (Muniesa and Doganova 2020: 13). We can think of this construction of *abstract time* as a *conquest of the future* (Alliez 2015).

However, as Lyotard (1993) has shown, *conquest is not eradication, but is a putting to work*. That is, there is a performative activity, whereby previously constituted forms are converted by the logic of abstraction deriving from a regime of semiotic capture that transforms-through-creation entities into objects in the serialized image of the abstract logic. Jason Moore (2016) also speaks of this in terms of putting cheap inputs to work. Time is a ‘new territory’; the ‘future’ is that domain of ‘uncertainty’ that can be determinately inscribed through a process of vital infusion, giving newly-coded entities a capacity to work (or serially function) according to the logic by which they were inscribed, enclosed, and quantified. This *colonization of the future* (Lysandrou 2016), transforms uncertainty by making the future a *possible* that can be realized through trading claims on future income streams. And despite the fact that these future income streams are as-yet

unknown, they can be converted into risk that is put to work for financial mechanisms as they are wielded by governments and corporations (Lysandrou 2016).

Photis Lysandrou (2016: 464) notes that the typical view of finance theory sees the future only as “an intermediary medium through which equilibrium is achieved, the logic being that it is through continuous trading between agents who make predictions about the future that prices can converge to market clearing levels.” This form of speculation is of the metaphysical nature that we noted above. However, this tendency is not found in orthodox economics alone. While heterodox economics is not geared towards equilibrium and clearing, the future only has status as something that creates conditions for present expectations (or degrees of rational belief). In doing so, heterodox economics treats the future as an external image that maintains a gap between the real and unreal, the rational and irrational, the phenomenal and noumenal. The difference, for Lysandrou, is that these approaches do not “visit” the future, or “occupy it.” Such an approach is anachronistic, and needs to be supplemented by analysis into the ways in which the future is “permanently settled by pension funds and insurance companies and other large institutional investors” (Lysandrou 2016: 466). This does not eliminate uncertainty *tout court*, but with the ever-increasingly efficient and ever-intensifying deployment of financial instruments, the ability to occupy the territory of the ‘future’ is becoming more secure for those with the capital-power to do so (Malik 2014; Lysandrou 2016).

This *spatialization of the future* is a speculative act, in that it does not aim towards an abyss, but rather, through institutional leverage, “is the way we aim to give our fictitious projections a self-fulfilling, performative quality, how we seek to provoke the world into affirmatively responding to our speculative claims, to recruit the labor that will ensure their validation” (Konings 2018: 14). In other words, financial speculation, seen from this vantage, concerns the relation between *the possible and its realization*.

No project has so astutely worked through the mechanism of this activity in temporal terms as Elena Esposito’s *The Future of Futures*. It is to this vital project that we now turn.

## **4.2 Performativity and Systems Theory: Elena Esposito**

### *4.2.1 Esposito’s Proto-Philosophical Project*

Esposito (2011) self-avowedly works from within the space opened by MacKenzie’s investigation into the performative nature of BSM. For her, what is most



interesting about the case of BSM is that it has increasingly come to be more accurate through the forcing of the terrain in which options pricing occurs. She sees this as a case wherein “Reality adapted to the theory” (Esposito 2011: 97). This construction of reality is paramount, for Esposito, because it shows how *the reality of the economy is produced by the economy itself*, with all the attendant socio-political implications that issue from such a claim. And what characterizes this driving economic logic is precisely *expectations about expectations*, through operations that inflate the logic of economy to encompass societal concerns as a whole (Esposito 2011: 98).

Conor Husbands (2020) has written a strong defense of Esposito that bears consideration in relation to Esposito’s work within the context of our own project. He begins his article “Esposito’s Temporality of Finance” with the following assertion: “The last decade or so has seen an upsurge in literature on the theoretical foundations of abstract finance and their intersection with questions of philosophy and sociology” (Husbands 2020: 115). There are a few key phrases to note in order to grasp Husbands’ article, and that will frame the substance of our engagement with it.

*First of all*, let us consider the notion of ‘theoretical foundations’. For us, issues revolving around the status of foundations are central, as Esposito’s project is offered as *a system-specific and therefore radically constructivist and anti-foundationalist project*. There is, thus, an immediate tension to hold onto as we move through Husbands’ engagement with Esposito and towards the larger field of concerns that will shape the remaining pages of this project.

*Second*, that finance is characterized as “abstract” opens up the analysis to investigations into conceptualizations of finance; which means basically that finance is not viewed in empirical terms, but is presented as an *always-already abstract set of operations*. In the language that we employed so far, *finance is formalist*. The implications of this will be explored. *Third*, Husbands draws both of these concerns into a dialogue with central concerns in the *philosophy of time*.

While certain sociological concerns tangentially inform Husbands’ defense, his primary concern is to highlight what he sees as neglected terrain: namely, the *metaphysical stakes* of Esposito’s sociological investigation of the logic(s) of financial temporality. This is crucial in that the metaphysical terrain is precisely what concerns us in this chapter.

The next sentence in the article reveals another issue for Husbands; namely, such that pertains to the deterministic or contingent dynamics of markets, or as to “their interdependency with financial economics” (Husbands 2020: 114-115). There are hints of

MacKenzie and performativity theory here, as both Esposito and MacKenzie rely on performativity theory and a Luhmannian systems-theoretic approach. As Bob Jessop notes in the “Foreword” to Esposito’s *The Future of Futures*,

The general approach and its creative power will probably not surprise those familiar with, and favourably inclined towards, the sociological systems theory of Niklas Luhmann and his followers in the German-speaking world and elsewhere. And it should certainly not surprise readers who are familiar with [Esposito’s] other work, which has developed this approach, applied it in several detailed sociological enquiries, and addressed important contemporary as well as historical issues (Jessop 2011: xi).

For Esposito (2011: 20), this approach is best seen in her suspension of the question, ‘what *is* time?’ in favor of the Luhmann-inspired concern with “understanding how it works, how it is used in order to make decisions, to remember, to hope, and to design.” Time, as such, therefore, does not exist. Rather, it is constructed at every moment. This is something to which we will return.

Husbands also mentions the speculative work of Elie Ayache (2010; 2015; 2016) and Suhail Malik (2014) as examples that have seriously engaged the status and philosophical purchase of contingency: the radically contingent event, for Ayache, and “the fungibility of what is priced, the variability of price, and the volatility of pricing,” for Malik (Husbands 2020: 115). Both Ayache and Malik employ the speculative in ways that attempt to take seriously the limitations foisted by both positivist and representational theory.

Further, Husbands takes notice of the recent work of Timothy Johnson (2016), who has sought to link technical finance and philosophy by making appeals to the explicitly ontological and metaphysical projects of Alain Badiou (2005; 2009) and Quentin Meillassoux (2008).<sup>51</sup>

Why it matters that we pay special attention to these opening sentences of Husbands is that he draws Esposito’s work into direct dialogue with those foundational concerns regarding abstract finance that form the background for Malik, Ayache, and Ray

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<sup>51</sup> It is worth a brief mention at this point of the Elie Ayache and Jon Roffe articles from Finance and Society’s 2016 forum on Ayache’s work, that show just how much Johnson misses the mark in grasping precisely the substantial links and therefore the philosophical material that frames the stakes of the importance of both Ayache’s ontology and Roffe’s conceptualization of the market (Ayache 2016, Roffe 2016).

Brassier, among others. However, while Husbands brings Esposito into the determinate concerns of the metaphysical and ontological projects of Malik, Ayache, and Brassier, what we will demonstrate are the *indeterminate, transcendental, and formal* set of philosophical concerns that frame the various orientations of these thinkers. Failure to attend to these meta-philosophical concerns will ensure that our analysis stops short of weighing the real stakes of the debates between Luhmann- and performativity-inspired theories of abstract finance (what Husbands refers to as the “proto-philosophical kernel” of Esposito’s project), from those that are more intentionally speculative. It is these speculative concerns that we must draw attention to, showing how Husbands falls slightly short of attesting to the fundamental concerns, which yields particular theoretical and practical outcomes that we hope we can work beyond by an appeal to more explicitly speculative projects in moving towards our conclusion.

If Husbands is seeking to draw out the “proto-philosophical,” then we can position our investigation as attuning to the properly philosophical (and even meta-philosophical), in order to circumvent the ontotheological tendencies of both standard theories of finance and also the critical work of Esposito. The irony here is that Esposito’s project is self-styled as already being concerned with the properly philosophical. This is the importance Husbands draws to Esposito’s constant appeals to contingency. Therefore, we must understand what “contingency” means for Esposito in order to place her use of this concept within the larger field of concerns to see how it measures up.

As mentioned above, the way Esposito frames her investigation into financial systems is through the “fundamental theme” of temporality (Husbands 2020: 115). Esposito’s (2011: 1) concern is to examine “how derivatives see and shape the future, as a technical and formalized way of dealing with time and its use, having consequences for society as a whole.” The stakes of the temporal foundation are, therefore, eminently social and political, in that economic problems and financial crises can be seen as pertaining to inadequate conceptions of the relation between present and future (terms that take on specific meaning for Esposito [2011: 6, 9]).

Therefore, Husbands’ (2020: 115) goal is to unveil the meanings of the “camouflaged metaphysical content” and then reincorporate them back into a theoretical investigation into abstract finance so that researchers can be properly reorientated to the temporal foundations of finance. With a nod to our introductory remarks to this chapter, we might say that his project is an intentional effort to *de-familiarize* so that future *familiarizing* empirics will be more properly oriented to the raw material under investigation.

Husbands (2020: 115) believes that while others (notably Jon Roffe) have engaged with these temporal foundations, Esposito's work is unique because of its "sustained engagement." Our contention, however, is that this sustained engagement is not so much on *temporal foundations* but rather on the *status of subjective knowledge* in and to the world. That is, Esposito's investigation is *phenomenological* – or in the language of Meillassoux: *correlationist*.<sup>52</sup> This is not a dismissal of Esposito's project, but a reframing of how to situate it within a field of concerns.

What matters for us, then, is to flesh out this field of concerns by, in some ways, vindicating Ray Brassier's critique of Esposito (and Malik) contra Husbands' defense, and, more importantly in the context of this project, to situate Esposito's project alongside and in theoretical tension with certain speculative projects that have been gaining ground over the past decade, and that might provide valuable material in elaborating a techno-temporal logic of finance.

#### 4.2.2 Endogeneity and Revisability

Of first importance, is that Husbands draws our attention to how Esposito's conception of temporality is *multidirectional*. This multidirectionality is key in problematizing the linear logic of temporality that Esposito dispels. Time does not proceed from past, to present, to future, but proceeds from future to past: "The present prepares the future through its actions, but the framework of expectations and projections orients the behaviour of the system in each present" (Esposito 2011: 22). This multidirectionality leads to a complex set of financial processes that influence price through expectations about expectations; what Husbands (2020: 116) terms a "recursive spiral." Esposito notes that expectations have long been of interest to economic theorists. However, her indebtedness is to Keynes, whom she claims teaches us that "operators have no other choice than to follow their expectations, which are based in part on existing facts, in part on future events that can be predicted only in an uncertain way" (Esposito 2011: 15). Her project begins here, and then proceeds to develop what she sees as a more nuanced and complex model of time, one where time is converted from the unknown into something known.

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<sup>52</sup> Frank Ruda concisely defines correlationism thusly: "It limits things to their being-thought, it limits thought to being itself and thereby absolutizes limitation (via correlation). Correlationism is thus an oblivious metaphysics of (hypostatized) finitude" (Ruda 2012: 57). And again: "The correlationalist is only able to understand claims that refer to something before the emergence of consciousness and thus to the absence of consciousness only as claims about the absence for consciousness" (Ruda 2012: 58). See Meillassoux (2006) for an extended definition.

There are two nested concepts that reveal Esposito's understanding of how this relational and constructive conception of time functions: 1) endogeneity and 2) revisability. *The Endogeneity Thesis* asserts that "temporal relations and determinations are system specific." *Revisability* refers to "[Esposito's] assertion of the variability of [the system-specific temporal] relations and determinations" (Husbands 2020: 116). The specificity of given determinations that are system-specific are constitutive of the local times of that given system and cannot be overmined<sup>53</sup> to suit a single set of global time-relations. Esposito (2011: 23) forcefully rejects any universal conception of absolute time in favor of "temporal relativity." This also implies that from moment-to-moment these relations *in toto*, and at every scale, are revisable.

Esposito references Luhmann to explain how endogeneity and revisability work together. For Luhmann (1988; 1997), time is the *unity of actuality and inactuality*. This paradoxical 'unity' shifts the focus away from independent data and towards the self-referential operations of a given system. As Konings (2018: 33) tells us, such systems are able to "endogenously generate their conditions of possibility. To view life through the lens of self-referentiality, then, is a way of framing the paradoxical phenomenon of determinate things coming into being in a world that has no external mover." The language of 'conditions of possibility' is interesting in that it appeals to the transcendental project of Kant, but also rejects the duality of Kantian antinomies. It is almost as if, as we saw in Chapter Two, that, for Luhmann, systems function by the dialectical *for-itself*.

However, there is another speculative layer in this that calls our attention back to the opening lines of this chapter, wherein we discussed the transcendental/genetic conception of speculation. This is that form of speculation that is concerned with conditions of emergence. For Esposito (2011: 21), Systems Theory is also valuable because it is able to explain "the genesis of time." It does this through *time binding*. This is not the binding of temporal dimensions from an external position, but rather indicates "the generation of structures in the autopoietic process of continuous self-renewal of the system, thus not simply the coming into being of factual states (atoms, suns, ozone hole etc.) of some duration" (Luhmann 1991: 53). What is key here is that this process is *endogenous* and *revisable*. What this means specifically in financial systems is that, through the recursive spiral of abstraction of expectations about expectations, we are presented with a model of finance as a "labyrinthine" system that operates via

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<sup>53</sup> Overmining is distinguished from undermining, in that the latter establishes reality via micro-fundamentalism and overmining accedes to a metaphysical holism. See Harman (2011).

endogeneity and revisability, with its “financial instruments and abstract derivatives... [constituting] their own system of time” (Husbands 2020: 118).

This endogenous and system-specific process of structuration is not what is unique about finance, however. For that, we must attune ourselves to the logic of temporality pertaining to the relation between *present future* and *future present* in the form of expectations.

#### 4.2.3 *The Present Future and the Future Present*

Esposito (2011: 95) claims that, “Although markets have always had their dynamics, which are led by the mutual observation of observers, this observation has now become the real object of transactions.” In short: the mutual observation of observers is the quality of the financial systems’ endogenous temporal logic. This is a high level of reflexivity and abstraction that “at a given point becomes autonomous and follows its own development” (Esposito 2011: 95). On this point, it is worth revisiting the Keynesian elaborations of the beauty contest (Keynes 1937).

