

Towards a Category Theory for Complex Realism

Otávio Souza e Rocha Dias Maciel¹

Abstract: This paper attempts to retrace the steps used to conceive of category theory in Complex Realism. It starts evaluating Three Turns and Five Directives that have emerged from a transdisciplinary approach to metametaphysics, as well as the Speculative Realists' contributions to this state of affairs. It then presents a more detailed account on how to build a Category Theory for this Complex Realism that grew out of Speculative Realism, Whitehead's Process Philosophy, and Nicolai Hartmann's Critical Realism, among other important influences. The purpose of this paper, then, is propaedeutic in showing directions to be taken and errors to be avoided in the construction of a new categorial matrix for Complex Realism.

Keywords: Speculative Realism. Process Philosophy (Alfred N. Whitehead). Critical Realism (Nicolai Hartmann). Complex Realism. Category Theory (Metaphysics).

Resumo: Este artigo tenta reconstituir os passos utilizados para conceber a Teoria das Categorias no Realismo Complexo. Começa por avaliar os Três Giros e as Cinco Diretrizes que emergiram de uma abordagem transdisciplinar da metametáfísica, bem como as contribuições dos Realistas Especulativos para este estado da arte. Em seguida, apresenta um relato mais detalhado sobre como construir uma Teoria de Categorias para este Realismo Complexo que cresceu a partir do Realismo Especulativo, da Filosofia do Processo de Whitehead e do Realismo Crítico de Nicolai Hartmann, entre outras influências importantes. O objetivo deste artigo, então, é propedêutico ao mostrar rumos a serem tomados e erros a serem evitados na construção de uma nova matriz categórica para o Realismo Complexo.

Palavras-chave: Realismo Especulativo. Filosofia de Processo (Alfred N. Whitehead). Realismo Crítico (Nicolai Hartmann). Realismo Complexo. Teoria das Categorias (Metafísica).

¹ Doctor of Philosophy, area of concentration "Epistemology, Logics and Metaphysics", at the Post-Graduate Programme of Philosophy at the University of Brasília (PPGFIL/UnB). Master of Legal Theory and Global Law at the European Academy of Legal Theory (Goethe-Frankfurt; ULB-Brussels). Bachelor of Philosophy and Bachelor of Law, both at UnB. Professor of Philosophy and Theology at the University of the Federal District (UnDF) and Full Research Collaborator at the PPGFIL/UnB. ORCID-ID: 0000-0003-3137-8738. E-mail: oe.maciel@gmail.com

INTRODUCTION

In this auspicious moment celebrating the Fifteen Years of the Goldsmiths College's one-day workshop about Speculative Realism, it is a time not only for reminiscences, but also for assessing its fruitfulness towards previous and concurrent philosophical movements. Even further than this, it is a time to circumvent an exclusively museological interest in Speculative Realism and put it to good use. In this work, I will attempt to show what this *good use* could look like from the perspective of broader philosophical and theoretical efforts I've been undertaking these last few years.

The move from “speculative” to “complex” realism, I will argue, comes not from negating or surpassing speculation, but by housing it among other methods, approaches and transdisciplinary concerns that might be present or absent in the works of the (already) traditional thinkers of Speculative Realism (SR). To better understand why this move was necessary for Complex Realism (CR), I will delve into a few topics of our Category Theory that might be beneficial for all those that would feel invited to inhabit and prosper in this metametaphysical territory. It is, first and foremost, a work of hospitality.

This paper has two parts. Our first stop will be at the discussion of the Three Turns towards Global Philosophy that we have been defending for some time – the “Speculative Turn” being allocated here. From this, we are able to showcase some of the basic values of Complex Realism. The second part is some sort of “making of” regarding the construction of a Category Theory that we have been working out by employing insights from key authors and movements that have contributed to our thought. We build not only on Speculative Realists' ideas, but also on previous authors' (mainly Nicolai Hartmann and Alfred North Whitehead), as well as from contemporary thinkers', such as Hilan Bensusan, Niklas Luhmann and Bruno Latour.

1.1 – Three Turns Towards a Global Philosophy

The Three Turns function on our Complex Realism as a negative heuristics². Their “conclusions”, or at least the directions they point to, are those crucial sets of core tenets that we are not willing to forego. Even if the entirety of our own endeavours proves fruitless or

² These “turns” have first appeared on a presentation I did at the Anarchai research group, led by professor Hilan Bensusan here at the University of Brasilia in 2018. The presentation was expanded and defended on the Düsseldorf Graduate Workshop later that year (see Maciel, 2018).

convoluted, if these Three Turns are properly understood, we would be dully content. I would like to preface this by saying that the names and labels chosen are only for reference-fixing and should not be taken restrictively.

Right after we detail them a little more, we shall talk about the elephant in the room that comes with the term “global”. In the age of modernity, neoliberalism, imperialism and whatnot, it has certainly acquired a bad connotation – or it raises eyebrows in suspicion, at the very least. Another important observation is that, as most Speculative Realists, professor Bensusan and Latour, we partake in their shared aversion towards theories that espouse some sort of metaphysical totality, or towards paralysing absolutisms that suppress complexity and contingency. We shall return to this topic later.

The **First Turn** might be broadly named “Metaphysical Turn”. Nobody seems to agree what “metaphysics” is, either to be defended, or to be properly criticized. Nevertheless, common presentations revolve on the study of being, of reality, of what-there-is, and similar terms. It includes inquiries about existence, becoming, spacetime, forms, difference/identity, and so on. Traditionally it was divided in sub-disciplines that focused on the study of being *qua* being (ontology), and the study of nature and her processes (cosmology). It also used to include the study of the human soul or mind (psychology), and the study of the sacred (theology). Even if we don’t all agree on this division, it is informative to see how metaphysics is a broad discipline that scrutinize from the very interior of one’s mind, up to the vast reaches of the cosmos, of the God(s), or even what reality itself is.

Analytic philosophy contributed much to the surviving of metaphysics. Despite being proclaimed dead again and again, authors such as Peter Strawson, David Lewis and David Armstrong have continuously strengthened the study of causation, time, space, existence (both grammatical and material), modality, abstract objects, and so on. Even if they usually conflate logic and metaphysics, that has at least kept the interest alive over the last century. From the “Continental” side, however, most of them have endeavoured to produce some sort of metaphysics of human intersubjectivity in order to fulfil the need to talk about what is “real”. Despite that, the *real* became nonetheless entrapped in whatever correlation was more fashionable, be it the unconsciousness, the class struggle, the language games, the Spirit – dealer’s choice. Of course, very few of them would openly admit to be doing that. They claim to be talking about simply what there is, since the criteria for existence was to be under the obligatory presence of humans and their cognitive and/or experiential apparatus.

Even if not a united front, the Speculative Realism movement has had a significant side effect, which was to call out for all those metaphysicians in the closet. It does not matter if you have a hyperchaos kinky, or an object fascination, or even a process-natural experientialist orientation, we have not seen this level of metaphysical freedom to experiment and to create uninhibitedly at least since Greco-Roman antiquity. Now, freed even from the restraining oversight of this or that religion, on behalf of all those that felt free and excited to contribute to metaphysics, I thank all of those of Speculative Realism for showing us that it is okay to think about reality even when we, humans, are not there all the time. The importance of the “Metaphysical Turn” is not the defence of Leibniz, or Harman, or Plotinus, but exactly this flourishing brought by SR that has greatly amplified the somewhat isolated metaphysicians of the past.

Lately, a **Second Turn** has been emerging when philosophy/metaphysics find their way back to all sorts of sociological aspects, especially those pertaining to race, sex, gender, ethnicity and sociocultural history. The Second Turn would seem too ‘metaphysics-of-subjectalism’ if not accompanied by all those radical authors of all genders and races that denounces the very concept of “subject”, which more than often means a straight white male who usually is an atheist or an agnostic thinker, after being raised as a Christian in a middle-sized or big city in North Atlantic countries.

Post/decolonial thinkers, feminist theorists and critics of racism, among all others intellectual and activist workers, have contributed a lot to sophisticate what reality means. Furthermore, they have contributed with truly metaphysical theses about what one might call *sociality*. Taking up the criticisms of modernity from great authors such as Gayatri Spivak, Walter D. Mignolo and Bruno Latour, one comes very close to a proliferation of objects, monads, nexuses, and forms of associations that are not anthropocentric, even if humans are there as ingredients or as one of the players. Networks of actants and a plurality of modes of existence are now evidences, not merely abstractive-thinking by armchair philosophers. Second Turn philosophers often look like (and/or *feel* like) sociologists, anthropologists and activists, and their contributions are steadily becoming the very subject-matter of most of philosophy that deals with sociality between humans, animals, the environment, and even artificial intelligences.