What is often missed in discussions about the beauty contest is the previous page of *The General Theory*, of which the beauty contest is an elaboration. The root of the issue for Keynes takes place within a discussion of how “the professional investor is forced to concern himself with the anticipation of impending changes,” which results in “investment markets organized with a view to so-called ‘liquidity’.” The problem facing the investor, then, is *uncertainty*. The tendency resulting from the fear of uncertainty is liquidity fetishism, the most anti-social maxim of orthodox finance, for Keynes. Therefore, rather than hoard cash, the investor ought to instead try to “defeat the dark forces of time and ignorance which envelop our future.” And this is done via a *battle of wits*. The beauty contest, thus, comes to represent another version of how this battle of wits is used to ‘defeat the dark forces of time and ignorance’. It does so by creating conditions whereby the ‘speculators’ orient themselves to the “fancy” of the other investors. It is not about ‘real beauty’ or even hypothesized ‘average beauty’, but about paying attention to what average opinion expects average opinion might be. He speaks of this as the ‘third degree’, but also appeals to the existence of fourth and fifth degrees, but without explaining precisely how they might operate. Much is further revealed pages later when he defines ‘speculation’ as pertaining to “the activity of forecasting the psychology of the market.” And then when enterprise is entrapped by the zeal of speculation, what results is “the capital development of a country becomes a by-product of the activities of a casino.”

The use of the word ‘fancy’ is interesting in that it has important lineage dating back to the English Augustan critiques of capitalism, where speculative value was more attributable to imagination, passion, and convention, than anything real; and which was easily manipulable by groups of powerful speculators who could “spread rumors in the city with a view to creating the changes in public confidence they thought profitable to themselves” (Pockock 1975: 75). The investing society for Augustans was characterized by irrational fantasy and false consciousness, with Defoe going so far as to claim that investors were expected to become obsessed with the opinions of others (Pockock 1975). This amoral other-directedness seems also to be what Keynes is concerned with. The Whig desire to shift from from the irrational fantasy to the rational and virtuous also underpins Keynes’ concern with the tendency towards casino capitalism. As Konings (2018: 59) notes, the beauty contest is almost always referenced to “support of arguments that contrast the self-referentiality and groundlessness of speculative finance with the rational kind of finance that serves the production of real value.” Konings cites Shackle who claims that Keynes is responsible for this tendency.

However, for Esposito, the mutual observation of observers is a productive quality that does not attest to a deviation from an erstwhile real site of value. Even further, it is the system-specific, endogenous temporal logic of “observation” that presents the dissonance between expectations relating to the present future and the future present, which then constitutes “the estimate of risk” (Esposito 2011: 136). For Randy Martin (2007: 4), in order for risk to be “reliably calculable, the future must look like the present.” Similarly, Jameson (2015: 122) avers that “each derivative is a new present of time. It produces no future out of itself, only another and a different present. The world of finance capital is that perpetual present – but it is not a continuity; it is a series of singularity-events.” However, for Esposito (2011: 135), risk is “the operationalization of the management of time that defines the economy.” This is because *what is sold is future uncertainty insofar as it is managed as the difference between the present future and the future present*. Thus, the status of the future *as such* becomes central for Esposito.

Esposito (2011: 22, 118, 191 *et al.*) refers to it as an “open future.” She boldly claims that, “The reality of financial markets is not an ordered one, but a reality that is structured in relation to an always-open future (a future that is always heralding risks)” (Esposito 2011: 118). The language of structuring prompts Husbands (2020: 119) to speak of this open future in terms of a horizon: “the future is the iterative formation and revision of expectations.” This future-as-horizon forms the conditions by which expectations about expectations structure the system-specific and endogenous

operations of the financial system's revisability. This creates a generalized state of anticipation (Adkins 2018: 29). What this amounts to is, "The future is produced – time is traded" (Esposito 2011: 72). Essentially, what this means is that trading time is future-producing and vice versa. The novelty here is that the substance of what is traded is *time*; not just any conception of time, but a very specific form of time as phenomenological horizon.

However, this trading of the phenomenological horizon has a political consequence that attracts Esposito's concern. Namely, that trading the future can lead to the present having *less available future*. What she means is that there are many efforts towards de-futurizing the future. This is the effort to make the present repeated, as noted in the Martin and Jameson quotes above. However, "The attempts of the present to strengthen the predictability of, and control over, the future (to de-futurize it) produce the opposite effect, making the future presents even more surprising" (Esposito 2011: 181). This is because, while there are efforts to 'colonize the future' and to 'spatialize it' (as we discussed above), for Esposito, this desire is thwarted because the future has too many structures that depend on the present and which admit of too much dissonance for significant closure, due to implied volatility being endogenous in present pricing activities. Lisa Adkins (2018: 30) expands on this discussion in Esposito by noting how important it is, therefore, to develop conscious strategies via financial markets that allow for "relatively open possibilities via the embrace of (regulatory) techniques that do not allow for excessive de-futurization... that the future should stand in an appropriate ratio and volume to the present, that is, that the present have an appropriate quantity of future available to itself."

It is this shared desire to have an appropriate quantity of future available to the present that motivates our critique of Esposito's framing of the open future as a form of time.

#### 4.2.4 Esposito's Open Future

Despite claims to the contrary, Esposito's conception of time is metaphysical in the Heideggerian sense, the sense that leads to ontotheology and what Gilles Deleuze calls The Dogmatic and Moral Image of Thought. While time is viewed as 'a structure of systems', for Esposito, what is not given proper attention is the *genesis of time*. That is, system-specificity speaks of the relativity of temporal determinations, but it does not pay attention to *potential indeterminate virtualities that condition the genesis of system-*



*specific time relations*. Part of the reason for this is that Esposito is guilty of what IR scholar Sergei Prozorov calls “passive nihilism” (Prozorov 2014).

For Prozorov, passive nihilism, as political orientation, acknowledges that there is no World (or that it is indeed void) but does not attempt to fill this void with any positive or normative content that might be universalized. Thus, passive nihilism “renounces the search for the universal as such and remains content with the particular positivity that it inhabits, which now appears wholly autonomous from the void of the World, which is in turn reduced to a neutral and inconsequential background of the infinity of positive worlds” (Prozorov 2014: 42). Passive nihilism is the political project whereby the universal as such is rejected in favor of regional narratives and “intra-worldly activity” (Prozorov 2014: 42). However, as with all passive nihilism, the universal sneaks in the back door. Markus Gabriel reveals how.

Referring to the “*causa sui* structure” of Luhmannian radical constructivism, Gabriel (2015: 147) remarks that, as an “extreme form of correlationism” constructivism “says that there would have been no domains [worlds/systems/etc] had there been no discursive practices.” The logical conclusion of this is that no domains would have ever existed without discursive practices bringing them into existence. In the language of Esposito’s project, financial systems require their own autopoietic discursive performative activities of generation. However, in Luhmann’s rejection of the determinately universal, he appeals to an unobservable One. This “ineffable One” is the secret origin of the plurality of systems (Gabriel 2015: 147). Paul Livingston rightly refers to such appeals to an ineffable outside as forming the quintessence of the ontotheological orientation. As we discussed previously, ontotheology sets up a “totality of beings by reference to a privileged being, a ‘super-existence’ that assures the place of everything else, while at the same time obscuring its own moment of institution or the grounds of its own authority” (Livingston 2012: 54). So, what is the ineffable One in Esposito? It is precisely her metaphysical notion of the ‘open future’.

Esposito’s future-as-horizon is conditioned by the determinate conditions of the orientation of observers to shifting observed. Formally, there is a necessary relation between the present future and what will come as future present. This establishes her approach within a purely epistemological frame that relates to finance’s probabilistic rationality. Therefore, the substance of the open future is a probabilistic future insofar as it relates to the decision capacities of those wielding capital-power.

Husbands appeals to the work of Suhail Malik (2014), who employs the notion of capital-power (derived from Bichler and Nitzan [2002; 2009]), in order to demonstrate the

political implications of Esposito's theoretical model. For Malik (2014: 642), following Bichler and Nitzan, capital is *directly* power because it is "neither a material entity, nor a productive process, but rather the very ability of absentee owners to control, shape, and restructure society more broadly." This has resonance with the project of Negri, as we saw in Chapter Two. With regard to Esposito, Malik's concept of capital-power is meant to buttress the claim that the future is de-futurized through capital-power's enclosure of it.

However, for Malik, the derivative has another capacity that he draws from Esposito that he thinks opens up space for the introduction of novelty. For Malik (2014: 638), derivative pricing exemplifies the same "schematic logic" as Derrida's *différance*. This is because "derivative pricing makes explicit in the present the relation to an inactual and necessarily uncertain future present—as a present future" (Malik 2014: 714). It is the endogenous nature of implied volatility in derivative pricing that always-already internalizes uncertainty, or what we might call an excess and therefore a fracturing of capital-power's ability to colonize the future. As Brassier (2017: 101) notes, Malik's purpose in pursuing this line of thinking is that he wants to "pulverize the apperceptive unity that underwrites political subjectivity" that would create an anticipatory orientation that would pre-program the nature of the future as such. Thus, for Malik, Esposito's project is valuable insofar as it rejects the Kantian and even Hegelian projects of bridging any supposed gap between present thought and future possibility. The issue, for Brassier, is that this leaves us with no substantive political project in this orientation, because there is no *ground* that would motivate it. What we are left with is a self-legitimizing formal system of cognitive abstraction driven by those with capital-power, i.e. power over the pricing process.

This power over the pricing process is what Esposito frames in relation to expectations about expectations in her temporal logic of abstract finance. In her words: "Derivatives allow one to make decisions today that affect the way the future will be, while preserving the freedom to decide one way or the other when this future will be present" (Esposito 2011: 105). This seems to be the key to Esposito's temporal logic: namely, a theory of negative freedom that enables decisions to be made today while 'preserving the freedom to decide' in a future present. What is most essential is that *financial instruments operate as subjective instruments that give capacities for decision making*. In other words, Esposito views financial instruments purely in terms of how they give (negative) freedom to a subject position in order that one can continue to make decisions.

At this point, Husbands (2020: 124) is right to point out that Brassier's critique is primarily addressed to what he sees as Esposito's correlationism: "For Brassier, any distinction between [present future and future present] is equivalent to a statement about epistemic limitations." But Husbands defends Esposito by claiming that she circumvents this critique by converting "the revisability of these expectations into ontological indeterminacy" (Husbands 2020: 24). However, her theory is only ever discussed in relation to choice and the (negative) freedom to make future choices. And her putative "ontology" is only ever presented as a projected performative fantasy that is erected by those wielding capital-power. In other words, indeterminacy, for Esposito, is best seen as a reified cognitive abstraction that lacks a material base.

Drawing a distinction between cognitive and real abstraction, Brassier (2018: 111) remarks that "real abstractions are generated through social practices." Such concrete practices are the materiality of cognitive abstractions (of which the market is one). Cognitive abstractions serve as "ideological masks," and unveiling their mystifying tendency is key to the project of a critique of political economy precisely because it breaks with the metaphysical tradition – and thus sets a chart towards an orientation that would not be ontotheological. Brassier (2018: 118) asserts that, "Consciousness is necessarily false: it does not express the social relation (the system of impersonal practices) that is its essence; it represses it." Thus, we see the stakes for Brassier: Esposito's project not only fails because it is ontotheological, but as ontotheological it actually represses the materiality of real abstractions (i.e. social practices) that constitute social systems. Esposito's theory reinforces the capitalist tendency towards mystification via its own fetishization of the "open future" as a "transcendent generality" – the ineffable One (Brassier 2018). What is more, it is this distinction between cognitive and real abstraction that grounds Brassier's critique of the correlationism of Esposito. And this is why her conception of the future is not ontologically indeterminate, but only epistemically uncertain. The stakes of this distinction between cognitive and real abstraction are something that Husbands misses in his defense.

Further, what we learn from Markus Gabriel is that despite efforts to the contrary, the 'postmodern' desire to overcome ontotheology through its varied constructivist projects very often runs into the problem of *maintaining a conception of a single domain of reality*. The ontotheological tendency is to create world-pictures (Gabriel 2015: 23). For Esposito, this single domain is the world of systems regulated by the formal notion of the open future. Despite the fact that there is purported to be endogenous volatility, this conception of volatility is always-already pre-coded by the subjective orientation of

decision-makers. Which means that this conception of openness is never truly ontological, but only ever metaphysically speculative.

As we learned in Chapter Two, Esposito's project is best understood as being part of that tendency to take the unity of apperception away from the individual subject and project it, overmine it, as a way in which systems become *for-itself*. This is taking the subjective and cutting it through systemic operations at every level by subjectivizing *all* through the temporal relation between a present state of anticipation and a future state of modified anticipation. As Brassier (2012: 104) reminds us (echoing Sellars), "the relation of analytical dependence between represented and representing also renders the objective reality of the represented content conditional upon the formal reality of the representing act."

The upshot to this is that we might be able to claim that this tendency is not absolute but contingent as part of capital-power's constructive project. That is, perhaps we can agree with Malik's reading of Esposito that capital-power is a governmental force that constructs subjective conditions through the process of conversion, which results in the construction of an ontotheological paradigm; one that is historically contingent and ontologically heterogenous. However, this would need to be explicitly argued and proved. The result would be some sort of claim that it is, in fact, finance that acts as an operator of closure that deposes other possible ontological tendencies. The problem is that to argue in this manner is to veer closer to the position that pathologizes finance *a priori* as a distorting force, which is necessarily opposed to Esposito's project.

With that said, however, there are ways of conceiving finance speculatively in another manner that would not necessarily bring us back to the real versus unreal, or rational versus irrational, or good versus bad binaries. While a full-throated defense of this position is beyond the scope of the present project, we can begin to chart the path in such a direction. The remaining pages of this chapter will begin to open the door in such a direction by looking at more speculative approaches within critical finance studies, while the final chapter will sketch a speculative proposal for how we can begin to think finance in both critical and speculative ways that avoid the traps of moralism that accompany the real-unreal binaries.

## 4.3 Beyond Constructivism: Martijn Konings

### 4.3.1 Technological Constructivism

One way we can conceive of a project beyond the traps of performativity that we have just been engaging is by looking to the work of Martijn Konings (2018), whose investigation into “speculative preemption” carries import in thinking in this speculative manner to which we have been alluding. While Konings also draws heavily from Luhmann, his divergence with Esposito is that he stops just short of fetishizing the future, by instead opting for a theoretical pluralism that creates an approach that is much more paradoxical. This is less a Rortyan ‘supermarket trolley’ approach, where the theorist-as-consumer chooses at random from selections for theorizing on offer, than what is better conceived as an almost indiscriminate deployment of raw material to stress test both the theoretical concepts typical of social scientific investigation, and also as a type of multifrontal onslaught directed towards the material under consideration.

Against the standard approach whereby speculation is either viewed as irrational or tending towards a generic open future, Konings emphasizes the rational element in the speculative preemptive activity of neoliberal rationality that materially reinforces its own conditions of actuality. Referencing the GFC, as interest rates were inept at fixing the asset price deflation, the technological apparatuses of state management became fully committed “to the validation of its constitutive speculations.” Greenspan and Bernanke “did what had to be done, manifesting a paradoxical coincidence of contingent and necessity, decision and imperative.” This paradox is crucial because it does not admit of closure or synthesis. Konings presents a vision of state activity that is fundamentally rent asunder in its core. Between contingency and necessity, between decision and imperative is an immanent scission. But this scission is not a gap to be transcended. It is an *unobjectivizable transcendence* (Brassier 2012).