A clarification is needed. The Second Turn does not mean to forcefully adhere to *this* or *that* feminist theory, or to shun off *anything* that is not decolonial. That would be counterproductive to the complexity and contingency required to make sense of Complex

Realism. The destabilization of subjectivity and the pragmatic display of contingent models of personality, of sociological arrangements, and of institutions, is an intrinsic value that might indeed ingress into higher forms of valuation for our CR. However, their greatest contribution is the aftertaste left in our philosophical tasting buds that maybe *apostasy* from modernity is the way to go.

Yes, modernity was great for human rights and the advancement of science – was it, though? What if, as Latour asks, we have never been modern, and the advancements or generalization of rights is due to networks' own associations that do not exactly corresponds point-to-point with modernity's own discursivity? What if, as a post-Luhmannian systems theorist could ask, the autopoiesis of the social systems such as Law, Art, Science, Economy etc., is due to their own communication complexity self-differentiation? When these questions begin to be asked, one might finally realize not that modernity is inherently good, nor that it is an evil to be fought off – the scenario is far more radical: we begin to assess the true weight of modernity either as an important ally, or as a powerful enemy. The final appraisal is far more disappointing for both its stalwart defenders, and its harshest critics.

The apostasy of modernity is actually a very bizarre topic when we search about it online. Despite the memes and humorous twists, most people believe that this would indicate the return to the Middle Ages, or to the obligatory prevalence of their favourite Abrahamic faith. So many fundamentalists among Christians and Muslims have no compunction to say that modernity is that big bad evil to be annihilated and forgotten, but my point is not this at all. The point is that modernity is not, nor it ever was, enough to deal with complexity and with reality. Contrary to what those fundamentalists might claim, complexity and contingency have been forcefully suppressed from the first time when their religions spread across the lands through horrible wars and ethnocidal rage. The systematic destruction of almost all Pagan worlds in Eurasia, Africa and the Americas, concurrent to massive and directed efforts to supplant them with an imposed external faith and with the invaders' organizational systems, is not some weird deep-web fanciful theory, but is actually an integral part of the history of the globe.

On that note, we arrive at the **Third Turn**, which consequently comes from the dissolution of these faiths as the go-to characterization of what the spiritual, the sacred, the religious is. Thankfully, many Christians and Muslims have contributed greatly to this cause not only by seeing their faith as one among the possible ones, but also by being knee-deep in historical, archaeological and hermeneutic research. This Turn started with the New Religious Studies/Sciences, which combine a myriad of disciplines to study the spiritual phenomena

across time and space. This has yielded significant contributions, such as the theological turns within the “ontological turn” of the anthropological researches, alongside with the institutionalization of the Pagan Studies.

Anthropologists like Philippe Descola and Eduardo Viveiros de Castro have gone to great lengths to describe the faiths of their ethnographic allies as not something exotic, but as genuine spiritual practices that are well-aware of their ever-present existential risks. Even more recently, names such as Chas S. Clifton, Michael York, and Edward Butler furthered the *Pagan Studies* not only from a sociological point, but from a Pluralist and Polytheistic theological perspective. This is something inconceivable in many parts of the world dominated by monotheistic faiths which, to use modern words, have resulted in theology “lagging” behind other “advanced” sociocultural disciplines. As E. Butler himself puts:

“Indeed, “theology” as it is known in the modern academic world is an anomalous pseudo-science. In every other case, a science’s name denotes a class of objects, as in the case of “biology”, which pertains to the class of living things, or biota. “Theology” ought thus to refer to the class of Gods, *theoi* in Greek, and not to a “God” presumed to be singular. Were biology to be construed in the manner of modern academic theology, it would insist upon the existence of a single supreme living thing. By contrast, in Plato and Aristotle the term *theologia* refers to a discourse concerning the Gods collectively, the class of living immortals who have chosen to reveal Themselves to mortals and are worshiped in traditional cult” (Butler, 2021).

Now, to the “*global*”. It must be very clear that these Three Turns do not mean to adopt this or that ideology, religion, school of thought or a particular activism. The Turns point out to what we are not willing to forego. For that, they operate as the “negative heuristics” for Complex Realism. The “globality” means something closer to what Niklas Luhmann once characterized what we call the **universality of apprehension** of the sociological-communicational object itself. In his words:

“[His own Systems Theory] claims *neither* to *reflect* the complete reality of its object, *nor* to *exhaust* all the possibilities of knowing its object. Therefore, it does *not* demand *exclusivity* for its truth claims in relation to other, competing endeavors. *But* it does claim *universality* for its grasp of its object in the sense that it deals with *everything* social and not just sections (as, for example, strata and mobility, particularities of modern society and patterns of interaction, etc.). Theories that claim universality are easily recognized by the fact that they appear as their

own object. If they wanted to exclude themselves, they would have to surrender the claim to universality” (Luhmann, 1995, p. xlviii, italics are his).

Now, if we are not just talking about the specific strata of reality made of communication (a Luhmannian-inspired characterization of “society”), the universality of apprehension of complexity and contingency flourishes significantly and uninhibitedly when the Three Turns rotate constantly to keep away suppressive metametaphysical strategies. Yes, the reduction of complexity is the job of any system. A smartphone reduces the complexity of carrying notepads, compass, music player, agendas, maps and so forth. Yet, this reduction also yields new complexities (how to deal with this increasingly digital world, for instance) and new contingencies (either when you lose your phone charger, or when a foreign-funded military coup tries to expropriate lithium for capitalists). In summation, the “global” we Complex Realists work with means to not artificially relinquish the necessity of metaphysics, of sociology, of plural theologies (and so on); whilst securing that world-impoverishing “no metaphysics allowed”-closeted-metaphysicians, racists, sexists and religious fundamentalists are chased away vehemently. It is the price to be paid for the required *ouverture d’esprit*, to use Latour’s words, to undertake the Complex Realist endeavour.

1.2 – Five Directives for Complex Realism

From these three turns come the *Five Directives for Global Philosophy*. We shall go through them only superficially here, since the details would be too much for one paper. **First** and foremost, CR is a study of **complexity and contingency**. That means any totalizing philosophy, religion or ideological/activist movement loses all of its appeal and power among us when they are dealing with complexity and contingency. Suppression of these two forces by discourse, practice, or active omittance, are red flags. To deal in and to manage complexity and contingency is the first directive when it remembers us to not lose sight that reason is not limitless, and that most things just want to flourish and prosper on their own, away from any kind of totalizing light of this or that religion/philosophy.

Second is more appropriately the **apostasy from anthropocentrism – and from modernity**. That does not mean humans and modern ideologies do not matter, but that they one of the players at the global philosophical table. It means humans are not the obligatory starting point, neither the homogenous ending point. Notwithstanding, any move beyond them that

suppresses complexity and contingency is not allowed. Anthropocidal positions, be them total or just by accelerating whatever so that human extinction becomes the desirable side effect, are not just plain infantile, but are also borne out of a lethargic totalization of an ill-conceived idea of “reason”. If totalization is what is to be avoided, there must be no doubt that to turn everyone into obligatory adherents to this or to that political or religious grouping is absolutely *not* the goal with this directive. The decentralization of humans, particularly of modern humans, just means they might have something to contribute, as everyone else does, but they do not own the game any longer.

The **Third Directive** comes as a consequence of these two: the defence and study of the **plurality of modes of existence**. Surely this has been turning into a more popular expression since Latour and Souriau, but we do not talk *only* about the plurality of modes *in relation* to anthropological experience. Claiming that Law and Art are not the same kind of social system is indeed important and valid, but we should pay more attention to different ontological kinds that are indifferent to humans (that means, humans’ presence is not a requirement for their characterization). This might bring us closer to a post-Luhmann Systems Theory than to other “too-anthropological” theories. We shall return to this later.

The **Fourth Directive** means treating nexuses of objects, systems and networks as they are in their associations and dissociations. In practical terms, this means revamping the so-called “transdisciplinary” account of reality towards something more complex which we have been calling **Academic and Epistemic Isonomy**. It is not the abolishment of disciplines and departments – rather, perhaps, to flourish other kinds of researches. Latour’s examples are informative when he highlights the fact that anthropologists are very comfortable in dealing with folklore, agricultural practices, cosmological theories, marriage-alliances, and healing techniques all in the same ethnographical work. The claim is not that these topics are “the same”, but that the nexus analysed is more properly understood in this fashion, not in a purposely fragmentary way. There is very little yet written about the kind of Isonomy we are proposing here, so this will need to away further developments.

The **Fifth** and final Directive is what I like to call **Metaphysics of Risk**. It is inspired by Niklas Luhmann’s own “*Soziologie des Risikos*”, a book from 1991 in which he covered at length the hypercomplex state of society, when communications proliferate at an alarming rate (even for a 90’s point of view), bringing with it even much more complexity and contingency. When we try to reduce complexity by creating a social system, or a technical object, or even by meditating, we generate new kinds of complexity. Luhmann was not shy

about the powerful creative effects of paradoxes, saying things like “to reduce complexity, we must increase complexity”. A possible interpretation is to say “to reduce complexity, we increase sophistication”. This might mean that the *internal* complexity of systems (social, technical, biopsychic, etc.) and nexuses are enhanced when we can properly receive and manage complexity in more sophisticated ways. There is no easy way out, whether one wants to stay or to move to another direction, and this is what the metaphysics of risk is all about – dealing with the inherent risks of complexity and contingency in an ever more attentive way.

When one combines these directives, we can draw up more precise terms for the **apostasy**³. In light of this theme, we draw much from the works of Leela Gandhi and her brilliant works on the *ethics of departure* (Gandhi, 2019). She deals with many cases in which walking away from abusive and oppressive contexts is actually a sign of mental health, of socio-political betterment, and even of the exercise of socio-legal rights. She brings many examples, and we can mention from two interesting sides. From an individual’s perspective, she quotes from Monica Wittig’s works (1992) on the right to escape the “social contract of heterosexuality” for all who want to come out of the closet and live their life *outside, away* from that. From a more *sociological* perspective, she quotes Sandro Mezzadra’s work (1992) in which he analyses and defends the right of immigrants to escape poverty, war and famine.

We are not primarily concerned here with analysing the minuteness of each detail of modernity, but the spirit of this work very clearly does not condone with the common “sense” of moderns. The rejection of anthropocentrism brings by the decentralization of *any* kind of humans, not just the straight-white-male-etc. Again, not being “central” does not mean humans are not part of reality, just not as the gravitational centre that its irrevocably starting-and-ending point. Now, to be necessarily anti-racist, anti-sexist and to be anti-bigotry assumes a connotation that comes from Complex Realism’s own values: the apostasy from modernity implies to move out of the metaphysics of intersubjectivity, particularly that kind practiced by those humans that self-imposed any sort of supremacist thought and action. Surely one need not to be modern to be racist, sexist and whatnot, but we have also rejected a supposed

³ The name comes from the Greek word ἀποστασία, first widely used in that language to refer to the great Emperor Julian, the last Pagan Emperor of the Roman Empire. Despite being born in a Christian household, he rejected that in order to retake the complexity of his cultural heritage after studying the Hellenistic Pagan philosophers and theologians. For this, he has been branded by the Christians as the “Julian, the Apostate”. His rule was of course very short (from November 361 to June 363), and unsurprisingly he died under mysterious circumstances.

unavoidable “naturalness” of supremacy or inferiority as automatic processes among human collectives.

This apostasy has many effects on the First and Third turns as well. On the First, it means to move out from the bifurcation of nature (Whitehead, 2015) and its sociological implications (Latour, 1993); from the obsession with Ockhamism which yielded an unjustified reductionist fever (Latour, 1988); from the overestimation of human praxis that nearly all the time leads to a self-fulfilling prophecy of human supremacy; from the abolishment of agency from anything that is not human or human-mediated; from the flattening of nature into one single compact meta-system; and from so much more.

Regarding the Third, the problem is not even seen as clearly as those from the First and Second turns. For the widespread notion of monotheism in the Western-influenced world brought by a totalization of reality, one single pack created by one single hovering entity that, in one single stroke, can do whatever he wants. This created one single way to see all religious practices from one single lens, which can lead to a block-rejection of “all religions”. The modern atheist and/or agnostic is trained to believe only one single kind of religion of one single god is feasible, which leads them to reject “all” on the basis of *one*. Or, it leads to a well-intended and good-hearted boutique-mysticism, where “we are all the same”, and that what Buddha, Mohamed and Jesus did is functionally equivalent – as if different religions were just like different iPhone cases, and the “choice” was merely a matter of subjectivist quirk.

The panorama of the Complex Realist territory is now beginning to come up on our horizon. The negative heuristics of what-not-to-do might be inferred from the Three Turns and the Five Directives. What I wanted to make very clear is that we are on a continuous path of setting down the proper virtues for this kind of territory, the values that guide us in to what to do and what to avoid. Hospitality and receptivity are also directed towards communicational structures. For example, the rights of women are not taken at face value – they are necessary because they are housed *among* the flourishing of complexity and contingency. The more intelligences and sensitivities, the higher chances of increasing our sophistication. Even if Pagans, Hindus, Jains, Buddhists, Shinto, American and African Animists might feel more directly in connection to complexity and contingency, there lacks no examples from all other religions that have dealt in these terms. From Avicenna to Aquinas, from Francis of Assis to the Sufis, and even from atheists and agnostics, many sorts of intelligences can indeed contribute to the flourishing of this territory of us all. It is not about an ecumenical hand-

holding with everyone, but knowing that each intelligence that is either permeated or at least open to these Turns and Directives can contribute greatly to what Global philosophy is.

2 – Category Theory and Complex Realism

Up until now, Complex Realism is a purportedly loosely defined attitude towards philosophy, as well as practice-and-theory-making. It rises out of the negative heuristics of the Three Turns, and tries to conceive of paths and approaches to tread in direction of bringing into concrescence disciplines, courses of action and forms of liberty instilled by the Five Directives. Now, with a Category Theory and our proposed design, we will have more elements with which to paint a clearer picture of what Complex Realism looks like⁴.

If seen from too close, the picture might feel too punctiform and dispersed – but as the picture fills itself, the impressionist flavour also fills the mind of our observer. Category Theory research is not new in philosophy, but it has had a remarkably poor development. We will briefly approach a few of the proposed schemes to point out some authors and movements that came to be our closest allies to undertake this enterprise.

2.1 – What is Category Theory?

The term “category” comes from the Ancient Greek word *κατηγορία*, abundantly used in Aristotle’s works. Although he might be the one that coined it, the reasoning was actually at work at his predecessors, of those he surely is closer to Plato. The idea was to conceive of ways to say about what *υπάρχειν* [“pertains” or “belongs”] to things themselves through a universal or abstract ontological-gnoseological reasoning. The term *υπάρχειν* has a tricky history, since people usually translate it as “attribute” or to “hang predicates” on a lump of substratum, as if the knower was the creator – that is, he would be hanging predicates on the blank canvas of things. That could not be further from the truth. Before modernity, things actually had the right to be themselves, and what we did in knowledge terms of *υπάρχειν* was

⁴ Since this paper is merely propaedeutic, one might benefit from two more detailed expositions of the Complex Realist argument. In Maciel 2021a, we reworked some of the general theses here presented with a focus on discussing professor Hilan Bensusan’s Indexicalism (2021) through an emphasis on the Ontology of Communication. The other paper (Maciel, 2023), in Portuguese language only for the moment, explores the general tenets of Complex Realism and furthers the Category Theory here only outlined.

to discover what *belongs* to the substance. It was about membership, belonging, pertainment, not about the all-powerful modern hanging meaning on things.

This needs to be stressed very firmly. Category Theory, as the Ancient Greeks understood, was about discovering, contemplating, theorizing and even interfering on what belongs to things, but the *who* that says what belongs where is the substance itself. This is the insight we shall adopt here. Fire's ποτόν of being [hot] does not depend upon the observer, since it will heat up anything regardless of humans' presence or testimony. The ontological foreground is eminent, and a good epistemological or gnoseological theory about fire must perceive ways of studying Fire's ποτόν of being-hot, under the penalty of being incomplete, of being misguided or, simply, being wrong.

Category Theory is a step further inside this theoretical construction about what *υπάρχειν* to things themselves. It is the very thin and malleable frontier between the ontological and the gnoseological, a boundary that some Neo-Kantians used to name as the *ontognoseological*. It is about crafting something *other* than the being itself we are attempting to observe, and it is also something *other* than the knowledge produced by it. It has an ontological grounding, but it *also enables* theoretical and agencial contemplations and planning. This move is very clear after Kant: you use the category "Quantity" to measure things, empirical things, not the Quantity itself. "How many meters has a meter", or "what is the weight of a pound in pounds", are nonsensical questions. This means, *learning how to use* categories is a whole specific training, for it enables us to have some contact with what there is in order to instaurate knowledge, practices and speculations. This means categories are neither the "object in itself" nor the knowledge produced in itself, but something third – which is different, albeit in some contact, regarding these two.