As Konings repeatedly emphasizes, the ubiquity of Polanyian critique presumes an ebb and flow between processes of embedding and disembedding. However, Konings emphasizes that the system of risk management is not amoral excess or systemic failure. All such presumptions begin with the assumption that there is a fundamental domain of real value from which speculation tends to deviate. Instead, Konings (2018: 121) presents a conception of radical endogeneity, where “Techniques of system risk assessment are approached not in terms of their ability to reduce uncertainty, but precisely as a set of instruments to support and manage a distinctly neoliberal logic of financial governance that acknowledges the endogenous role of both instability and risk shifting.” This is

because neoliberal rationality is intrinsically creative, generative. It does not admit of the negative in any absolute sense, but operates through what Byung-Chul Han (2017) calls *pure positivity*. In Konings' (2018: 123) language, "[Neoliberal] governance techniques do not simply legitimate an already existing state of affairs but elicit a new series of investments." This is not an after-the-fact activity, but one that is speculatively *preemptive*.

This produces a set of conditions where there is "a paradoxical movement whereby limitless precarity becomes valorized as the speculative foundation of order" (Konings 2018: 124). This paradoxical movement contains both reactionary and inventive aspects that deserve serious attention beyond dismissal as "old-fashioned ideology." To do so would be to engage in a hasty moralization that bespeaks of a Fall from some foundational purity. Thus, for Konings, to understand neoliberal rationality, we must tarry with the paradoxical while not neglecting the critical, so that we can better understand how neoliberalism has become further entrenched *via* crisis conditions.

#### 4.3.2 *The Plastic Logic of Value*

The notion of plasticity, adopted from the work of Catherine Malabou, takes on a central power in *Capital and Time*, namely because it is the "plastic logic of value" that is generative of temporal structures. This becomes a sort of *transcendental theory of actual genesis of neoliberal temporality*, for Konings. The plastic logic of value is what gives the preemptive speculative capacity of leverage its internal vitality. In his words, "Plasticity refers to the constitutive character of contingent associations, the way one connection inflects the generation and patterning of new connections and thus adjusts the course of history, allowing for the emergence of determinate entities in a world that has no external mover" (Konings 2018: 7).

When Malabou employs the term plasticity, she has in mind two capacities: *malleability* and *fissure*. That is, pure malleability is simple elasticity, the capacity to receive form from an external efficient cause. Plasticity, on the other hand, also carries with it connotations of explosiveness and irruption, wherein genuine novelty emerges.

In *What Should We Do with our Brain*, Malabou (2008: 5) develops a logic of neuronal plasticity that espouses this dual conception of plasticity:

We should not forget that *plastique*, from which we get the words *plastiquage* and *plastiquer*, is an explosive substance made of nitroglycerine and nitrocellulose, capable of causing violent explosions. We thus note that plasticity is situated

between two extremes: on the one side the sensible image of taking form... and on the other side that of the annihilation of all form.

The potency of the plasticity of value, then, is that to grant active and not merely reactive quality to value. It is the self-generative nature of plasticity that is key. The irony of Konings' use of plasticity, however, is that for Malabou plasticity indicates a way to theorize 'escape [from] the insidious command of the New World Order', whereas for Konings the plastic logic of value demonstrates neoliberalism's own internal resilience. It is precisely the scission, or the logic of *plastiquer* that stands between contingency and necessity, decision and imperative, that creates the conditions for its self-reproduction.

In a manner similar to Brassier's (2012: 104) discussion of representation, the plastic logic of value is formally self-reinforcing: "Since every represented implies a representing, the objective reality of a represented entails the formal reality of the representing through which it is represented." And, for Konings (2018: 8), it is precisely *money* that carries this self-referential quality: "[Money] is itself the thing that it represents. It refers beyond itself, back to itself, simply promising more of itself." In a word, money is Subject-as-substance. Although Konings (2018: 131) does not use this language, he does claim to be reworking a Marxist critique of capitalism "along non-essentialist lines."

What we take this to mean is that he wants to think totality but without the residual foundationalism and romanticism that is carried through the Marxian project. Like Postone, for Konings, there is no vantage 'outside' from which to make a critique. In this respect, Konings' project is anti-criteriological. However, he also skirts the onto-theological trap of performativity-inspired projects, such as Esposito's, by giving priority to the encounter of the event that is never recognized until the encounter as endogenous scission. This unobjectivizable transcendent brings Konings' work closely in line with the Deleuzian emphasis on encounter that we discussed in Chapter One, and also resonates with Laruelle's non-philosophical project of the Real that we discussed in the Introduction.

What this means is that there is an intentional critique of metaphysics in Konings that is distinct from Esposito's project. Or, as we can say in the context of this chapter, that Konings' critique is of metaphysical speculation, the one-sided judgment that operates via simple representation. It is this latter approach that falls into simple moralisms and essentialisms, while Konings endeavors to avoid these pitfalls by unveiling the rationality of neoliberal mechanisms. This means that his project is what Paul Livingston refers to as *Paradoxico-Critical* (P-C).

We have already discussed Livingston's criteriological and onto-theological orientations. What distinguishes the P-C orientation from these is that, whereas they posit an outside to a totality or given delimited regime, the P-C orientation admits of no such outside, but affirms the paradoxical limits of self-referentiality (Livingston 2012: 56ff). It allows for a conception of totality, but without appealing to either an ineffable beyond or to an activity of constructivist limit-drawing demarcating the sayable and non-sayable.

That said, the P-C orientation "does not refuse the relevance of internal linguistic reflection," and neither does it erect a foundation that would ultimately justify such an operation. It does this by "tracing the destabilizing implications of the paradoxes of self-reference at the boundaries of the thinkable, or sayable." The picture Livingston offers is one where the very boundaries themselves are never superseded, but are endogenous to the mereological relations of the totality. These boundaries flex and transform through language's ability to "figure itself by displaying its own structure" (Livingston 2012: 56).

However, this One is not the ineffable one of ontotheology (as we saw with Luhmann and Esposito). The One of the P-C orientation is "rent by the paradoxes of in-closure at its boundaries." Livingston (2012: 56) explains, "It is in this fashion that it performs its critical work, tracing and documenting the complex topology of in-closure *without* attempting to resolve it into a univocally consistent doctrine of being." So, despite affirming a sense of completeness, the P-C orientation also affirms inconsistency as constitutive of its self-referential construction.

While Konings does employ the project of Luhmann to develop a theory of endogeneity, it is his speculative concern for the generative conditions of temporality that moves his own approach beyond the onto-theological tendency of performativity that characterizes Esposito's project. And because of the self-referential nature of the plastic logic of value, the affirmation of the One is an affirmation of a One that "becomes many as soon as it passes through the 'unifying' function of language, thus producing the gulf between the sign and its reference" (Livingston 2012). This gulf is that unobjectivizable transcendent of the scission between decision and imperative, between contingency and necessity, that is insistent in every utterance. It is the quality of the plasticity of value that conditions actual financial operations through money's desire to self-reproduce (Yuran 2014).

#### 4.3.3 *Between The Paradoxico-Critical Orientation and The Generic Orientation*

However, there is a fourth orientation of the relation between thought and being that Livingston discusses that we have yet to mention: the *Generic*. In *The Politics of*



*Logic*, Livingston (2012) attributes this position to Alain Badiou. However, more recently, since the publication of Markus Gabriel's *Fields of Sense*, he has also included Gabriel within this framework:

Both projects have in common that they begin with an inaugural declaration of the impossibility or incoherence of the world, universe, or totality of what is as such. In both cases, as well, the key arguments for this denial of the totality are premised directly on the paradoxes of reflexive totality. Thus (Badiou) the assumption of the existence of a universal set, or a set of all sets, leads directly to the contradiction of Russell's paradox and thus demands that there can be no such set; or (Gabriel) the idea of a list capable of referring to all entities undermines itself, owing to the existence of that very list: again, this shows that there can be no such list. Furthermore, in both cases, the demonstrated contradictoriness of the assumption of such a totality – or of the unitary provision, at one stroke, of a sense for the whole of entities that are – is seen as decisively supporting, instead, the intuition of an irreducible *plurality* of fields or domains of sense, each understood as a relatively *local* field or domain of the presentation of entities, constraining the ways these entities can, within them, be or appear (Livingston 2020: 233).

If the P-C orientation sides with completeness and inconsistency, the Generic is to be understood as affirming incompleteness and (discursive) consistency. This consistency is driven by a background structure that functions as a kind of metaphysical absolute. It is what allows for Badiou's (2005) set-theoretical investigations by means of ZFC set theory, and what allows Gabriel to invoke a 'governing sense' that creates the conditions for any possible entity to appear in a given field (Livingston 2020: 253).

Thus, at this stage, we are presented with a choice between the P-C orientation or the Generic. While this is not the place to settle such a debate, what we will now briefly close with are speculative investigations into finance that shift between these two. What we saw with Konings was a more general exemplification of the P-C approach within the broader field of the critique of political economy, that tips into Critical Finance Studies as well. With the following approaches, we see a more explicit attempt to address the logic of finance from decidedly speculative perspectives.

## 4.4 Speculative Finance: Elie Ayache and Jon Roffe

### 4.4.1 Against Probability

Elie Ayache and Jon Roffe have taken great strides to think beyond cognitive abstraction and the tendencies towards metaphysical speculation and ontotheology. We might say that they both diagnose the ontotheological orientations of standard finance theory, and also seek to provide speculative sketches for how to think beyond such tendencies, while providing positive accounts of finance. For Ayache, Quentin Meillassoux's hyper-chaotic contingency and the "radical event" confound the possibility of any probabilistic orientation reliant on a determinate object of speculation. And for Roffe, it is Meillassoux plus Deleuze who add extra conceptual resources for helping think beyond the dogmatic and moral tendencies of ontotheological dogmatism. As we will see by the end, Ayache is representative of a Generic orientation, while Roffe can be considered within the P-C camp.

Since, as we saw, for Esposito, the relation between present future and future present is reduced to that between correlational capacities in one temporal order vis-a-vis another, this means that her considerations of temporality are only ever phenomenologically determined by the relations established at the level of *actuality*, but without considering *virtuality*. Ayache (2016) engages this problematic directly when he draws on Meillassoux's work to critique probabilistic reason more broadly.

For Ayache (2010: 6), probability can only choose "among possibilities that fall within a single context." However, the derivative is not localizable to a context, and as such, exhausts probability by saturating context. The derivative becomes the market, for Ayache, which is a medium of contingency, which further means that derivative trading is the activity of changing context, not possibilities. As a medium of contingency, then, the market (or the derivative) is fundamentally *non-probabilistic*. In *The Blank Swan* he targets Taleb's notion of the 'black swan event' precisely because the latter claims to be wary of contingent possibility and the highly improbable event, but only ends up offering a vision of a pre-formed world that is given once and for all. As we saw in the last chapter, in the strong sense, Taleb's black swan event is of the order of the *unknown unknown* (Ayache 2010: 9).

Such a conception is part of the stochastic view of derivative pricing that traces its lineage back to Louis Bachelier (2006). The picture of the world is one wherein processes can be mathematically modeled with a calculus producing a 'likelihood' (i.e. a *possibility*). This means that there is no certainty in the market, only likelihoods. However, for Ayache,

the medium of contingency is of such a nature that predicting the future is inadequate insofar as modeling the future is a category error. Taleb's error, then, is that he remains trapped within this epistemological paradigm that presumes that what is of concern is mitigating the unknown through probabilistic control mechanisms. But once we understand the radical nature of contingency, then probability itself is problematized.

Roffe extends this critique against probabilistic reason. He begins by looking to Henri Bergson: "For the possible is only the real with the addition of an act of mind which throws its image back into the past, once it has been enacted" (Roffe 2016: 217). Further, Roffe (2016: 221) directs us,

The category of the possible presupposes... that 'the possibility of things precedes their existence. They would thus be capable of representation beforehand; they could be thought of before being realised' But note the ontological presupposition that this involves – that the possible has a being prior to the real that it may become.

It is this *prior and formal reality* that is the issue. Such operates as a pre-constituted, abstract horizon to be realized, rather than offering a theory of the truly potential. In Ayache's terms, such an orientation forecloses the radical event.

With prediction, what we have, then, is a tendency for the future to be pre-coded by the arbitrary selection of criteria in the present that models probability relations based on the specific features of the real that it deems valuable. Prediction constitutes the conditions of actuality, by constructing technics that operate through a logic of conversion and self-replication, insofar as only those things that are already converted according to the logic of probability are useful for modeling.

However, in the work of Meillassoux, this entire logic is deposed. As Roffe states, for Meillassoux,

the world could change at any moment for no reason whatsoever. Now, the contingency in question is identical to neither stochastic randomness, nor to either risk or Knight's well-known category of uncertainty... At issue is not knowledge of the real but the real itself; we are dealing with an 'absolute ontological truth'" (Roffe 2016: 221; cf Meillassoux 2008).

It is this distinction between knowledge of the real and the real itself that separates the correlationist account and the speculative version.

Turning back to Esposito, her approach does not attend to this speculative concern because she employs a Kantian schema (i.e. correlationism). Husbands acknowledges that Esposito does not make the speculative move of Ayache, Roffe, or Meillassoux. He even lingers for a moment over potential problems with Esposito's relativism (i.e. passive nihilism). However Husbands' repeated defense of Esposito is that she does offer a useful version of indeterminability. The problem, as we see it, is that her conception of indeterminability is a relative, system-specific contingency produced by the internal temporal relations of the financial system, insofar as this system is primarily concerned with the relation between thought and being; that is, as the relation between subjects and the projected fantasy-object of an amorphous open future that is always noumenally unknowable.

Still, Husbands (2020: 125) claims that "*The Future of Futures* harbours no pretence to generality or fundamental or originary ontology such as would be needed for these extravagant implications to mar Esposito's perspective, or for Brassier's objections to be terminal." However, understanding the larger meta-philosophical foundations of Esposito's project as one of cognitive abstraction undermines this defense. Further, her conception of contingency merely ends up meaning that decisions are made under differing performative regimes. Thus, uncertainty is the relation between a knower trapped within its position of finitude, cut off from the real, and thus destined to engage in self-perpetuating performative gestures while hitched to the ineffable Other that is the open future.

That said, while Meillassoux's hyper-chaotic contingency, and Ayache's appropriation of it for speculative finance theory, is valuable in displacing any notions of correlationism and the probabilistic reason attendant to it, Frank Ruda speaks to the limitations of Meillassoux's theoretical project.

#### 4.4.2 *The Limits of Contingency*

Ruda's (2012) critique of Meillassoux is a subtle inversion of Meillassoux's own claims about contingency. Namely, that in Meillassoux's absolutization of contingency, he ushers in his own ontotheology by making this absolutization itself the necessary ineffable One. Ruda (2012: 67-68) pithily summarizes Meillassoux's project: "Everything is contingent. It is precisely the assumption of such an 'everything' that can be read as the marker of the problem... [With] this (implicit) move the speculative realist [Meillassoux] is

guilty of a one-sided, non-dialectical generalization of untotalizability.” This results in an entirely abstract conception of contingency. In the language of the above: contingency, for Meillassoux, is a cognitive abstraction; what is more, in the terms defined by Livingston regarding the Generic orientation, hyper-chaos becomes its own consistent metaphysical absolute that forms a background structure, an *Urgrund*.