Categories are not purely ontological nor purely epistemological. Ontology, as a study of being *qua* being, is not committed to forcefully reducing being to something towards humans. In the modernity's parenthesis, that surely was the case, but it has never had this forceful commitment before, during and after modernity's self-imposed centrality. Among the moderns, Nicolai Hartmann saw this clearly, claiming that when we objectify something, we do it on our best capabilities, which does not entail a mirror-like structure towards what there is. First and foremost, what there is, in itself, is under no obligation to make sense for me or for you, as goes Neil DeGrasse Tyson's popular phrase. Only in a creationist-anthropocentric reasoning one could ever assume that "Reason" meant "*human-reason*", and that things *are built* to be understood *by us*.

Replacing the complicated term “thing-in-itself”, Hartmann suggests to name what remains of what there is that was not objectified as the **trans-objective**, that which we know we do not know from an object. There are even things we don’t even know we don’t know yet, which is the **trans-intelligible**. Yet these two differences are still too subject-oriented, since it is about what the subject knows about things. Hartmann writes:

“Being *qua* being” is not only free from it [this subject-oriented feature], not only does it exist without any relation to a subject and before all emergence of subjects in the world, but it encompasses the whole cognitive relation, including the subject and its limits. The knowing subject is also something that is, no different in this respect than its objects and what is transobjective it, and no different than what is uncognizable for it. (Hartmann, 2019, p. 93)

If ontology is wild, creative, complex and contingent, only a sophisticated Category Theory can ever hope to provide tools for logic-building, for epistemology-building, for systems-building, that resonates and harmonizes closer with this take on the ontological. This points to a notion of *coherence*. It is not coherence regarding truth-tables, nor any idea of totality. Only a *complex* categorial theory can attempt to resonate to a *complex* and contingent ontology. And yet, even being very sophisticated, the Theory is yet open to *contingency* not only of new phenomena, but to revise and expand its own domains.

The Categories of Complex Realism will need to respond to dynamics and to stability, to higher level emergency from and apart its smaller units, to forms of assembling and disassembling of systems. The metametaphysical implication of the Turns and Directives saw the apostasy of commonplace modern assumptions and to mandatory reference to a particular religion/ideological creed. This means, modern metaphysics, built on anthropocentrism, bifurcation of nature, annihilation of agency, and all sorts of reductionisms, have no appeal nor power among us in our territory. We need something much more sophisticated to begin.

2.2 – Forerunners of the Category Theory

When one thinks about Category Theory in the Western philosophical spectrum, Aristotle and Kant immediately come to mind. It seems that Aristotle’s was the sole or the strongest in the Greco-Roman philosophy, and that Kant’s is modernized enough up to the point of us not needing them anymore – which is not the case. For now, we shall focus on Nicolai Hartmann’s work more closely, who sought this discipline to be the foremost of his *Prima*

Philosophia project. He is disappointed that, despite being such an important theme for its defenders and critics, he observes that “surprisingly little” progress has been made if we “consider the venerable age of the problem”.

He observes that the ancient Pythagoreans had a table of categories, which we might assume influenced the Greco-Roman world through Plato, Aristotle, Plotinus and Proclus. With “a few idiosyncratic Scholastics” in the middle, later we’d have Descartes, Leibniz, Kant and Hegel. In his contemporary age, he mentions Eduard von Hartmann and Hermann Cohen as well⁵. It is peculiar that he left the Stoics, Charles S. Peirce, and Alfred N. Whitehead out of this list. Peirce and the Stoics had very rich categorial theories of their own, which would merit future separate papers. However, Hartmann and Whitehead, writing powerful and enormous systems on their own literally at the same time (1920s up to late 1940s), never took in the works of one another⁶.

Both authors can be seen by Complex Realism as having different, but supplementary views about metaphysics. Whitehead’s *philosophy of organism* led him to be particularly attentive to what he called “genetic philosophy”. That means the study of genesis, the instauration of nexuses with subjective aims, their satisfaction, and the ideas of social orders in a realist (non-anthropocentric) way. He also established a “morphological philosophy”, which I particularly find somewhat lacking in complexity if compared to his genetic philosophy, since the focus on actual entities (or “monads”) is too unstable to understand higher-order objects, such as quarks, the Dutch East Indian Trading Company, or a single bee.

I have worked out this critique on my “A Case for the Primacy of the Ontological Principle” in 2019, where I differentiated between the **micro-ontological** from the **macro-ontological** approach. I was then sketching an “object-oriented philosophy” that could pair with OOO’s traditional claims, but also making some decisive advancements into the *corpuscular society*, the Whiteheadian unfinished theory of objects. I wrote:

“We argue here that the category of actual entities cannot be truly operable beyond the micro-ontological level, and that the category of

⁵ Quotes and references from Hartman, 2012, p. 323-324.

⁶ There have been some scholars that tried to bring Nicolai Hartmann and Alfred N. Whitehead closer together. The classical work of Jitendra Nath Mohanty tried to show how both authors might be understood as different forms of contemporary Platonism (Mohanty, 1957). Despite being very well written, the book does not seem to have awakened widespread interest in this comparative work. More recently, Jakub Dziadkowiec (2011) attempted to “processualize” Hartmann’s somewhat static ontology by using Whitehead’s metaphysics.

prehensions should not be taken as primary for a proper understanding of Whitehead's philosophy of organism in its macro-ontological purposes. By "macro" I mean a quark, a cup, a legal codex, the country of Cambodia, or any object in OOO's general terminology. This is to be distinguished from the micro-ontological level, which is the really intricate realm of a single withdrawing actual entity as the highest level of abstraction possible. Such an analysis dangerously borders the problem of vacuous actuality. As such, we will focus on the macro instead of the micro from now on, and will do so by stating and expanding our preference for the nexus as the beginning of the object-oriented philosophy we are sketching here" (Maciel, 2019, p. 331-332).

On the other hand, Nicolai Hartmann is a prime example of enormous complexity in detailing with the minuteness of all sorts of "morphological" philosophy. Few have taken the scholastic impetus of classification and extensive writing on almost all topics of philosophy as Hartmann did. He divides Being into two spheres, the Ideal and the Real. The difference is the relevance of Time for real ontology, whereas ideal ontology does not care about temporal beings (one plus one equals two yesterday or tomorrow? – it does not matter). In the Ideal, he places mathematical beings, logical entities, phenomenological essences and values/virtues. In the Real, he creates the very sophisticated dynamic system that, let us say, puts reality in a "centrifuge". By separating reality by strata of density and freedom, four real-ontological strata appear in the analysis which are irreducible to one another: the physical, the organic, the psychic, and the spiritual/sociocultural. He then details categorial laws for each stratum, a few meta-categorial laws (categorial laws about categories), and some interactions between the real strata and the ideal ontology. Were that not enough, he proceeds to write three massive volumes on Ethics, hundreds of pages on Aesthetics and much more.

However, perhaps fighting against the historicists and spiritualists of his time, Hartmann names the "genetic ontology" as a valid area of metaphysics, but does little to no effort to pursue it. His critics saw that as his obvious Achilles' heel, for even a high-school student nowadays could arrogantly state "yeah, but everything is socially constructed", claiming to have defeated Hartmann's Critical Realism. Nonetheless, the distinction between the Real and the Ideal resting on the relevance of process, individualization, and time, points out that he had lots of room to expand his already enormous system. The role of history and of the *Geist* is present in his works, but it is localized, stratified, allocated – instead of being presupposed as the ultimate skeleton key that would open anything (which is metaphysically impossible for Hartmann and for us).

2.3 – Speculative Realists and Categoreal Research

The (already) traditional names associated with Speculative Realism have not conducted Categoreal Research as we have here described. However, by taking an interest in how reality is, or how it is not; or how matter, knowledge, change, stability and so on can be thought, they have pushed the boundaries of traditional Category Theory. Instead of presupposing common-sensical ontologies, or by outsourcing it to science or to religion, they have rolled up their sleeves and tried very hard to describe what there is by using these special instauration tools for bridging between what there is and discursive reasoning (theoretical, mathematical, practical, artistic, or even scientific). When one instaures hyperchaos, objects, nature and processes as what enables this boundary-crossing between the ontological, the explicative, the organizational, the lures for feelings, we are in effect talking about categories, at least in our CR-approach.

If Speculative Realism is not a unified movement, it at least has had the great success of stimulating creativity towards complexity and contingency. The catalyst of the movement, Quentin Meillassoux's *Après la Finitude* (2006) gave us his diagnosis of correlationism (both weak and strong versions), as well as his own **Speculative Materialism**. It was truly a turning point for many of us, for everything became much clearer with the criticism of correlationism as a *category of explanation*. The way which most modern authors employ correlationist defective reasonings became so obvious that their previously attractive shines turned into frustration. Also, his kenotypes, the irruptive fulgurites, and his (f)actuality theories are constitutive elements in our Complex Realism, as one can see in Maciel 2021a (particularly Part I).

Meillassoux's greatest accomplishment for many of us is the "necessity of contingency" motto. Although Systems Theory has always dealt in the binomial "complexity and contingency", Luhmann's long love-affair with modernity crippled his ability to perceive modernity itself in terms of something necessarily contingent. Even if decolonial or post-colonial critique is not one of Meillassoux's aims, his theory surely can aid us over here in dislodging the self-secured arrogance of modernity seeing itself as "unavoidable"⁷. At the end, a dissatisfaction also came from Meillassoux' overemphasis on hyperchaos and on pure

⁷ For more information, see Maciel, 2021b, particularly Chapters 1-3 of Title I, where I explore possible connections between Meillassoux and post/decolonial movements, as well as doing a brief retrospective on Nicolai Hartmann's own critique of *correlativism* (I call attention to the similarity of the terms).

mathematical theory, which left many of us with a flavour that what Speculative Materialism was providing was just one more absolutizing theory.

However important and exciting Meillassoux's works are for us in CR, Speculative Materialism still has much to do. That is not a "defect" of the theory *per se*, for 15 years in philosophical time is indeed too early to say anything conclusive about his oeuvre. Despite that, we do not see how he could come to fill the gaps in terms of the Three Turns and Five Directives. We do not need to undertake a full evaluation of each of these to see that Meillassoux seems to sacrifice complexity in the altars of contingency. He resolves complexity by creating one single principle, or entity, or Big-X, that can do whatever, whenever and to whomsoever it wants. The obliteration of complexity is somewhat mitigated with his "primo- and deuteroabsolutory" distinction⁸, but it is not enough for the rest of the Turns and Directives. The virtual absence in his works of the metaphysical implications for socio-political humans and their environment yields null effect on the Second Turn heuristics. We surely understand his glaring aversion to "vitalism", but just pretending that organic, psychological and sociocultural strata of the reality are unimportant surely does not suffice. It lacks complexity in this regard. In terms of the Third Turn, the effect comes to be even retrograde, since his "*dieu à venir*" bit does not really capture any level of complexity of the religious-spiritual stratum of reality, repeating more of the same under the Abrahamic-monotheist paradigm. Despite that, his works continue to impress, to engage and to fascinate us.

Also in 2006, at first parallelly, Iain Hamilton Grant was working on his inspired book *Philosophies of Nature after Schelling*. Almost always being portrayed as someone who changed philosophical systems as one changes one's shirt, Grant's work has been masterful in showing that this is really not the case for Schelling. Among the German Idealists, Schelling has always been my personal favourite – not exactly because of his answers, rather than the *questions* he asks. His inquiries around the origins of subjectivity as a section inside a larger objectivity are very inspiring, particularly because for Schelling and Grant, this does not have anything to do with a strict anthropocentric or anthropomorphic concept of Reason or Absolute. Grant's works that congregate all sorts of *Naturphilosophen*, in a broader sense, have brought him closer to idealism, which does not mean human ideals, but ideals of pure productivity of nature and complexity.

⁸ Cf. Meillassoux, 2016, p. 156-157 and ss.

In terms of the Turns and Directives, Grant and his allied *Naturphilosophen* seem much more well-equipped to prosper as best as they can in a CR-territory. Regarding the First Turn, these philosophers ironically seem more willing to forego Kant's "Copernican Revolution" than Meillassoux does. Further, their proximity with Second Turn-themes is clear, as seen in Grant's interactions with the new materialisms in political themes, particularly environmental studies and feminist theories. In terms of Third Turn, Grant does not seem too committed to the monotheist deity that is indeed very crucial for Schelling, which can make him more of an ally of the plural-theologian inhabitants of the CR-territory, at least from a superficial glance. His rejection of metaphysical monism is surely one important good sign, particularly when he avoids talking about nature as "The Nature", one single entity with one single force, and so on.

There is one particular pebble in my shoe that always makes me tread uneasily regarding this kind of philosophy. Grant's unwillingness that sometimes borders on *disdain* for corporeal or individual objects (which he dubs as his critique of "somatism") led us directly to Graham Harman. Also, the plurality of modes of existence in terms of *ontological* modes, not just *anthropological* modes, also highlights our discomfort with any "nature-only", or "forces-only" kinds of philosophy. Unending processes and fluxes do not do justice to the formal and existential finitude of any object/body/system, such as a human person, the Earth herself, or even one single fruit – for *finitude* is a troublesome blind spot for these sorts of theories. Dealing with objects, bodies and systems merely as second-hand realities drives that kind of reasoning straight into undermining, overmining and duominating strategies tirelessly criticised by Harman. To reduce objects to their parts, to claim they are merely a sum of effects and/or relations, or both, does not do justice to the autonomous existence of things that are under no obligation to *be for us*. Even less, they are not obligated to make sense for us. Not only by highlight these criticisms, **Object-Oriented Ontologies** have had a tremendous success pushing the transdisciplinary borders on their own, with examples reaching from archaeology to biology, from architecture to social systems theory.

Had we more time and space here, we would do the honour to Harman as he did to Latour, and try to conceive of a "hyperbolic critique", as if OOO would come to be, in 20 years or so, the dominant philosophy of all departments. His aim with this sort of critique is to show that, if the target author or movement would be omnipresent, what would be missing, or what would be exaggerated. This will have to wait a future paper on the subject, but after some years following Harman's works, I suspect he himself is dealing with many important topics that are

not yet fully explored in OOO texts. The position of “natural” sciences, the existence of social systems such as the Economy or Law, the reduction of everything to the “object” category, the methods for dealing with *eidōs* and essences and other more abstract terms, more of the sociological applications of OOO – all these and so many more are future areas which I believe Harman still has much to write about, and I am anxious to see where it all goes.

2.4 – How to build a Category Theory for Complex Realism

The first sketch of a CR-Category Theory was presented on the Title II of my PhD Thesis “First Outline of a Treatise on Metametaphysics: Introduction to Complex Realism”, defended in 2021. At that time, battling departmental deadlines and schedules, I opted for making brief remarks on defining operatively some terms, such as intelligence, process, lures for feelings; as well areas of philosophical researches (ontology, gnoseology, cosmology, etc.). I stated these operative definitions had just that purpose – that is, to instaurate operations. They obviously did not intend to exhaust each of those terms. After that, somewhat bluntly, I presented a Categorical Matrix by listing and elaborating on each of them in a concise and non-exhaustive manner.

For illustrative purposes-only, the Category Matrix looked something like this⁹:

Categoreal Number	Operative and Intuitive Basic Denomination	Important Figures for the conception of the Category
1 壹 (yī)	Complex Creativity	Whitehead, Luhmann, Proclus, von Foerster, Stengers, [N.] Hartmann
2 貳 (èr)	Monad / Actual Entity / Actant	Leibniz, Tarde, Whitehead, Latour
3 參 (sān)	Form / Difference / Contrast	Spencer-Brown, Luhmann, Derrida, Platão, Whitehead

⁹ This table was presented at Maciel, 2023, p. 144-145 in Portuguese – here translated into English. For more information on how this table was constructed, check Title II of Maciel 2021b.

4 肆 (sì)	Prehension /Hormé /Transcendent Acts	Chrysippus, Hartmann, Whitehead, Haraway
5 伍 (wǔ)	Nexus / Network / Coupling / Association	Whitehead, Latour, Haraway
6 陸 (lù)	Object / Body / System	Graham Harman, Luhmann, Chrysippus, Aristotle
7 柒 (qī)	Kenotype / Indexical / Symbol / Reference / Communication	Meillassoux, Bensusan, Whitehead, Putnam, Luhmann
8 捌 (bā)	Metamorphosis / Occurrence / Event	Latour, Bensusan, Badiou, Aristotle
9 玖 (jiǔ)	Chaos / Chaosmos / Hyperchaos	Meillassoux, Boutroux, Hume

Today, instead of explaining each one of these terms, we shall take a different approach. First, a step back and show how this Categorical Matrix was conceived and designed – or any other that also might be CR-inspired, since ours makes no claim of being the only one possible that is necessarily to be applied in all cases.