Turning to Ayache and speculative finance directly, Ruda (2012: 74) remarks that, “for Ayache the market is as the world is for the speculative realist, i.e. not made of stable coordinates or states with which one can calculate.” Thus, crises cannot be predicted. They just happen. Since each new day, each new moment (i.e. each trade) is a “new state of the market-world” (Ayache 2010: xx) there is a perpetual opening for the radical event that is immanent to this market-world, as the differential potency that requires wholesale recalibration. For Ayache (2016: 205, 212), “the importance of thinking the recalibration of the derivative pricing model as a radically contingent event” is crucial for understanding how trades trade the entire world-market as “the non-total of possibilities that Meillassoux is talking about.”

In *The Medium of Contingency*, Ayache (2015: 50) elaborates on this: “If you wish to trade and engage dynamically in the market, you become dependent on all the prices of derivatives of all degrees of complexity – in another words, you become dependent on the total ‘state’ of the market, which can never be reduced to a total of states.” That is, the speculative financial realist trades not on the estimate of risk derived from the dissonance between present future and future present (i.e. the ontotheological correlation between thought and being), but rather *makes the market*, through the perpetual recalibration of the market, as an expression of radically contingent events. In Ayache’s (2016: 213) words: “Recalibration is acknowledging that the value of the derivative is a market price, which therefore introduces a new range of states of the world.”

Yet, despite the grandiose claims, there is a problematic political undercurrent that drives Ayache’s project. We might say that all his efforts to think the radically contingent event are contaminated by an unconscious *oikodicy* (Vogl 2015). Ayache’s own position presents itself as a rationality for how the market-world *really is*, and as such gives justification for how it *should* continue to be this way. And of course, who profits most from this market-world order? *Traders*. That is, market-makers like Ayache. This is because to write derivatives is to *poetically* bring forth the future. Market-makers are world-builders in his estimation. This is *homo faber* and the *will to architecture* infused into the *techné* of derivatives as technology of the future (Ayache 2010). Yet, as Ruda (2012: 76) observes, despite romantic claims about the trader’s work being poetic,

[The] outcome of the realist speculation is even more problematic than the outcome of the speculative realist's manoeuvres. Somehow the easily defended fortress is not even empty anymore; it seems to have become inhabited by investment bankers. Rendered differently, the realist speculator's position, i.e. defending that there is no reason whatsoever for why things are the way they are is nothing but apologetic of the state things are in right now. It is apologetic as only contingency is responsible. Thereby the realist speculator abolishes responsibility *tout court* and if ultimately the market can change at any instant for no reason whatsoever his position abolishes history.

Even more forcefully, not only are market-makers metaphysically absolved of responsibility by Ayache, but they are granted high status as those wielding capital-power – as the poetic writers of trades (Ayache 2010: 10-11). Derivatives prices are the *poetic* inference into the future, not as knowledge but as immersion “back in the market and in the exchange” (Ayache 2010: 21). As such, they are the constituent forces of how and why things are the way they are. There is a self-legitimation in Ayache’s poetic ontology of the market that carries with it political, social, and ethical subtleties that his own approach devalues, and that it more problematically represses.

While we hesitate to claim that Ayache’s overreach is inherent in the Generic orientation, we can acknowledge Ruda’s critique of Meillassoux that very well might extend to the Generic orientation as such. This is also similar to Livingston’s critique of Badiou (who was also Meillassoux’s mentor). Thus, to extend things further, we can look to Roffe, who levels further critiques against Ayache, and who exemplifies the P-C orientation directly with an eye towards elaborating a speculative theory of the market.

#### 4.4.3 *The Univocal Regime of Price*

For Roffe, Ayache’s self-congratulatory posture towards the trader covers over a serious problem. Ayache claims that only traders price. Algorithms don’t price, but at best merely apply models (Roffe 2015: 23). But, for Roffe, we need to ask 1) *what* can be priced? and 2) *who* can price? To the first question, he answers everything (Roffe: 2015: 30). To the second, humans and non (Roffe 2015: 33).

We can add a third question though, which starts to illuminate our own concerns about the logic of finance: namely, *how does pricing occur?* And to this question, we can answer – *through extensional quantification*. Thus, our first formulation for the logic of

finance is that 1) everything can be priced via a converting act of *inscription* (coding); 2) the agents who price do so via power relations (i.e. leverage, in Konings' terms) in their activity of *enclosure*; and 3) how this process takes place is according to the logic of *extensional quantification* via technics that constitute the actual conditions of experience. We need to keep this trio in mind as we begin to wind down: *inscription, enclosure, and extensional quantification* (IEQ).

Further, Ayache conflates price and value. For him, there is no such thing as value for the market. There is only price. Roffe, on the other hand, distinguishes between value and price. *Value* refers to qualitative determinations; it not about more or less, but concerns better or worse; it is pre-dispositional, in that values orient us in the world; and values bind together past and future (Roffe 2015: 26-27). *Price*, on the other hand, is purely quantitative; it is only concerned with higher or lower; and price is indifferent to the past and future. The market, therefore, as a regime of price, speaks of no qualitative determinations, nor does it predispose towards the future; the market is singularly concerned with the price movement of up and down. Roffe (2015: 34ff) refers to this as the *univocal regime of price*.

In this univocal regime, there needs to be a way to understand how prices are formed. While he disagrees with Ayache that it is only humans who write, Roffe is similarly concerned with *how* prices are written. For Roffe (2015: 40ff), to write a *price is a material act of inscription*. This act is functional, not representational, which means that it is creative, that it makes something happen. Although price can take on the form of value, which is what we see with Neoclassical marginalist conceptions of value that valorize the price mechanism in relation to the law of diminishing marginal utility, price *as such* is meaningless. This is opposed to the ideas of someone like Todd McGowan, for whom price covers contradiction (McGowan 2016). For the latter, price is secondary, whereas for Roffe, on the market, price is primary. Yet, despite this, it is a *meaningless* material inscription.

However, this meaningless material inscription, when strewn across the *topos* of the market, leads to the construction of a massive *archive of prices*, all of which are, in the first instance, meaningless signs. This archive becomes the unconscious of the world, in Roffe's (2015: 144) estimation. This is because prices are written and inscribed on the market, but they are later mis-recognized as values. As Freud speaks of the fabulating misrecognition of conscious remembrances, so too does Roffe think of the archive of prices that is the market (Roffe 2015). This is because prices are not merely extensionally quantitative, but they are *intensive quantities*. The issue is that this intensity is usually

always missed by the reductive translations of price into pure extensionally quantified language in the social sciences. In short, *intensity is perpetually obscured*. Now, we can add a fourth dimension to the IEQ trio: U, to stand in for the social unconscious.

This perpetual concealment is what it means to live in a social context. As we saw in Chapter One, for D-G, social production covers desiring-production. Similarly here, prices are always grasped in a social context, and social contexts by nature obscure intensity in itself. This is why what is required is a transcendental investigation into the genetic character of social value.

It is at this point that Roffe's P-C orientation is revealed. While he draws much from Meillassoux, it is Deleuze that gives his work its real content. This is because Roffe is committed to two axioms: 1) the axiom of inclusion (everything can be priced) and 2) the axiom of immanence. We have already discussed Deleuze quite extensively. What Roffe gives us is a material iteration of what a plane of immanence might be: *the market*. This is the case because the market is an absolute surface replete with intensive, empty signs spread across it. While we are not *prima facie* aware of the depths of intensive variation, all prices are priced together, which means that in every price the whole market is implicit. The result of this is that every price is unique and cannot be repeated. Market prices are all interrelated, and as such there is no distinction between what is on the surface and what is under, much like waves in the sea.

The result of all this, for Roffe, is that the market is the unconscious of capitalist social formation. And as we always misrecognize the content of the unconscious, we misrecognize price as value under determinate social conditions that impose value on top of price. This is because price is pure contingency, pure intensive process.

However, as we saw with Konings, Roffe also theorizes a scission at the heart of the market. For Konings, it's the plastic logic of value, whereas, for Roffe, it is *price*. And as scission, price ensures that values will never close up on themselves entirely, which creates conditions for novel encounters. This is the decoding flows of D-G that characterize capitalism. There are, of course, tendencies towards coding, as the logic of the despot insists, but this logic runs into its own limits with the market. Codes try to value prices. They endeavor to give meaning to something that is purely axiomatic, purely formal, purely syntactic. This is, Roffe claims, why the social sciences need psychoanalysis, even schizoanalysis. Because misrecognition is ubiquitous. And in order to understand the market, it is not adequate to examine the logic of that which is extended, or to speak in terms of social value.



The image we are presented with by Roffe is that of a totality. And, as with Ayache, this totality is characterized by contingency. This means that at one level the market is characterized by a principle of unreason. Prices are meaningless. As such, price movement is purely axiomatic. It is a decoding activity, in the sense of Deleuze and Guattari. Time, then, according to the market is not representable. It is the empty form of time, only guaranteeing that a happening will happen with the return of difference. Therefore, because of this, *writing replaces prediction*.

*Writing is the leveraging activity of those with capital-power*, who are capable of inscribing any possible entity with the meaningless sign of price. Because price is meaningless, this activity of inscription formally encloses the inscribed entity, which is now converted into an entity *for the trader*. Then, the trader goes to market with a formally enclosed entity that it can price through technological mechanisms that quantify the entity of concern. The rub, for Roffe, is that this process takes place through a misrecognition of the axiomatic nature of the univocal regime of price. As such, the market is given *evaluative status*. It takes on the status of orienting regime, and assumes the position as the social medium *par excellence*.

Where Roffe departs from Ayache is precisely that, for Ayache, the absolute of hyper-chaos takes on its own formal structure, as we saw with Ruda's critique of Meillassoux. From the perspective of the Generic orientation, what Ruda fails to notice is that the exception that is the absolute is so thoroughly un-grounded that it resists all efforts to formalize it, despite what might be seen as a high degree of abstraction. Despite that, Ruda's critique fits within the P-C orientation precisely because it recognizes the paradoxical nature of theorizing the absolute as such. To do so runs into the paradox of self-reference. But rather than disregard the One, it affirms the One, but a One that is internally inconsistent. This inconsistent One is Roffe's *univocal regime of price*.

What we are left with, at this point, is a seesaw between the Generic and the Paradoxico-Critical orientation. This productive tension, gives us an aperture beyond all tendencies towards Ontotheology and the Criteriological orientation. If Critical Finance has a future, it must be to investigate this tension further, while resisting the habit of social science to fall into either ontotheology or constructivist criteriology. This means affirming high theory, while continuing the familiarizing work of empirics. Perhaps Le Berge is right that social science needs to read more humanities. Regardless, we ought to perpetually become more familiar with the unfamiliar.

#### 4.4 Conclusion

This chapter can only open a pathway for future exploration of the Critical Finance literature. But the samples chosen are emblematic of debates concerning the field. And while we have been critical at times, all of the voices discussed offer much for us to continue to think through. Most importantly for the present project, these thinkers create a conceptual mosaic that reveals much about the temporal logic of finance. When considered alongside Keynes and Marx, what we glean from Critical Finance Studies is that we can take uncertainty seriously, while seeking to avoid metaphysical dogmatism; and we can also be proactive in seeking to meet the challenge that comes from capitalist social formation. Further, the Critical Finance literature provides countless resources for examining the technics of finance that materially instantiate financial temporality.

This leads us to our final task. By bringing together what we have gleaned in Part Two with what we first offered in Part One, our final chapter will be a short, speculative presentation of what we are calling the *techno-temporal logic of finance*. It can only be a sketch, but it will synthesize what we have engaged up until now, and will provide openings for areas for future research into each of the persuasions that we have engaged in Part Two, while also proposing a new paradigm by which we might begin to think according to finance.

## Chapter 5: The Techno-Temporal Logic of Finance

### 5.0 Introduction: What We Take from the Marxian, Keynesian, and Critical Finance Approaches

What we have kept in mind throughout all of our excursions has been that there is something fundamental about time and space that characterizes economic thought. And more, that our thinking about time and space in the economic domain has direct impact on socio-political thought. These habits of thought can be understood in relation to Deleuze's First Synthesis of Time: they are habitual contractions that form the present. In this way, it is common to speak of 'path-dependence'. As we saw with MacKenzie, path-dependence is tied to organizational routine and organizational structure. Sartre refers to this as *seriality*. It is that habitual tendency to sequentially engage in a field of determinate relations that dictate the limits and demands for thought, feeling, and action (Smidt 2019). This creates a condition of *collective bad faith*, wherein roles are established, identities fitted, and where the only relation to the future is that of *the possible*. When Jameson and Martin speak of financial capital's endless *presenting*, they are speaking in terms of the First Synthesis of Time; of habit; of the present; of seriality. For Sartre, seriality produces serial rationality and negative reciprocity. This is a self-reproducing system that further entrenches its own conditions of possibility through the expansion of its own image into any possible territory.

In Chapter Two, we engaged with one particular aperture, the Marxian, that illumines how it is that capital operates as such a totalizing tendency; namely, *through the construction of habit-conditions*. The fetish forms we identified are *habit-devices* that reproduce the image of the Whole through instantiations of itself and for-itself. In doing so, the Whole intensifies its own capacity by constructing a *topos* that sets the actual conditions for resources to be fetishized; that is, converted into capital.

At this point, the past becomes an issue for capital. But it is not a pure past. It is a specifically-coded past. It is the past of the fetish writ large. The resources that can be habitually fetishized present conditions for perpetual accumulation. Rather than primitive accumulation as an historical phenomenon, then, what we have is the *perpetual activity of primary accumulation* (Tomšič 2015). This activity is not sequential, but takes place with every 'moment' that is inscribed via the activity of the fetish device's act of enclosure.

Then, as a process of enveloping enveloped, the historical process sequentially constructs moments in this present-past fetishizing activity.

The future has value, from this perspective, in the form of *deferment*. It is due to the higher rationalization of finance that reveals what is most foundational to the temporal logic of capital, within a Marxian schema. That is, there is a promise of settlement at some point in the future, but what is offered is only perpetual deferment to other points in an amorphous 'not-yet'. This creates a pathological compulsion, tied to the demand for fidelity to those processes, which then further intensifies habitual conditions whereby past and future are constructed.

*Therefore, the Marxian approach gives us a unique aperture onto finance that starts from the present, from habit, which then reveals how past and future are reduced to the logic of habit in the form of what we have called 'extensional quantification'.*

This activity is characterized by the 'accelerative and integrative logic of finance'. While the resources within the Marxian schema may waver between 1) conservative desires for world-construction according to the logic of extensional quantification (i.e. productivism), and 2) the transgressive potential of virtuality that creates conditions for qualitative breaks from capital's self-reproduction (ex. post-Marxism), the biggest takeaway as we close is that *the Marxian schema opens up a way to think of finance as materially self-reproductive through the endless proliferation of fetishized technical devices that retain and project a self-same image that creates the conditions of social formation*. Understanding this aspect of the temporal logic of finance, as revealed by the Marxian aperture, enables us to better grasp the logic behind certain tendencies in neoliberal financialization that seek to make a World in its own image.