First of all, we had an Aristotelian *υπάρχειν*-oriented way of category-building; and a Kantian transcendental-like take of what enables thought and experience. With Hartmann we have spheres of being (ideal, real), moments of being (*Dasein*, *Sosein*), the stratification of reality (physic, organic, psychic and spiritual), and metacategorical laws (categorical forms of organizing categories). From Whitehead we get eight categories of existence, twenty-seven categories of explanation, eight categorical obligations and a “ultimate” category. From Latour and Luhmann we get a very rich grammar of categorical terms, such as actant, actor-network, fifteen modes of existence, functional differentiation, autopoiesis, double-sided forms, tight and loose structural couplings, and many specific social systems.

The overlapping of terms, interests and even philosophical concepts are not enough to build a system, a structure, or a matrix. However, this is merely the first step towards CR-philosophies. Whitehead states clearly that “system is important. It is necessary for the handling, for the utilization, and for the criticism of the thoughts which throng into our experience”, However, “before the work of systematization commences, there is a previous task

– a very necessary task if we are to avoid the narrowness inherent in all finite systems”. He attributes this narrowness to the putting aside notions, principles, tasks and directions arbitrarily to make it all fit into one totalization attempt. That results not only in a system that is inherently flawed, but a system that finds its faults in reality itself, not in the system’s own decisions¹⁰. So, what does it mean to start by assemblage and not by systematization? I have written elsewhere that:

“It does not only mean a non-dogmatic for our reasoning, but also that philosophy does not invent its own material. First and second order observations are already done. Experiences are already happening. The world is already admitting an infinity of novelties whilst I type this sentence. Philosophy does not need to pull itself out of the void, to invent itself *ex nihilo*. There is no metaphysical Baron of Münchhausen pulling himself by his hair to birth a self-referent and cognitively closed beginning for philosophy. Each and every philosophy, from any and all collectives, start from the factory floor of the world: communication and quotidian, theoretical imagination, and reflective questionings already existent” (Maciel, 2021b, p. 201, translations mine).

Whitehead observes that great metaphysical systems exist, but few of them have made assemblage one of its enduring qualities. The system-building is paired with a never-ending process of renewal with new experiences and new theories which can, and even do, reform the system. He names Plato, Aristotle, Gottfried Leibniz and William James as the great systematic philosophers that were also notoriously assemblage-oriented¹¹. This connects to *Process and Reality*, in which Whitehead describes the speculative philosophical method. There, he claims it has a rational side, made up from logic and coherence; and an empirical side, which arises from terms like “applicable” and “adequate”¹². As far as logic goes, Whitehead is not finicky about *which* logic to use, seeming to prefer some ordinary usages on argument construction such as inferences, lack of contradiction, logical consistency, and so forth.

Now, I have proposed on two occasions that the other three elements might be systematized together in what I suggested as an **Analogist Method for Experimental**

¹⁰ Quotes in Whitehead, 1938, p. 1-2.

¹¹ Whitehead, 1938, p. 2-3.

¹² Whitehead, 1978, p. 3-4.

Metaphysics. At the first occasion, I was analysing Whitehead’s philosophy with Philippe Descola’s four anthropological dispositions towards nature, from whence came the term “analogism” in the manner we use¹³. It means that both interiority and exteriority are constituted by differences, which are simply defined in a paradoxical way such as: a difference is the difference between it and its surroundings. Approximations (or “analogies”) are indeed feasible and encouraged, but the procedures and careful elaboration is what distinguishes this disposition from those that assume universals from within (the “same” interiority) or from outside (the “same” world-spirit). The *second* occasion was when I described a methodological approach to Complex Realism that attempted to create coherence between strategies and a specific rhythm of observations and instauration of variables:

“We finally arrive at the analogical method, or *analogist*. It is a philosophical method that combines observational strategies for difference description, experiences with complexes of physical and conceptual feelings, imaginative generalization and a coupling between coherence, adequation and adaptation. This is intertwined with the assemblage of maximally general givenness, phenomenologically described in terms of its essences, categories and principles; with the anabatic attempts to formulate *ex posteriori* universals that, when they reach certain stability, might be contrasted, compared, differentiated, brought together or taken apart through aporetic and theoretical manners” (Maciel, 2021b, p. 235, translations mine)¹⁴.

Now, I would like to delve a little more into the importance of **coherence**. If we conceive of a Categorical Theory that attempts to build or to stabilize coherence among its internal terms for the sake for both the rational and the empirical side of speculative philosophy, it is indeed something paramount. However, it seems that epistemologies and metaphysics that prize coherence usually do so through two main strategies. It abolishes the “real world”, to use Nietzsche’s terms, claiming that the model needs to stand on its own terms – and *that* is enough. Internal coherence would be enough for many. Another approach is to conceive of stable

¹³ See Maciel, 2022, p. 114 and ss. Despite being published in 2022, the work was written between 2017 and 2018.

¹⁴ Naturally, these particular methods are detailed on the work, but a few notes might be helpful. The anabatic method that goes from the experience to the attempt to see the Eidos of things is common in Plato’s works, particularly the Republic, and on many neo-Platonic authors. Regarding the “*ex posteriori*”, we shall detail it a little more in the coming sessions.

universals that are, or point to some sort of static totality, even if it is about a pre-established rhythm of nature or of a God or a cosmos.

We reject both ideas. In Whitehead's terms, they begin from *system*, not from *assemblage* – and even if they would claim otherwise, the indifference towards complexity and contingency is evident when they try to sweep under the rug any exceptions or explain away counterexamples. He observes that “it is a temptation for philosophers that they should weave a fairy tale of the adjustment of factors; and then as an appendix introduce the notion of frustration, as a secondary aspect”, relating this to the monist systems of the 19th century, as well to the “great Spinoza”¹⁵. He also states that “there is no reason to hold that confusion is less fundamental than is order”, since “our task is to evolve a general concept which allows room for both; and which also suggest the path for the enlargement of our penetration”¹⁶. To conceive of what there is as complex contingency and plurality of modes of existence, pairs greatly with Whitehead's teachings, for whom “philosophy shrinks its task when it summarily dismisses one side of the dilemma [order/disorder; unity/plurality]. We can never fully understand. But we increase our penetration”¹⁷.

Coherence, when taken as an important value for a wild ontology, turns into something very different. First of all, it does not need to “look like” its object. Think of how a map, a bunch of lines and symbols, does not “resemble” a snowy mountain. Nor the map is “made of” mountain-ness or snow-ness – nor the contrary, the snow is not “made of” symbolic dances and rituals around the snow. These observations, inspired by Latour's¹⁸, helps us to illustrate that a Category Theory for complexity and contingency that does not takes totalization as one of its goals, still, it does not need to be disorderly or chaotic on its own turn. To be coherent with such a universe will obviously require something much more sophisticated than a mere table of categories; but it also cannot rely itself on random post-modernist babbling for “anything goes”.

We might speculate as to why Category Theory is still so unexplored, as Hartmann himself observed before. It has been a long hard road to get out of constrictive worldviews that suppressed differences from their purposed totalities, be them religious, ideological, political,

¹⁵Whitehead, 1938, p. 50.

¹⁶ Whitehead, 1938, p. 50-51.

¹⁷ Whitehead, 1938, p. 51.

¹⁸ See Latour, 2013, Chapter 3, when he discusses the Mount Aiguille vs. the map for hiking up to it.

or otherwise. There are many reasons for underdevelopment – and we shall detail them here a little longer with the help of Hartmann’s paper “How is a Critical Ontology possible?”, first published in 1923.

We might already anticipate two points. First, we shall see how to build a categorical philosophy that, despite being very complex and wide, it is far from totalizing. Second, categories are not concepts. This is a little harder to understand why, since Hegelians, Deleuzians and “linguistic-turn” believers still walk among us. Despite that, by the end, we shall see more clearly how our Category Theory might be highly instructive for assemblage and systems-building, providing a vast range of prediction, explanation, descriptive and prescriptive possibilities.

2.5 – Why is Category Theory so underdeveloped?