As we saw in Chapter Three, with Keynes, the focus from present, to past, and then to future shifts. Keynes' desire for the good society in the shadow of world wars and economic depression creates a system that *fetishizes the future* in the form of the uncertain, *from the prioritized standpoint of the present*. This form of the future is not the empty form of time we get with Deleuze's Third Synthesis of Time as the eternal return of difference. Keynes' future is a future *for probability*; for rational degrees of belief that will impact present decisions. Sartre refers to this way of thinking in terms of the construction of a future image (Smidt 2019). That is, for Sartre, sometimes future images are constructed merely for the purpose of affecting present action. In Keynesian terms, this takes place through the perpetual rational shifting of present expectations in relation to how the uncertain can be conceived. Shifting between positivist and Kantian tendencies, Keynesian thought turns the future into a problem for subjects; or, more properly, for

economic science and institutions to engage in the activity of model construction and policy making, which is both a science and art, for Keynes. The goal is the pursuit of ‘the good’: the future as the realization of the good, as understood from the vantage of the present. Again, we see the schema of ‘the possible’.

This prioritization of the future as uncertain from the vantage of the present has implications for the form the present takes. Since the present is concerned with expectations related to this uncertain horizon, the present is constructed in either numerical or non-numerical terms. The numerical creates present habits that formalize ways the future can be addressed. This is a serial process of formalization. It orients the investor in the present in ways conditioned by the process of formalization that creates the values by which present thought, feeling, and action will take place. And because this activity is understood in probabilistic terms, there is a mathematization of the investor orientation that becomes its own self-replicating serial tendency. *The result is the construction of a regime of technocratic management, through the frenetic desire to mitigate the consequences that uncertainty certainly carries with it. This Keynesian aperture reveals the technological dimension inherent in the logic of finance, as a system of technological management.*

The past takes on a very limited role in the Keynesian dynamic. It is, at best, an historical record that better informs the processes of technological management. At worst, the past is the active conditioning of liquidity fetishism. To hold liquidity, to hoard cash, is to preserve capacity. The held store of liquidity becomes a past condition that limits how the social power to address uncertainty can be expressed, in the first instance. This is why investment and the stimulation of power (through demand management) takes center stage, so as to adjust the societal gaze forward into “the dark forces of time and ignorance which envelop our future (Keynes 2015: 442).” *Thus, with Keynes, the temporal logic of finance is an abstract relation primarily between present and future.*

Chapter Four discussed how Critical Finance Studies takes the challenge of Marxian social formation and Keynesian uncertainty and constructs a temporal relation that is distinct from either Marxian or Keynesian paradigms. In the performativity and constructivist Critical Finance literature that we investigated, the temporal schematic inverts the Keynesian relation that proceeds from technological management in the present in relation to uncertain future, by internalizing the future through the rejection of the subject-object binary. With Esposito, the future becomes the Real of the present, in that the phenomenological horizon of the open future informs the present, in the first instance. The derivative becomes emblematic of this temporal logic. Implied volatility

becomes part of the constructive habit of financial operators in the present through pricing technologies such as BSM. *The result is that the mathematized conception of the future (in terms of implied volatility) as an algorithmic input shapes the form of the contractions of the present, so that each present moment of price-writing is informed by the inscriptive meaning given by serial processes of price-writing.* This is logic of how finance is an engine, not a camera. It is the moment-by-moment constructive forming of material reality through the activity of price-writing.

For Ayache, this is a poetic activity. What he means is that price-writing brings forth radical contingency, which is always excessive, or in Lee's terms 'leaky'. However, the leverage relations of those with capital-power – i.e. the power to price – carve determinate paths that delimit the expression of contingency through the habitual construction of striated paths. The value-decisions that orient price-writing, in the first instance, pre-determine the formalist operation of pricing, and thus overdetermine the entire meaning-making process associated with financial operations. Roffe shows, therefore, how finance must not be conceived merely in terms of abstract future-present relations, but must be understood as a complete temporal dynamic. This is because the market is a *medium of contingency* (that is, a space of present and future interrelations), *but also a price archive that requires an investigation into the social unconscious.*

Therefore, in this final chapter, to conclude this investigation, we will put forth a speculative proposal for how we can conceive of finance in terms that considers what we have learned from the Marxian, Keynesian, and Critical Finance/Speculative Finance apertures. From the Marxian, we must not remain ignorant of capital's desire to construct a world in its own image through the deployment of financial technics that have the converting power to put anything to work for capital. From the Keynesian, we must consider the ethical dimension of constructing a society from the perspective of finitude being confronted by infinitude. And from Critical and Speculative Finance, we endeavor to move beyond the adequacy of subject-object relations, while considering the full implications of finance as the engine of the market, which is a univocal price regime that operates through the material process of inscription (I), enclosure (E), extensional quantification (Q), and intensive variation/unconscious (U) – what we will simply call *IEQU*. In the end, we will have sketched the outlines for a future field of study that considers time in its robust synthetic dimensions.

Towards that end, **Section 5.1** opens the chapter by discussing technics and time in the work of Bernard Stiegler. This section provides *the theoretical grounds* for the material basis of techno-temporality, so that the latter is not viewed in terms that can be

disregarded for being ethereal or intangible or overly metaphysical. We focus on the broad strokes of his project in *Technics and Time*, distilling his conception of both technics and time in such a way that we can use them as concrete, raw material with which to hitch our concerns from Part One and our insights from Part Two. Then in **Section 5.2** we offer *7 theses for a techno-temporal logic of finance*. These theses are the culmination of the project up to this point. They are speculative and as such can only serve as guideposts for further investigations, as we are not concerned with building a system, but with setting an orientation for future investigations into political economy to be able to begin to think according to finance.

## 5.1 Techno-Temporality: A Speculative Proposal

### 5.1.1 Stiegler: *Technics*

Bernard Stiegler (1998) begins *Technics and Time* by resuscitating the value of technics for thought. *Techné* has historically been resigned to the position of Sophistry by the philosophical decision that elevates *episteme*. Technics was seen to be a rhetorical instrument wielded by those with concern for power, while *episteme* was true knowledge. The material turn in Marx reverses this supposition, and prioritizes *techné* by constructing a “theory of the evolution of technics” (Stiegler 1998: 2). It is no coincidence that both Marx and Stiegler refer to the Promethean Myth to buttress their respective projects. This myth speaks of the power of humanity being taken from the domain of the gods in an inversion of the relation between finitude and infinitude. No longer is the beyond out of reach. With this technical revolution, the instrumentality of material processes inbreaks into the immanent domain and shifts how the very nature of history, society, humanity, culture, politics, economics, etc. can be conceived.

However, the initial phase of the technical revolution produced a conception of the technical that was straddled between the mechanical and biological. The technical became synonymous with mathematical thought (Husserl), calculation (Galileo), *ratio* (Heidegger) *et al.* It was characterized by forgetting, the forgetting of Being. Heidegger (1969) refers to this forgetting as the *challenge of technology*.

The present age, for Heidegger, is the age of technology, the atomic age, the age where everything is calculable. And while this age compels humanity and Being to construct an ethics according to this logic, the challenge comes in the form of an attestation to something more-than: the claim of Being from within this technological

regime. A reclamation of the claim of Being, however, must sift through the field of modern technics that construct a world that is the completion of metaphysics (Heidegger 1969). In the terms of this project, we can speak of such completion as the absolute desire of the logic of finance to convert everything into that which can be extensionally quantified. And the claim of Being is that desire to find an ethical ground that is not already pre-coded by the logic of forgetting.

This brings us back to a concern with the *event*. For Heidegger, it is the presenting of *Ereignis* itself (Heidegger 1969; 2008; Stiegler 1998: 8). This evental showing is a disclosing of that which has been forced to recede into the distance, which has been given the status of 'unimportant', in the name of technological mastery. What matters here is that it is precisely via the challenge of technology that the conditions for the event are presented.

Stiegler takes this to mean that there is something in the 'essence' of technics that is underdeveloped. Namely, that technics cannot be understood in purely instrumental terms, as the reduction of quality to quantity in a simple abstract sense. Technics has a poetic sense as well, a sense in which it brings things into being, reveals things. There is an artistry to technics that is integrally characteristic of *techné* as such (Stiegler 1998: 9). But this artistry is not productive. That is, it is not a manufacturing. The artistry of technics is a pulling open of the tendency towards full enclosure by technical mastery, through a tear in the fabric that calls forth to that which is being concealed, suppressed, hidden. Thus, despite the desire of modern technics to foreclose everything through its concealing violence, the challenge of technology reveals the impossibility of final closure.

The Marxist take on this considers how it is that technics can be used for either good or ill (Stiegler 1998: 10ff). According to the logic of capital, the tendency of capitalist technics is towards further and further 'forgetting'. The most extreme example of such theorizing is exemplified in Marcuse's (2002) *One-Dimensional Man*, where capitalist social formation is rationalized according to a technical regime that self-legitimizes through a technoscientific rationality constructed in the image of the technical laws of capital. From this perspective, finance is a rational mechanism of technoscientific political domination. Marcuse's concern is taken up by Habermas, who proposes a form of communicative rationality that would liberate communication *from* technicization (Stiegler 1998: 12); while, for Marcuse (1969), there would need to be a reclamation of the 'biological root' that would resist domination as a second-order operation.

What is common in these approaches is a *fetishization of the non-technicized*, that domain of rationality that is 'forgotten' and needs to be unconcealed. It is hard not to



sense a 'Fall' narrative in these formulations, Heidegger included, where there has been a supposed distortion of something pure that if it were only allowed to express itself freely, then it would avoid exogenous domination.

This Fall is not exclusive to Marx-inspired or Existential tendencies, however, as Konings' (2018) project shows. Within the Keynesian lineage there is a similar sense in which 'speculation' is viewed as a technical endeavor that is used to exceed a rational foundation in its ascension towards the unknown. It is almost as though the unknown ought to remain blocked off, with finance seeking to take humans into the domain of the gods that is simply meant to be shut off from access as a consequence of finitude. This is what we noticed in Chapter Four as the conceptual slide from uncertainty to technocratic dogmatism; for, only those with *gnosis* are enabled to engage in the fraught activity of tending to the uncertainties of the future.

For Stiegler, these tendencies are the fault of a one-sidedness with regard to understanding *techné*. In his estimation, what needs to be affirmed is an *originary technicity*. This original technicity is not reducible to mechanics, or biology, or anthropology. It assumes a third position beyond inorganic and organic. The *technical object* is his name for this entity that is not ontologically either subject or object, neither vital nor inert, neither dynamic nor static. He refers to them as "inorganic organized beings" (Stiegler 1998: 17). And these technical objects are originally constitutive of temporality and spatiality, insofar as time and space are 'derivative decompositions of speed', where 'speed' carries connotations of deterritorialization and technical evolution that is replete with 'events' in the sense of *Ereignis*, but even moreso in the sense provided by Deleuze, for whom the event is shorn of its romanticization of a forgotten notion of Being (Stiegler 1998: 16-18).

It is at this point that time becomes of central importance in conceiving of a new consideration of *technicity*. This is because technicity must not be understood in its instrumental terms alone, but must reveal the relationship between technics and time.

### 5.1.2 Stiegler: Time

The instrumental conception of technics is faulted for driving a forgetting of the temporality of time, as time is reduced to the logic of technoscientific rationality that operates via the logic of the one, or the unit. It erects a discrete ontology that spatializes temporality by demarcating contiguous relations in a phase space that is always-already subject to the rule of possible calculability. This rule, then, becomes the prism through which possible experience emerges, which means that there is an activity of pre-

inscription, or coding, that takes up material within pre-established parameters that only further serve the technocratic logic.

Innovation further obscures the temporality of time through erecting a conception of progress that bewitches rationality by determining the form of temporality according to the logic of this technoscientific field of self-replication. It seems that time is happening, but this sense of time, as the measurement of movement within the technoscientific regime, is one-sided. Schumpeter is the great economic voice that prioritizes this inherent value of innovation as the driver of economic history and capitalist society. Insofar as innovations are “carrying out new combinations” of products, quality care, production development methods, sales market strategies, and corporate/firm and industry organization, capitalism’s dynamism will make the “wheels of the new go” (Schumpeter 1934). This has led to varieties of interpretations, from evolutionary economics, to new growth theory (Nelson and Winter 1985; Metcalfe 1998; Aghion and Howitt 1997). Yet, through them all, the consistent feature is that temporality is only conceived in terms dictated by the one-sided technical logic of extensional quantification.

In Stiegler’s mind, there is a desire for ‘permanent innovation’ that defines this modern logic of technics. The result is a split in time, with the time of innovation leaping ahead of thought, dragging all possible thinking with it in the form of innovation-as-temporalization. The machine-like quality of such thinking creates a pace by which temporality itself is conceived. It is then internalized, and erected to the metaphysical status as Time: the Time of technics.

What is required to contest this metaphysical conception is a break, an event, a shock (Stiegler 1998: 15). Stiegler speaks in terms of ‘speed’. Yet, this speed is not to be understood in *extensional* terms, but *intensional*. This is the speed of *intensive quantity*. Simon Glezos notes how the speed of *extension* is the liberal conception of speed tied to a technoscientific rationality. It only thinks of speed in terms of the fetishized conception of accumulation (Glezos 2012: 13). But, for Glezos, speed also carries the sense of break and scission. As there are speeds that characterize innovation and the logic of extensional quantification, there are also specific speeds, or unique ontological speeds, that are exemplified by different assemblages, those that are not already subjected to technoscientific rationality.

The key to understanding different ontological speeds lies in the essence of the technical object. These objects are not *simply* hybrids of animate and inanimate; Stiegler (1998: 49) is clear that “none of the terms of the relation hold the secret to the other.” Yet, the technical object is *both* animate and inanimate. To suppose that a technical object

were an object organized by an active agent is to conceive the technical object in Aristotelean hylomorphic terms. This is not Stiegler's point. Rather, for him, matter is organized *technomorphologically* "down through time, by selecting forms in a relation of the human living being to the matter it organizes and by which it organizes itself" (Stiegler 1998: 49). Sartre refers to this as a 'transubstantiation', where there is a *chassé-croisé* of praxis and matter (Smidt 2019). We can also think in dialectical terms as a 'dance of the dialectic', as Ollman has elaborated, where there is a co-constitutive *internal relation* among terms (Ollman 2015). Thus, what we are offered, here, is a theory of 'prosthesis' that is both zoological and more-than zoological.

The trap is that we might fetishize the future in a march towards optimization or perfection (Stiegler 1998: 54-55). Stiegler sees this tendency in Heidegger, Gille, and Leroi-Gourhan *et al.* There is a conception of 'negentropy' that characterizes this march into the future, one that sees in its ability to innovate a capacity to perpetually sustain its own motion (Taleb 2014). This tips the scale towards the side of the animate in the internal relations of the technical object. But the object is not a tool merely for human use. The technical object is a *concretization of processes*. This means that it is a *habit*, contracted (i.e. concretized) by "the integration of its functions through overdetermination" (Stiegler 1998: 69). Such an activity is a synthetic process, in the terms we discussed in Chapter One pertaining the Three Syntheses of Time. This does not mean we cannot speak of the technical object in its functioning. We can, but only insofar as we bear in mind that function pertains to an object's *as if* existing, revealing processes and material activities that are constitutive of its functionality. And these constitutive processes and material activities are those of both animate and inanimate processes of *chassé-croisé*, all the way down.