In Hartmann’s text of 1923, he stated that its task is to reanimate metaphysics by reworking it into a *Prima Philosophia* that congregates many general and specific areas of philosophical research by having **Categoreal Analysis** as its main organizational and exploratory tool. However, that article was just the beginning, and we were thousands of pages behind the actual crafting of his extremely detailed system (built between that year up to 1950, still with so many unfinished topics). Despite it being very fascinating, we are here interested on his questions on why this area has been so underdeveloped, and he goes to great lengths to build a Category Theory by analysing eleven mistakes that have decisively hindered the development of this discipline.

Hartmann is very innovative in this paper for a 1923 famous German professor, writing that metaphysics needs to be about what there is, not just about *human* reality. He claims that metaphysics has faced troubling difficulties since most of its recent authors employ prestidigitator tricks to hide up metaphysical flaws – which otherwise would state explicitly their commitment not to rigorous research, but to ideological, religious or political prejudices. Or even, many of these authors repeat common mistakes unknowingly – which are traditionally transmitted through generations of philosophers.

Previously, in his 1921 book, Hartmann presented his basic theory that if knowledge **is** something, it **is** part of *what-there-is*, a section of metaphysics. That is to say, knowledge has a metaphysical feature – just as everything else. He then proceeds to work his theory on the spheres of being, moments of being, and a beginning of the stratification of reality

theory. For now, it suffices for us his instructive distinction between *intentio recta* and *intentio obliqua*¹⁹. The first is the consciousness towards something, as it is its natural or common feature, to be *about* something other than itself. The second is the consciousness bending in over itself, trying to consciously grasp what consciousness is. Despite this being an important procedure, very few philosophers actually succeed here, and Hartmann seems to recognize only Kant and Husserl on this regard. Be that as it may, the *intentio recta* is the basis for all transcendent acts, which can be thought as a little arrow which goes from the observer towards something else. These acts might be attempts to know something (real, ideal, abstract, natural, conceptual or otherwise, it does not matter at this point), or try to relate emotionally to something, such as love, hope, fear and other kinds of affective expectations.

The basic operative structure of transcendent acts, one of these being the *cognitive* transcendent acts, means that knowledge is *about* something, not being primarily built on what knowledge is in and for itself. The exaggeration of the *intentio obliqua* by neo-Kantians led them to believe that epistemology was separated from ontology by some sort of “unsurpassable abyss”, creating very complex systems of what knowledge is while forgetting the simple fact that epistemology is a part of ontology, even if not about its totality²⁰. By reflecting more on why people really believe this, Hartmann tracks this (one hundred years back in 1923) to many prejudices regarding knowledge in general, and regarding categories, in specific. The basic misunderstanding might be named **apriorism**:

“The misunderstanding, however, is rooted more deeply. Apriorism has fostered it. This ‘fostering’ consists in a misunderstanding of the a priori itself. It has been repeated *ad nauseam* since Kant that a priori knowledge is possible only where the object of knowledge is a mere appearance; one could at least not know anything a priori about something existing in itself. In this case the object would be represented even before its being given and independently of its being given. Its essence would have to be one with that of the representation, putting to rest its claim to be an entity existing independently of the representation. Anyone who reasons this way does not even see the problem of knowledge” (Hartmann, 2012, p. 316-317).

¹⁹ Hartmann, 1949, section 3D.

²⁰ See the discussion about trans-objectivity and trans-objectivity we did in §2.1 to clarify that ontology does not need to be entirely knowable, and that what we do know, we know *about* what there is.

In summation, *a priori* does not imply “to be separated by an abyss” regarding its the ontological reference. Inspired by Bensusan, we might say that all transcendent acts, including cognitive ones, have an indexical nature: it is *about* something, *around* something, *over*, something *here* or *there*, etc.²¹ The misunderstanding of apriorism might be chalked up to the misappropriation of Aristotle’s works, which were sequestered from their Pagan circumstances and compelled to defend a monotheistic and totalizing metaphysical approach. Even so, when it did not function so well, its “inconsistencies” were filled by foreign religious dogmas outside from Aristotle’s own tradition. This led to the long-held belief that the world created by the monotheists’ deity is “made of” logic. Since their god is portrayed as being the Word, the *Logos*, then, His creation would be “made of” words, *of* concepts, *of* logical terms. It didn’t take long for metaphysics to become entrapped into the religious-ideological claim that it should be about a “pure science of conceptual reason”, and then ontology was stuffed inside this or that particular theology, giving rise to the “ontotheological” approach on what there is.

Again, the problem is not this or that religion, but that this approach has not flourished on its own while also admitting other approaches. The virtual extermination of the Pagan worlds and philosophies in the “Western” spectrum led to the vitiated belief that the created world is weirdly static, for its dynamics are, actually, deployments of the ‘same’ eternal laws created by that deity. Thus, “if the real lies in the eternal forms, then the central question of ontology is the question of the conceptual grasp of the forms. If concept and form of being are identical, then this grasp is guaranteed—through logic”²². Being this a purely a priori discipline, it finally was transformed into the common sense among so many of these traditions; that ontology and logic are “the same”. If their God, the *Logos* Himself, created everything, there is no space for contingency, for anything a-logical, for anything to be on its own outside that ideological pre-determination. This arbitrary imposition needs to be philosophized away, and an act of apostasy is not enough. This being said, one can see many “atheist” or “agnostic” philosophers, or even Global ones that come from their own complex traditions, still functioning under this false assumptive paradigm as a consequence of the widespread domination of modernity through colonization and globalization.

For Hartmann, the “Old Ontology” conflates structures of real beings with the structures of real beings. Local juxtapositions are valid and important, but the totalization is not

²¹ For more about the indexicality of realism, see Bensusan, 2021 and Bensusan, 2018.

²² Hartmann, 2012, p. 319.

warranted. Cognitive beings attempt to see how an indifferent real world towards-us (at first) functions with order and chaos without any reference to our capabilities or our ideologies. Cognitive beings also investigate how ideal beings function indifferent to the real, to the temporal. However, these beings are weak and not even commonly perceived when they do not ingress concrescence processes *in* the real. That means some things in reality are cognizable, *but not everything* – and even less of these are cognizable *a priori*. Unbeknownst to it, the “Old Ontology” does not function like that, and has “established itself on the soil of an absolute apriorism at just this point; in its structures thinking immediately reveals the structure of the real. This standpoint is the root of all evil, it is radically false”²³.

The “New Ontology” Hartmann wants to build, an important part of our Complex Realism, states clearly that to the real sphere of beings there lacks no forms, nor to the ideal sphere of beings, there lacks no matter²⁴. For Hartmann, the *Prima Philosophia*’s task is to conceive, to determine, and to describe the real, the ideal and the cognoscitive spheres, as well as the relations between them. This redefinition helps us to study not only the ontological and cosmological aspects of the world, but also ethical and aesthetical values. This must be advanced rigorously through all disciplines functioning under this orientation – which means that legal categories, scientific categories, artistic categories, and so on, are also regional elaborations on the Category Theory, being the chief effort of the integrative dimension of Complex Realism. The noticeable experimental feature of this Categorical Theory is an “open-ended circle” that if it hints at a totality, it is an “open totality of overlapping partial tasks”²⁵, not a closed metaphysical system neither from the start, nor as its purposed terminus which is metaphysically unattainable.

In the Greco-Roman world, categories were a big deal, be them from the Pythagoreans, Platonists, Aristotelians, and Stoics, up to the highly developed categorical systems of Plotinus and Proclus. After that, it was relegated as a mere auxiliary tool for some theological endeavours alien to their original sources. Millennia later, Descartes and Leibniz had some contribution, but it was only with Kant and Hegel that the subject became important once again, in Hartmann’s analysis. He celebrates these four in their proper understanding that the Category Theory is a trans-historical problem, and not mere historically situated attempts.

²³ Hartmann, 2012, p. 321.

²⁴ Hartmann, 2012, p. 321.

²⁵ Hartmann, 2012, p. 322. See Bensusan 2011, for his “Überrealism” is remarkably close to this task.

Despite that, he feels that their systems were established on a too-narrow basis, with too restrictive goals and methods²⁶. Out of these, he claims Hegel's attempt was the most developed attempt to provide a Category Theory so sophisticated it would be self-moving, one of the main tasks of his *Science of Logic*. Despite that, Hartmann observes:

“Hegel is the first who outlined a system of categories on a grand scale and elaborated laws concerning their relations to one another. The law of the system, however, is taken from the ‘Idea of a system’ [*Systemidee*], rather than from the essence of the categories themselves. The unifying, deductive dialectic does violence to the phenomena” (Hartmann, 2012, p. 324).