Endogenous to this *chassé-croisé* of the technical object is an inherent *dissonance*. This dissonance is the space of fission that creates openings for true *invention*. As the process is never complete, the technical object and its relations across a field of technical objects creates a field of limitless pluralities for the functionings of technical objects. This is an evental field, a field wherein state changes occur through processes of quasi self-invention. Keeping in mind that we have avoided fetishizing the animate, we must also resist fetishizing the inanimate that would see this process as mere mechanicism. There is a purposiveness, but one that is non-teleological, non-linear, and non-deterministic.

This evental field is not simply a chaotic field of really creative inventiveness that is merely misrecognized as such (some sort of antinomic covering). For Stiegler, the inventiveness is a material process, and so is its concealment. He speaks of tendencies

when “an economic system artificially attenuates the weakness of a technical system by protectionist measures” and so conceals the dissonance (Stiegler 1998: 77). This concealing ironically conceals inventiveness and innovation in the name of economic progress or ‘innovation’ (in Schumpeter’s sense). In this sense, protectionism is a type of diminishing of the technical drive towards concretization.

But how to understand this drive in its purposiveness? For Stiegler, it is an *anticipation*; but not the anticipation of an agent using the tool for the human’s end. Rather, this anticipation already “*supposes the technical object*” (Stiegler 1998: 81). This is because the form of the anticipation itself is derived from the habits of the field of technical objects.

Anticipation is, therefore, to be understood as a type of thrownness, an orientation. But, for Stiegler, this anticipation is *systemic*, not psychological. This is because the field of technical objects make up a technical system that itself is full of cross resonance and internal penetration between animate and inanimate processes such that the anticipation must be understood in relation to the mereological relations that make up the field as a type of network. We can think of this system in terms of its local processes, but also scaling up we can understand how the system itself has purposiveness, tending toward concretization (i.e. actualization).

From the perspective of this purposiveness, we can think of the future in terms of an aim or goal. Thus, technics must be considered as posing the very question of time itself, as it constructs a form of time and reveals a problematic of temporality that must be explored further if we are to understand any potential logic of time. This is because modern technics fulfills the metaphysical project in the name of a naturalization, a naturalization that presumes a form of time but that in this very presumption reveals how this form of time is ‘leaky’ (Lee 2018).

For Heidegger, this tendency towards naturalization is a degradation, of sweeping the human away. For Marxian thought, it is the process of dissolving all that is solid. In Weberian terms, we might see this technical concretization as an enhanced process of disenchantment. However, in the terms provided by Konings, any conception that is figured around such lines is foundationalist. These conceptions, as rampant as they are, suppose that *techné* is distinct from *anthropos*; *techné* is only given an instrumental role. From this perspective, finance as *techné* can only ever serve humanity or subject humanity.

Such a forced binary is necessarily tied to what Negarestani (2014: 427) calls a “theological jurisdiction.” The version where finance serves humanity gives a venerable

status to the human that has been imported from the theological conception of the human as uniquely significant. The reading where finance subjects humanity is theological in the sense of the Fall, where the veneration of the human is longed-for in its absence.

However, what Stiegler offers is a conception of *techné* that contests the very nature of the human itself, such that there is no originary opposition between *techné* and *anthropos*. In order to do so, we must not think of the human in presentist terms. That is, the theological jurisdiction begins by accepting the human as it is, as something knowable as human in the present. All such considerations about the future derive from this conception and suppose that this present can be modified in the pursuit of some aim. But, as Deleuze (2006:163), says “the overman is defined by a new way of feeling: he is a different subject from man, something other than the human type. *A new way of thinking.*” In order to accomplish a new way of thinking, however, there must be a different conception of the very origin of the human itself. This means that reductions of the human as thinking, or speaking, or social, or political, must be seen in their limited capacities as fabricated images, intended to project an aspiration derived from a starting point that assumes a present status of what the human *is*. Therefore, we must learn to think prior to creation, prior to the presence of the present.

This is where Stiegler turns to Derrida’s conception of *différance* to elaborate a prior way of considering origin. The dual status of deferral and differentiation implies a temporalization of space (into the future) and a spacing of time (contiguity). But more importantly, *différance* signals the impossibility of a *who* or *what* as origin (Stiegler 1998: 141). This is because *différance* precedes time and space, conditioning their co-possibility in the first instance. Therefore, what appears from this preceding condition of possibility is the exteriorization of a techno-logic from which all determinate repetition occurs. In Deleuzian terms, this is the actualization of the virtual. And in the temporal terms elaborated in Chapter One, this is the time of the First Synthesis, habit.

Therefore, for Stiegler, the contraction of habit as present is a synthesis of technical processes of appearing out from *différance* as prior to origin. What results is that the *who* and *what* of *anthropos* and tool invent each other in their co-emergence. This does not mean they are identical. Rather, it implies that human emergence is synthetically tied to its actualization as equiprimordial with the *techné* whose emergence is also synthetically actualized with that which would come to be human (Stiegler 1998: 175).

But such an indeterminate condition of co-possibility leaves us with indecision and indeterminacy. As the condition of co-possible time and space, such a rupture has

ontological status as the inventiveness of invention within the techno-logic of a system. Yet, *différance* itself is only understood as an undoing of the modern technical desire for determination. There is no anticipation with *différance* as such. However, in the appearing of time and space, of human and *techné*, of the who and what, determination becomes operable through the desire to establish (Stiegler 1998: 222). This is the *will to architecture* of which Karatani speaks that we have previously discussed. It functions through an anticipatory orientation that begins from the contracted habit of the present and that becomes self-aware through the discrete ontology of the unit, which brings together determinations through the calculative act of eliminating *différance*. For Stiegler, this is what all calculating anticipation amounts to: *synchronization through expectation*. Thus, determination, as an activity of gathering together, is necessarily tied to the technogenesis of temporality as anticipation: “time is essentially deferred time” (Stiegler 1998: 231). Therefore, this conception of temporality as anticipatory means that, under a regime of calculation, time is essentially a functional operation of determination according to expectation.

But unlike those Fall narratives that see determination as a foreclosure of the fetishized indeterminate (or similarly of a Fall from quality to quantity), for Stiegler, the calculation of time is not a falling away from ‘primordial time’. This is because of the status of *différance*, that *insists* in the letter, in the writing, in determination. This is similar to what Malik (2014) and Ayache (2010) seek to preserve in their elaborations of the writing of the derivative and contingency. That is, the quantitative is not *tout court* a closure of dissonance. In fact, *techné* as such must not be viewed in derogatory terms derived from a theo-logic; not in the name of some scientific fetish of the tool in the hand of the user towards the aims of the active agent, but in full recognition that the mark or the act of inscription (i.e. the activity of pricing) is never an activity of mere enclosure, but of *both* naming and forgetting, of *both* determination and indetermination, of *both* extension and intension.

This means that *pricing* is not merely a concealing, but also an activity of *unconcealing*. The act of inscription is not active in its determinate tendencies (i.e. the passive synthesis of habit), although this is what we typically confront: the actuality of the price as written mark. The mark itself, as a meaningless axiomatic sign, is *equally* an opening of the intensive as active expression. While it may appear that pricing takes place through mere serial path-dependent patterns, this is to neglect the operative virtual potencies that actively condition pricing. Thus, pricing has a techno-logic, in Stiegler’s sense, that in its determinate activities indeterminacies are expressed and concealed.

Ayache (2010) refers to this as *trading the whole market with each trade*. That is, at every singular point in the system, the whole is both repressed and felt, to varying degrees. And like every repression, that which is hidden is never dormant. Thus, at the level of the actual, or according to the First Synthesis of Time (i.e. habit), there is a serial repetition that occurs at the level of identity. But this tendency is not active. It is the passive synthesis of habit and contraction, of determination and serial reproduction.

However, there is a virtual potency that actively conditions the pricing activity in its actualization that still needs to be understood. Speculatively, it relates to the pure past (Second Synthesis of Time) and the eternal return of difference (Third Synthesis of Time). In *Technics and Time*, Stiegler gives us a conception of technics that is divorced from the sequence of 'nows' that Heidegger (2008) diagnoses in *Being and Time*. However, he leaves his readers only with a prompt about the need for a "politics of memory" that would be a "thinking of technics" such that the originary de-fault of origin would drive meditative reflection (Stiegler 1998: 276).

While *Technics and Time* is a highly theoretical work, in the end, what Stiegler leaves us with is *material* for thinking between binaries: human versus non-human, interior versus exterior, time versus space, *techné* versus *episteme*, *et al.* The reason this work is valuable in the present context is that he provides a *material apparatus for thinking of financial technologies* that relate to the speculative conceptions of time and *techné* elaborated in Part One. However, it is isn't until his explicit work on economics that his theoretical musings on technics and time take on a form that truly gives us material that we can use to consider how to think of the techno-temporal logic of finance.

### 5.1.3 Stiegler: Mnemotechnical devices

In *For a New Critique of Political Economy*, Stiegler (2010) lays the framework for a *prolegomena to any future investment scheme*. Decrying the short-termism of Keynesian demand management (in both stimulating consumer demand or investment demand), Stiegler (2010: 6) argues that what is needed is a new type of investment strategy focused on the long-term goal of *philia*, or common desire. To invest in common desire means to have knowledge for what a new industrial politics requires.

Towards this end, he invokes his conception of mnemotechnics, which he first devised in *Technics and Time*. Mnemotechnics "always constitutes a *spatialization of the time of consciousness beyond consciousness* and, therefore, constitutes an unconsciousness, if not *the unconscious*" (Stiegler 2010: 8). This takes place through processes of *retention*. Retention is an activity whereby political economic functions

(conception, production, consumption) are ‘grammatized’ (written) and then “incorporated into an apparatus devoted to the production of tertiary retentions controlled by retensional systems.” In short, political economy operates as a system of contraction (First Synthesis) and memory (Second Synthesis).

At this point, we need to keep in mind the work of Roffe (2015), for whom the market, as the univocal regime of price, is the archive and unconscious of capitalist society. We also can now bring Bergson and Deleuze back and think about the spatialization of time in a technical regime that forms the social unconscious. Which means that the *first* thing we need to understand about mnemotechnics is that they concretize the pure past in extensional terms (Second Synthesis of Time – pure past). The *second* thing to consider is that mnemotechnics also preserve the intensive character of the market as unconscious (Third Synthesis of Time – eternal return of difference, or the guarantee of the death of identity). And the *third* thing we need to bear in mind is that mnemotechnics perform these two operations through retention – *inscription* (The First Synthesis of Time – habit).

Thus, every inscriptive act of economy (i.e. the meaning of price) is a retentional activity expressing the unconscious (i.e. the market as archive of prices) through extensional signs (i.e. the meaningless syntax of price). What we have then is a way to conceive of the Three Syntheses of Time as pertaining to:

- 1) Habit = the meaning of price passively inscribed through the habit of writing (value and extensional quantification – value translated into price),
- 2) Pure Past = the archive of society (in extensional terms), and
- 3) Eternal Return = the virtual guarantee of unconscious intensive variation (intensional quantification).

According to Stiegler (2010: 29), this process of memory and inscription is due to the expansion of mnemotechnical devices through the spread of “industrial hypomnesic apparatuses [which cause] our memories to pass into machines.” From the simple example of us no longer memorizing phone numbers, to more complex forms of corporate bookkeeping, retention operates through *exteriorizing knowledge*.

However, unlike the Platonic notion that this exteriorization (*hypomnesis*) is opposed to an interior knowledge (*anamnesis*), Stiegler (2010: 29) follows Derrida from *Of Grammatology*, who deconstructs this opposition and opens the “*pharmacological question*, according to which the hypomnesic is a *pharmakon*.” Digital networks open the pharmacological question in that our impotence and obsolescence are displayed at the exact time as the “mnesic power” of the immensity of human memory is exemplified. For



Stiegler (2010: 31), this produces a “noopolitical industrial economy of memory,” where cognitive and cultural industries increasingly exert control over cognitive and affective flows. This produces an era of hyper-control, replete with psycho- and neuro-power serving as a more “subtle and severe form of operational control than biopower” (Erkan 2019: 52).

Drawing from *Anti-Oedipus*, Stiegler further remarks that mnemotechnics create a memory for humanity that goes beyond mere language, but that literally *inscribes bodies*. This process of grammatization ‘invests bodies’ because mnemotechnical inscription has always pertained to debt. As D-G (1983: 185) note,

The alliance debt answers to what Nietzsche described as humanity's prehistoric labor: the use of the cruelist mnemotechnics, in naked flesh, to impose a memory of words founded on the ancient biocosmic memory. That is why it is so important to see debt as a direct consequence of the primitive inscription process, instead of making it – and the inscriptions themselves – into an indirect means of universal exchange.

The point for D-G is that *mnemotechnics as a process of writing has always been a process of debt*. Thus, the process of inscription that we are concerned with is necessarily tied to memory as a type of debt. This is because grammatization is the history of exteriorizing memory (and knowledge), in all its forms.

To write is to inscribe. To inscribe is to exteriorize memory. To exteriorize memory is to mark a point at which memory (and debts) can be revealed.

Stiegler refers to this process of grammatization as *proletarianization*. But more than the working class, *anyone who produces knowledge is subject to grammatization*. This means that the entire process of meaning-making society-wide is subject to the noopolitical hyper-control economy of grammatization. While Stiegler does speak in terms of ‘harnessing’ libidinal energy, it might be better to speak in terms of coding, in the sense discussed in Chapter One. That is, we can see Stiegler taking up D-G’s project of desiring-production and marrying it to his own investigation into technics.

However, where Stiegler still uses language that, at times, veers into degradation theory, for us, it is better to speak in terms alongside Byung-Chul Han (2017b), for whom psycho-politics is *pure positivity*. That is, there is no negation in control. While Stiegler uses the French ‘*captation*’ to speak of the harnessing of libidinal energy, he refers to this as a destroying of *savoir-vivre* and *savoir-faire*. It is not that there is no sense in which

such *captation* carries connotation of a degradation, but rather than rush to the moral claim, our concern here is first to understand the ontological processes. To rush to castigate the process of capture or harnessing is to already front-load the analysis and rush to confirm a normative position. This is to make analysis serve the philosophical decision. As best we can, we want to hold off from presuming that the expansion of mnemotechnical devices is necessarily and ontologically a process of degradation. This will allow potentials to be revealed that might otherwise be swept away in a rush to make one-sided claims.

With that, what is most interesting is that *meaning-making is put to work through mnemotechnical devices*. Meaning-making is not ontologically opposed to technics, as it would be in the Platonic opposition between *episteme* and *techné*. Meaning-making is, for lack of a better phrasing, technical. Meaning-as-technical is the concretization of libidinal energy, or in the terms of Chapter One, of desiring production. Meaning-as-technical is constitutive of social formation. When Roffe (2015) speaks of value (distinct from price) as being orienting, this is because value is a form of meaning-making. Value is a way of cognizing something as meaningful and placing transcendental coordinates that make up a given context (or world) (Prozorov 2014). And this takes place, temporally, according to the First Synthesis of Time, habit, such that *social formation is a process of habitual meaning-making through the activity of coding*.

Since meaning-making is not restricted to a singular class, but is economy-wide, this means that *mnemotechnics involve everyone*, to varying degrees of intensity. In the abstract sense and according to the First Synthesis of Time, this means that everyone thinks mnemotechnically, or according to *ratio* and the logic of calculability. This is what creates the serial conditions for societal reproduction according to the image of capital. With the First Synthesis of Time, habit is what takes hold of the process of social formation. Life appears as pre-determined. Roles are established. Patterns settle. Power structures take form. Subject positions rigidify. In the extreme, we have what Sartre calls *Infinite Seriality*, where only the institution, and its sovereign logic are essential, with the component parts merely serving the grand Logic of the institution (Smidt 2019). This is a closed totality where the mereological relations between part and whole serve to function a whole that is distinct from the parts, while the parts derive their status only under the dominant Logic of that whole.

This habitual process is reinforced through the operations of *accounting*, what Stiegler identifies as *neg-otium* (Stiegler 2010: 54). Neg-otium is the negation of intermittent expressions of *différance* revealing themselves through mnemotechnical

expansion. Negotium is the passive activity of serial determination that does not think (in the Deleuzian sense) but that operates as The Dogmatic and Moral Image of Thought. It is the canonization of organizational strategies and structures that MacKenzie (2006; 2011) analyzes.

A regime of negotium is a system of daily micro-habits that operates through habit as an internalization of externalized inscriptions. This is the reinforcement of meaning-patterns, or of value forms. With Ascher (2016), we can think of these habits in terms of establishing the means of prediction. Or with Adkins, Cooper, and Konings (2020), we see these habits in the form of the construction of asset relations driven by leverage patterns. And tied to Malik (2014), it is capital-power and the power over pricing that operates as the institutional expression of such habit. *The point is that the First Synthesis of Time is not an abstract process divorced from material operations. It is how to understand material relations, in technical terms, through a metaphysical grounding of a material orientation to the functionings of political economy.*

But habit is not merely retentional. There is also a process of *protension*, or production. This is the *externalization* of the internalization of mnemotechnical processes of grammatization. Protension is the productive process that appears to be creation (in habit), but that merely exemplifies how seriality proliferates. It is how calculability performatively constructs markets. Since meaning-making orients subjects and institutions within a milieu, anticipation emerges. This habitual anticipation is not true thought, but operates via the logic of identity and The Dogmatic and Moral Image, which thus institutes certain forms of belief.

Liquidity, serving as the possibility to meet obligations, operates as an anticipatory belief within this habitual process of protension. To speak of liquidity from the angle of the First Synthesis, is to see liquidity as serving a serial function. This is because liquidity is not *in* an asset. Liquidity speaks of the *capacity of an asset to perform a function within a time-scale*, such that speed becomes a crucial determinant. The more liquid an entity is, the more easily convertible it is. Lozano (2015: 20) notes how “it is in every case *the transaction, or the exchange (of the asset for its image of value) itself which has liquidity*, not the asset, market, or to-be-(re)funded-individual, per se: *it is the act or operation of the exchange which has liquidity.*” To suppose it is the asset that is liquid is to fetishize the asset, and not to recognize its *as if* existing character. What Lozano reveals, however, are the constitutive activities that abstractly form the function of any given asset vis-a-vis liquidity.

Speed here, from the aperture of the First Synthesis, is *extensional speed*. It is the perpetual motion machine that typically characterizes how we think of faster and slower, as measured in clock time. This is necessary for the functioning of the economy because of how habit structures the tendencies of financial operations. This is also why Deleuze and Guattari refer to capitalism as being creative but within a relative limit. It is here, with an eye to habit, that capitalism's creative capacity is only understood in delimited terms. Because of its protensional, serial quality, capitalist social formation can only produce and reproduce. It can only 'innovate' but *never truly invent*.

*Thus, from the perspective of the First Synthesis, we can think of financial technics as being serial mnemotechnical devices that grammatize meaning through inscriptive practices that habitually reproduce the conditions for further grammatization to take place.*

From this perspective, derivatives, for example, have the status as a type of money, that operate as value-laden technics that orient financial operations (Bryan and Rafferty 2006). In so doing, they set the conditions by which thought, feeling, and action can proceed, through a given economic world, at the behest of those with capital-power, through leverage, while overdetermining the transcendental coordinates for organizational strategy and structure, subjective constitution, policy, and the like. In short, derivatives operate both retensionally and protensionally.

But as with the speculative logic of the syntheses of time in Chapter One, The First Synthesis of Time cannot be understood alone. The Second Synthesis of Time, the pure past, is crucial for understanding how the conditions of retention and protension draw from memory and stored meaning.

Pure past is not psychological memory, but is *technical*. That is, the market is a mnemotechnical field (and field within fields *ad infinitum*), where meaning-making is inscribed. If habit is the serial contraction of technical presents, the pure past is concerned with the virtual field of potency from which contraction draws its resources. This means that what is expressed in the present as habit is the contraction of virtual difference as extensionally quantified. Remember that, for Deleuze, the pure past is virtual potency. However, in technical terms, this pure past is never purely a metaphysical supposition, but is given material status as the persistence of the entire past as stored in mnemotechnical terms. This requires the pure past be conceived, here, as taking on extensional form. This extensional form is not a degradation of a some pure conception of 'the virtual' that is opposed to 'the actual'. Rather, the paradoxical relation between virtual and actual is characteristic of the pure past in mnemotechnical terms. What this results in

is the pure past as mnemotechnical field that carries an ever-present synthetic disjunction within it. This means that there is both rupture and inscription.

How this occurs is helpfully discussed by Ayache (2010: 365ff), for whom the pure past is debt. In this reading, debt is the excess that is not contracted in habit, but that is ever-present in conditioning the forms of habit. This is because the past is present with and constitutive of the present, habit. The synthetic processes of organizational strategy that operate via capital-power over pricing would have no resources from which to draw if they did not express the pure past in each 'moment'. In fact, moments are constructed by this activity. This is why the First and Second Syntheses give us static identities, concepts, and abstractions. Calculating price is, therefore, an activity that requires the mnemotechnical processes of both habit and pure past. *Pure past, then, carries meaning that is selected by the passive synthetic process driven by capital-power's leveraged serial expansion.*

Ontologically, there is a selection of which ways the pure past (i.e. virtual meanings) will be contracted in habit. The short termism that Stiegler bemoans, the investment decisions that Larry Summers discusses as being paramount to societal development, these are instances of the selection procedures that take place according to the First and Second Syntheses of time. This is because there are organizational habits, subjective decision processes, calculative methods, institutional pressures, cultural values and more that all come into play with every investment decision. And these cannot be understood outside of understanding how the pure past conditions their emergence, and how habit is the serial process of their reproduction.

In financial terms, debt is the name for obligations that are as-yet unsettled. To pay a debt implies a pacification of these obligations so that they no longer exert a requirement (Douglas 2016). However, as we saw in Chapter Three, there is a modal logic that we can admit into discussions pertaining to debt relations. This means that 'paying' is never an activity of final closure, but is a process of navigating obligations. This does not mean that debts cannot ever be paid back at the level of habit. In fact, it is precisely the case that the First Synthesis of Time requires that debts be paid in serial relations that exert specific demands, within specific parameters, so that balance can be maintained (even if only as illusion). This is because grammatization-as-habit is characterized by identity and the process of discretization. What is more, the pure past of mnemotechnics also tends towards determination in its actualization in habit. This means that debt structures the relations of habit, by placing creditor and debtor in their relations of obligation, in the first instance.

However, the virtual aspect of the pure past precludes final payment (i.e. peace) from ever being achieved (Graeber 2013). This is because while particular debts can be paid in extensional terms, there is always an excess that is never fully expressed in habit and that is therefore never able to be resolved. This is due to the infinite field of meaning that is the pure past, that attests to the fact that an individual debt (as expressed via habit) is only a selection of intensive variation. But this intensity is never fully subsided, or abstracted away. It is always-ever insistent in the extensionally quantified mnemotechnical inscription; yet, as Roffe reminds us, it is not remembered as such. Which means that *the actual value of the debt is a fundamental misrecognition of the virtual potency of the pure past of virtual meanings.*

This past of meanings makes it clear why debt and sin are closely aligned. The obligation is not a meaningless one (even if there is a formal sense in which debt-as-price is purely syntactic), but one that is always translated (i.e. actualized) into value-laden terms in habit. And when we add to this that habit also carries with it serial processes of capital-power and leverage relations, then the introduction of power asymmetries and subjective constitution starts to reveal how debt relations come to take on the form of societal obligation.

The Dogmatic and Moral Image can now be understood in mnemotechnical terms, since this serial form of thought necessarily pertains to both habit and pure past, which include all the connotations of institutional tendency, capital-power, leverage, subject positions, and debtor-creditor relations. The Dogmatic and Moral Image is not simply a theory of knowledge pertaining to representation in conceptual terms (though, of course, it is). *It is more importantly a material concept that reveals how it is that forms of matter as identities structure thought, feeling, and action as serial processes of habit contracting the past.*

But the First and Second Syntheses themselves do not give us an adequate conception of temporality that is useful for thinking the temporality of finance. This is why the *Third Synthesis of Time* is crucial at this point.

Eternal return is the guarantee of the death of identity. This is not a sequential conception of the future, but is the ontological, speculative facticity of difference-in-itself rupturing all serial tendencies that emerge from the syntheses of the First and Second Syntheses. It is here that Ayache's radical contingency of the derivative, and Roffe's emphasis on the intensity of the social unconscious matter for us. This is because eternal return is the postulate that the mnemotechnical field is rent asunder by *différance*. This is the virtual potency of the pure past that is never contracted in habit, that is always

excessive of extensional determination, that is the promise of novelty. The pure past (as extensional and actual) sets the determinate conditions by which any possible meaningful habit can be expressed. But that which remains, the indivisible remainder, that is never settled, never pacified, returns perpetually as the insistent disruption of closure *per se*. So, while the First and Second Syntheses operate by a process of grammatization that inscribes, encloses, and extensionally quantifies the meaning-making process through mnemotechnical operations, *the Third Synthesis is unconscious death drive* (Somers-Hall 2017: 323ff).

As death drive, eternal return is the repetition of something that cannot be represented. This is why Žižek (2017) can speak of the Lacanian Real as being integral to value, and why the ‘plastic logic of value’ that Konings (2018) discusses has its internal creative motor. It is the explanation of the scission endogenous to financial operations. Death drive, as eternal return, is the impossibility of mastery, closure, finality, pacification, etc. This means that there is no possible paying off, or meeting of obligations. Eternal return is the guarantee that debt will never be resolved fully or finally society-wide, even if debt-habits can seemingly be paid.

Ole Bjerg similarly speaks of “debt drive” to characterize contemporary capitalism. What he means is that there is

an unconditional impetus which disregards the proper needs of the living society and simply battens on it. It is as if some part of the economy, the bank, is sublimated, torn out of its societal context, elevated to the dignity of the Thing and thus caught in an infinitely repetitive cycle, endlessly circulating around the void of the impossibility of debt redemption (Bjerg 2016: 226).

Such a vision of capitalist social formation explains how it is that capitalism operates by decoded flows (Deleuze and Guattari 1983). While coding takes place at the level of habit and pure past, through mnemotechnical meaning-making, capitalism, as “debt drive,” is the intensification of decoded flows as the eternal return of the death of identity. While grammatization forms meanings through value-laden abstractions, there is also the endogenous process of code scrambling that is intrinsic to those very abstractions. Which means that any given inscription (for ex., a value) is never just what it is. To suppose so is create a fetish object – value fetish. Similarly, any given enclosed asset is never just what it is. This would be to create an asset-fetish. Further, any given price is also never just a number; never just an extensional quantification. To assert this

would be to engage in price fetishization. Of course, they are these things and do exert some measure of constituted power in their fetish forms (as we learned in Chapter Two). However, this is never done without the simultaneous and concomitant activity of death drive.

Thus, when Ayache claims that with every trade the entire market is traded, it must be understood that with each poetic activity of trading, the writing of the trade is a construction of particular serial habits that express only certain selections from the archive of the market. And with each trade, the entirety of the archive is both actually and virtually operative. The actual prices (and all the concurrent relations this entails) are passively contracted in habit, and passively conditioned by the pure past which sets the orientations by which the pricing activity can take place. Virtually, the entire regime of semiotic meaning conditions the actual determinations with indeterminate potency, from which the determinate derives its transcendental coordinates. And, then finally, with each trade, the contingency that results from the death drive of the system guarantees that every trade repeats the conditions of its own undoing, compelling further fidelity to the system and its operations (Goodchild 2002; 2009).

## 5.2 The Techno-Temporality of Finance: 7 Theses

Let us now distill the above into 7 theses that are befitting of any speculative project into the logic of finance. The first four pertain to the logic of finance as elaborated in this project – *IEQU*. And the final three are prospective ways to address fetish objects in any given political economy. They are not exhaustive, but show how future works might carry the mantle of this defamiliarizing project into familiarizing pursuits.

1. **Inscription:** *finance operates through acts of inscription.* These are passive contractions, at the level of habit (i.e. First Synthesis of Time). They are writings; marks; signs. *Inscriptions are meaning-laden.* Those with capital-power, leverage, and who are given higher status through organizational habit, construct the means by which inscription proceeds. *As such, the field of habitual meanings are produced in a milieu of asymmetrical power.* Investment decisions, in the hands of those with power, translate from fields of archived meaning those flows of meaning that might obtain. Inscription is the way that flows of meaning are serially reproduced through mnemotechnical devices that carry this meaning from



moment to moment, from trade to trade, from contract to contract. *It pertains to the First and Second Syntheses of Time.*

2. **Enclosure:** *enclosure is the contraction of virtual potencies, through the selection of meanings, into forms of habit.* Enclosure is abstract conceptualization. *It creates fetish objects.* These objects are perceived as having functions, but are really as if existing forms concealing constitutive activities. *Enclosure is privatization.* It is the contractual cutting off of a set of activities by contractualization that delimits discrete entities. However, *enclosure is never final.* It functions as though it were. But all enclosures are leaky. *It pertains to the First and Second Syntheses of Time.*
3. **Extensional Quantification:** *inscription and enclosure are mathematized via extensional quantification.* The most notable act of extensional quantification is *pricing.* This mathematization of meanings and enclosed entities, *converts any possible entity into that which can be calculated.* This is the primary means by which financial technics are formalized. *Extensional quantification is meaningless syntax.* It is the further abstracting away of inscriptive meaning and enclosure. The reign of quantity would leave us with a world degraded, as the incommensurable reduced to the commensurable. However, there is no such reign *in se*, only at the level of *misrecognition.* *It pertains to the First and Second Syntheses of Time.*
4. **Intensional Quantification/Unconscious:** *intensional quantification is the active motor of financial operations, and the constitutive vitality of capitalist social formation.* Intensity is the variation of difference-in-itself that *guarantees that static identities are always-already ruptured.* In fact, the very formation of social forms as such, requires that intensity repeats. Likewise, inscription, enclosure, and extensional quantification are necessary for this death drive to be operational. There is no priority or opposition between the first three and this fourth. *It pertains to the Third Synthesis of Time.*
5. **Money and Debt:** Money must be understood as 1) *inscriptive*, in that it is a mnemotechnical device that carries meaning from transaction to transaction; it can be understood as 2) *enclosure* in its tendency to demarcate the limits of value; which 3) relates to its formal appearance as *extensionally quantified* value; and also, money is 4) *intensional* as a decoded and deterritorializing flow. For Deleuze and Guattari, it is a 'schiz-flow', "a means of passage through the smooth spaces where political determinations reach their limits, so that values can pass even where values are no longer recognized" (Goodchild 2010: 32). This means that money becomes that which is most desired. Thus, money creates desire for more

money. Or, said more accurately, since desire requires an object, *money, as intensive, is death drive*. This leads us to debt, or the ‘debt drive’ of capitalism. Debt drives capitalist social formation because of its ability to coax investment through pathological fidelity to its own repetition. Financial speculation is driven by debt. However, this is not a gamble on the future. Rather, it is the paradoxical system of habitual serial activities of inscription, enclosure, and extensional quantification, that performatively construct the determinate relations that compose capitalist society, while equally undermining the sufficiency of any such speculative operations. As the gap between the serial operations and intensive variation grows, so too do crises become more likely. This is because serviceable debt becomes less proportionate in relation to virtual debt. The more serviceable (i.e. actual/habit-based) debt is attended to, the more the illusion of pacification (i.e. paying off debts) takes hold of the social consciousness, leading to the faulty conception that things are ok. This is a speculative reworking of *the instability hypothesis* (Minsky 1992). Further, as the concentration of financial capital intensifies, through the increasing leverage relations of those with capital-power, the more crises become likely, because the more limitations are drawn around the sources of meaning-making. This means that societal debt writ large, as mnemotechnical field, is virtually repressed. As mnemotechnical capital expands in the form of a virtual semiotic milieu, and as capital-power becomes more intensely concentrated through habit and organizational tendencies, the gap between the two increases, leaving the possibilities for servicing debt-obligations to become restricted, in the first instance. This leaves a technical shortfall in the very ability of debt servicing *as such*. This is a way to speculatively think through capital-output ratios, and all the attendant issues that accompany investigations into ICOR as a multi-asset phenomenon (Billings *et al.*).

6. **Financial Institutions:** Financial institutions primarily operate as scaled up leverage mechanisms within this process. They are the *essential* actors, fetishized as functioning for the purpose of societal furtherance, which is filled with *inessential* component parts. These component parts (people, assets, possible assets such as nature) are inessential in that they are fungible as assets for the system. Financial institutions, thus, act as deputies for a system that seeks to operate for-itself. They are the formal sites of leveraged capital-power, and “stand in a structural relation of power with respect to everyday debtors” (Adkins 2018: 80). With such power, these institutions are the sites whereby the logics of

inscription, enclosure, and extensional quantification are constructed and deployed. These institutions are regimes of semiotic capture (D-G 1988). As Konings (2011: 129) has showed, US financial institutions exported “American institutions and techniques and so [reshaped] the structures of global finance.” This shows how the tendency towards concentration of financial capital takes place through the proliferation of coded mnemotechnical devices, that operate through self-reinforcing logics, which set the determinate conditions by which the techno-temporal process of financialization can proceed. This is a way to investigate the *how* of neo-colonial debt relations and neo-imperial expansion. It also brings state theory into play as this shows how finance extends national “integral statehood beyond the territorial definition of the formal state” (Konings 2011: 129). Jameson (2003: 701) refers to this as the “Americanization of the world.” What we can speculatively engage from our approach is precisely *how* and *why* this takes place, beyond merely the empirical *that*. One recent intervention into the institutional logics of financialized capitalism that would be useful in this direction is the work of Michel Feher (2018), whose book *Rated Agency* examines how the concerns of corporate rating (stock prices) and national rating (bond prices) have precedence over profit maximization and GDP. By constructing a world concerned with financial ratings, a *mathesis universalis* has been presented and taken up as the metric for determining socio-economic activity. This novel financial logic shifts the determinate conditions for how the logic of IEQU operates. Further, the work of Bret Benjamin (2007: xii) on the World Bank as a *trafficker of culture* can be supplemented by our speculative project as we understand precisely *how* its aspirations towards global management have been able to exert a “stranglehold over development as both a theoretical principle of modernity and a set of lending practices that have effectively remapped the globe along an increasingly stark grid of economic coordinates.”

7. **Subjectivity:** CEO of Goldman Sachs, David Solomon (2020), notably remarked how consumer spending has overcompensated for the slowdown in manufacturing and capital spending. This has taken place through the construction of subjectivities that are ever-increasingly taking on the techno-temporal logic of finance. Again, Feher’s (2018) work is instructive here, as subjects have become subsumed into a regime of rating. Ascher (2016) speaks of this as being subjected to the means of prediction. Through credit ratings and even social credit systems, subjectivities are constructed through their own processes of IEQU. This creates

subjectivities that can be understood in terms of their liquidity. Liquid subjects are those more capable of meeting obligations. Illiquid subjects are those highly incapable of doing so. Investigating precisely how one's capacity to meet obligations (i.e. investigating subjective liquidity) can be undertaken by examining the constitutive activities that are formally operative in the functionalities of consumer finance and its spending habits and debt obligations. Bryan and Rafferty (2019) have referred to labor's illiquidity as opposed to capital's liquidity. Our contention would suggest that we expand the conception of subjective liquidity beyond class lines, much in the way Stiegler prompts, by adjusting our focus on the processes of social meaning-making that are society-wide, by looking at cognitive capitalism, affective capitalism, and libidinal economy. The spectrum between liquid and illiquid subjectivity relates to the capacities of subjects to receive ROI for the intensive lines of credit extended to capitalist social formation for its serial production processes. The ROI is disproportionate to the intensive investment of libidinal energy, which means that the relation between capital and income, or capital and equity becomes increasingly divergent. Along with this is the increasing divergence between processes of meaning-making and social value production. Illiquid subjects are offered distorted liquidity injections in the form of social liquidity devices that boost the pathological search for social esteem, or what Feher (2018) calls 'reputational value'. But these subjective liquidity mechanisms pale in comparison to the productive meaning-making power of institutional capital-power, which produces, again, a bifurcation between incremental ratios pertaining to debt expansion and its pacification. Further to this, human capital is not what haunts us as that quantified logic to which we must submit ourselves; instead, we become portfolio managers, perpetually managing our reputational assets to ensure socio-economic solvency. The result is that we become bubble subjects. That is, as subjects constituted by speculative assetization, our tendency towards inflation intensifies along with the perpetual expansion of our reputational asset portfolios. These portfolios court investment from employers (on LinkedIn), from sexual/romantic partners (Tinder/Bumble/Hinge), from transport platforms (Uber/Lyft), etc; all for the purpose of attracting investment into 'securitized' projects. Thus, as rated agents, the scenario is much more intense than merely expanding our human capital to become more valuable on the job market and thus more potent as consumers. This novel regime of governmentality more potently appeals to our libidinal desires as we are complicit

in the gamification of the increase of our reputational value. The rate of expansion increases vastly more than notions of human capital and fits nicely alongside the psychoanalytic analyses of capitalism in the work of Ole Bjerg (2014; 2016), Todd McGowan (2016) and Samo Tomšič (2015) *et al.*: i.e. as portfolio managers we are ensnared by the logic of the *objet a* and the pervasive spread of surplus-*joissance*. What this results in is a form of subjective anxiety that frantically courts investment from potential ‘creditors’ in order to take advantage of the rising asset prices that carry with them significantly greater intensities of service demands. The issue becomes one of *solvency*. If we are speculative subjects perpetually coping, hoping, doping, and shopping (as Streeck [2017] claims), but have no tangible liquidity, then our anxieties become protracted and we experience crises of solvency, no longer able to address long-term uncertainties but perpetually forced into short-termist pursuits. We feel like our asset portfolios have value but they are fundamentally illiquid. Thus, we seek endless ways to (supposedly) inject liquidity into our portfolios by improving our ratings to secure more investment. This becomes a cycle of crisis, not entirely different from that generally associated with neoliberal subjectivity but definitely with its own updated flare. And what is more, this creates subject positions that are defined by diverging structures of feeling. Amin Samman (2020) has written about this in relation to the logic of eternal return. For Samman, this is most apparent in the difference between the asset rich and asset poor, for whom the debt-equity relation diverges through the thrill of the asset rich chasing returns, while the asset poor are burdened by ever-mounting debt obligations.

## **Conclusion: Thinking According to Finance**

So, what does it mean to think *according to finance*? In simple terms, it requires non-representational thought. This is the first challenge of our project. To be able to conceive of finance in a way that would not foreclose the object of investigation at the outset. Thinking of finance representationally is to investigate finance as a material *for* thought. It is to presume that it is a pre-existent identity that can and ought to be subsumed under concepts *for* knowledge. This is to think *about* finance according to The Dogmatic and Moral Image of Thought.

Thinking non-representationally opens up the investigation to the material under consideration by attuning to the constitutive activities that make up the *as if* existing we call 'finance'. This means that finance both is and is not what it is putatively identified as. Holding this tension allows us not to rest too confidently in our analytical orientations, knowing full-well they are constructed by serial habits. However, this does not disregard conceptual orientation as a necessary starting point. Always *in medias res*, thinking non-representationally is also not unaware of conceptualization and the value it carries in setting paths for investigation. Instead, it requires a shift through the path setting that finds that which is excessive of the determinations presented. Borrowing from Laruelle (2012), this is the difference between correlating thought *with* the real, and thought mediating the Real.

To correlate thought with a putative real is to find oneself among the first two of the four orientations of the relation between thought and being of Livingston: the Ontotheological and the Criteriological. To have thought mediate the Real is find oneself among the other two: the Generic and the Paradoxico-Critical. It is to open up thought to thinking beyond the philosophical decision that subordinates 'the being of the 1' to intellect (Laruelle 2012). This is different from Deleuze, for whom the trap is in subordinating difference to identity. However, Deleuze is valuable precisely in that thought only takes place by being shocked, or resulting from an encounter. This encounter, contrary to Laruelle, is with difference in itself. We might, therefore, claim that thought for Deleuze is non-representational precisely because thought is engendered by an encounter with the Real – the Real of Difference.

With such an encounter, thought is precluded from foreclosure in any final sense. Thought is always also unthought, as the material excess of difference is beyond cognition. If it were not, then it would not be excessive in any meaningful sense. In this way, it is Stiegler's elaborations of technics and the movement of *différance* that allows us to begin to think finance non-representationally. This is because there is no *a priori* distinction between thought and the subject of thought. Finance, as *techné*, is co-possible with *anthropos as such*, which means that finance is not opposed to thought but is co-constitutive with thought. Remaining open to its excessive flows requires an attunement to that which is not-thought, so that thought can maintain a susceptibility to encounter, to the Real as the determination in the last instance.<sup>54</sup>

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<sup>54</sup> This is a very enigmatic phrase, but the value it serves is in suspending the principle of sufficient philosophy that grounds itself through the determinate decision 'in the first instance'. See Laruelle (2016: Ch. 3).

Further, to think *according to finance* requires that we conceive of finance as being non-representational in its own activities. This is the more challenging task. Finance is typically thought of exclusively in formalist terms. For the Marxian legacy, finance is a form of enclosure first and foremost. For Keynesians, finance is a modal operation. And within the Critical Finance literature, while varied, finance is typified as performative and/or constructive. Through all of these persuasions, finance is formalist through and through. Its activities colonize the future; re-entrench asymmetrical power relations; intensify mystification; construct social relations; capture resources; abstract quality through conversion into quantity; *et al.* While not wrong, if the task is to *think according to finance*, then financial operations must not be reduced to such formalist functions.

To think according to finance is for finance as raw material to take the status as Real, insofar as it is not *merely* correlated *with* subjective and/or institutional operations. It is to *also* leave space for finance-as-Real to be mediated by such operations in mnemotechnical processes. And this is the value of thinking time in the ways we have explored in this project: because they let us think finance, and also think according to financial operations, such that their very logic is revealed in techno-temporal terms that are not reducible to instrumental and abstract conceptions of *techné* and time.

We began in Chapter One by problematizing linear and sequential conceptions of time with the aid of Bergson's critique of time as space. The tendency to spatialize duration leads to a homogenous conception of time-as-space that stifles freedom and forecloses duration in abstract forms. However, the qualitative multiplicity of duration as such opens up a conception of temporality that is intrinsically creative (i.e. novel and free) and also beyond any process of discretization and hence calculability.

Chapter One continued with the speculative work of Gilles Deleuze and his co-authored project with Felix Guattari. The task there was to explain Deleuze's novel conception of temporality, that expands beyond Bergson's critique of the spatialization of time, by providing a material account of how thought is engendered, and how the Syntheses of Time explain the tendency towards static identity, while also articulating how any tendencies towards such rigidities is always-already undermined. That chapter culminated in the formulation of a process of social formation unique to capitalism that explains how resources are perpetually enclosed through *coding*, and also how this tendency is always deposed by the *decoding flows of the capitalist axiomatic*. In the end, we painted a picture of a social *topos* that is constructed by the *techné* of desire. This *techné* is both desiring-production and social formation, and it builds out a social milieu that is at once defined by control and also lines of flight.

In Part Two, we explored three typical approaches to examining political economy. Chapter Two investigated Marxian thought as primarily concerned with the accelerative and integrative logic of fetishization. Chapter Three turned to Keynesianism and its emphasis on uncertainty and the unknown. And Chapter Four was concerned with selections in Critical Finance Studies that view finance in performative, constructivist, and speculative terms.

In the end, we were taken on a journey through forms of thought that view finance in formalist terms. From the Marxian aperture, we gleaned how finance is a higher synthesis of the production process that constructs the world in its own image by promising settlement but only offering deferment. From the Keynesian aperture, we learned that finance is a modal operation that sets the macro conditions for micro experience through an endless ethical activity of giving and asking for reasons. And from Critical Finance, we learned that finance is an engine that constructs an archive and social unconscious through the endogenous plasticity of value, that is ruptured by the Real of contingency through the poetic activity of leverage.

The final chapter serves as a speculative proposal for how we can take these lessons learned from Part Two and wed them to the project of Part One, *in material terms*. The work of Stiegler provided us with the material of technics that concretized our musings in Chapter One. In the end, what we hope to leave the reader with is material for further investigation into the logic of finance as a synthetic techno-temporal process within processes. While we can only begin to consider what it means to think according to finance, the hope of this project is that we have placed a jam in any doors that tend towards the foreclosing tendencies of the philosophical decision. To think according to finance, is to think according to the Real. Therefore, if finance is a raw material that is finance-as-Real, then to think finance is a radical invitation to let finance think itself through thought. This is not to valorize it or cut it off from critique. On the contrary, it is to reorient the conditions of critical thought, such that they are not subject to the “impotence of thought” that derives from the philosophical decision. For, to decide is to cut off (from the Latin *decidere* means ‘to cut off’). But to let all thoughts be equal is to let finance-as-Real be mediated by thought as a technical process of thought that is co-possible with the human *per se*. The stakes of such a claim can only be hinted at here. And it is following such a prompting that we hope makes this project worthwhile in stimulating more inventive thinking according to finance, as the future most assuredly guarantees that all our habits are always-already inadequate.



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