He finally delineates the three tasks of **Categoreal Analysis**:

“The *first* pertains to the aforementioned detection of the sources of error in all previous theories of categories, where the investigation must proceed purely systematically and call upon historical evidence only for testimony and illustrations. It concerns errors that are not only important to us because they are historical, but also because they are our own. A *second* aspect of categorial analysis is concerned with the characteristics of the very problem spheres for which the categories are valid. It is assumed that the categories need not originally belong to any of these spheres, and that for each individual category it remains an open question to what extent and with which structural changes it is valid for one or another sphere. *Thirdly*, an attempt has to be made to work out the highest principles of the stratification of categories (which may be considered categorial laws), and concurrently with them the methodological guidelines for their investigation” (Hartmann, 2012, p. 325, italics are mine).

For the purposes of this 1923 text, and our current paper, we shall focus only on the *first* of these tasks. A properly meticulous elaboration would take a whole new work.

²⁶ See Hartmann, 2012, p. 323-324.

3 – Removing erroneous procedures for researching into Category Theory²⁷

Hartmann will take more than thirty pages to describe each of the eleven mistakes he wants us to avoid while conducting our categorical research. I will not go into that level of detail for editorial purposes here, but each of them has a long history and many peculiarities. It suffices here to say that the names of each of the errors are just for reference-fixing, as the person who is most closely related to each of these errors in the Western philosophical spectrum (however, other philosophical spectrums might see these errors or similar ones as well). It must not be interpreted as this philosopher's "fault", but that they better represent a trans-historical problem of thinking categories, not a subjectivist mistake done by this or that thinker personally. I have organized Hartmann's list here into three clusters for a better philosophical cartography.

3.1 – First Cluster

First, we have the **Error of Total Identity** [*Fehler der totalen Identität*]. This is the tempting totalization through simplicity: Thought and Being are the same. It states that the objective is the subjective, that the rational is the real. The ancient Eleatic philosophers gave an emphasis on the objective and the real, whereas German idealists usually give emphasis on the subjective and the rational. However, Hartmann states that these theories have nothing to offer to science and epistemology. If knowledge is a transcendent act towards something other than itself, then these theories have only tautologies to work with. They are built on a false cognitive relation designed to dodge the risk of complexity and contingency²⁸. We do not cancel [*aufheben*] the risk of the world by collapsing knowledge into nothingness or into tautology – this strategy actually avoids knowledge altogether, which is much reckless than carefully embracing complexity.

A lessened form comes from the **Error of Homogeneity** [*Fehler der Homogenität*] that claims not a total identity, but an identity on "what matters", which ironically are the perfect Forms. The ancient Platonists claimed that there was a homogeneity between the way something partakes in its perfect Form, and the Form itself. This was not at all justified, just appealed to by homonymy. In this traditional approach, the Beauty itself is "more beautiful"

²⁷ This section of the paper is a shorter presentation than then one given at my PhD thesis, specifically Chapter 2 of Title IV in Maciel, 2021b.

²⁸ Hartmann, 2012, p. 340.

than particular beautiful things, but we could recognize this because the Form and its instantiation would be “made of” the same things, or similar things, or they would be like a mirror trying to reflect parts of the Beauty itself. Hartmann observes that Plato himself was not a particular adherent to this thesis. He reminds us of the *Parmenides* and the *Timaeus* dialogues, wherein Plato brought to us the συμπλοκή (“*symplokē*”) theory, that a Form is not defined in isolation, but in a “community of Forms”. Even so, this error is based on “the fact that a condition need not at all resemble the conditioned is not grasped, and furthermore, it is not understood that it must necessarily not resemble the conditioned if it is to explain anything at all”.²⁹

This gives us an important direction for Category Theory. The relation between a categorial principle and its *concretum* does not need to presuppose that the ideal or the real needs to be “similar” one another. The map of Mount Aiguille is made of paper, ink and symbols – it is not “made of” Mount-Aiguille-ness. Hartmann concludes that:

“Generally speaking, in order to be a principle of phenomena at all, categories need not be posited as being the same in principle as the *concretum* which rests on them. Just as their mode of being is different in kind from that of the phenomena (and Plato saw this clearly), their structural constitution must also be different. Only by setting aside the old postulate of homogeneity will the path be cleared for fruitful research into the categories. Only categorial analysis, however, can in each case make out what the positive substantive [*inhaltliche*] relation between principle and *concretum* is” (Hartmann, 2012, p. 327).

This brings us back again to the apriorism problem. It was generalized after the Platonic homonymy theory entered the **Error of Formality and Conceptuality** [*Fehler der Formalität und der Begrifflichkeit*]. This was particularly highlighted as the common-ground of the Scholastics’ appropriation of Aristotle. Given by the creator deity, the Form was made into a synonym for the particular thing’s form, its finality, its given purpose, its destiny, and so forth. The progressive identification of form, *eidos*, essence, purpose, Creation and so many other terms “is the root of the attitude that has held ontology in the chains of logic for so long, as well as made ontology and logic ambiguous”³⁰. This was coupled with the progressive “expulsion of the body” from the philosophy, as Nietzsche puts it, since the complexities and

²⁹ Hartmann, 2012, p. 327.

³⁰ Hartmann, 2012, p. 330.

contingencies of the material world were not only philosophically irrelevant or mere nuisances, they were pathways into the *sinful* and as such should be actively avoided.

For Hartmann, this error made its way into modernity well unto Kant and Hegel. Despite the Kantian propaganda of unification between rationalism and empiricism, the method is metaphysically the same as this Error. All the emphasis is laid on the formal, conceptual, logical aspect of reality. Even if the thing-in-itself is an important part of the argument, everything hinges on the logical. For Kant, “categories are concepts, ‘pure concepts of the understanding,’ and Kant does not know how to think of them in any other way. In this, he is a pure Aristotelian, no less so than the ontologists of the old school”³¹. Things only get worst in Hegel: “The greatest triumph of Aristotelianism is celebrated in Hegel’s *Logic*, where the dialectic of concepts straightaway claims to be a dialectic of being, of the world, of nature, of spirit, i.e., to be absolutely all inclusive”³². This is particularly explicit in the Hegelian doctrine that nature has a conceptual scheme, equalizing principle, form and concept as manifestations of the Absolute.

There are two prices to be paid for us to exercise our apostasy regarding this Error and move away. **The first price is to deny that categories are concepts.** Hartmann writes:

“First, the proposal that categories are in principle different from conceptual categories must be accepted. Concepts are generally only attempts at comprehension, something completely post hoc and secondary, and even when the conceptual grasp is adequate, the concept is still not the thing grasped. Usually, however, it is inadequate. The fact that there is a history of conceptual categories proves this, that is, it shows that there is a process that in the most favourable circumstances is a progressive process of adequation—while that which is to be grasped, the category itself, remains inalterable beyond all history of concepts. Categories exist in themselves, independently of all conceptual grasping and indifferent to it, and they determine the concrete entities joined to them according to their own immutable lawfulness” (Hartmann, 2012, p. 331).

This “immutable lawfulness” bit might not be as straightforward as one might think. Seeing here that we might try to use concepts to understand categories, what we have here is a

³¹ Hartmann, 2012, p. 331.

³² Hartmann, 2012, p. 331.

double-limitation of theory, practice and philosophy³³. Hartmann predates OOO in his claim that the thing-in-itself is just as important as the theories one might build, reworked as being-in-itself (OOO: “real objects”). However, Hartmann adds this *second* limitation, which is not only in front of the being-in-itself, but also to the categories in themselves. Learning how to use, how to grasp, how to employ categories demands a whole new training. For example, Hartmann considers space as a category of the physical and the organic strata – however learning how to work space with each kind of existent is a proper topic to be developed on itself. Is the space Euclidean, Riemannian or something like a Calabi-Yau manifold? Is the internal space of an embryo (the coelom) being well developed or are there gestational troubles? All this makes categories ingress each and every one of these cases, while also retaining a metaphysical generality on themselves that can be properly studied by Category Theory.

These observations lead us to stress how crucial it is to separate between the *function* that categories have on transcendent acts (such as knowledge), and the *categories themselves*. Hartmann states that “they are just as independent of concepts as are laws of nature. Their being grasped in concepts first begins with their discovery in epistemology, but their function apparently precedes this discovery”³⁴. For example, the category of autopoiesis precedes the discovery by Maturana and Varela. Life was able to generate its own operative structures before it was given a name. The confusion between the discovery of categories and their actual functioning amounts to ridiculous notions that Maturana and Varela “invented” autopoiesis, or that Newton “invented” gravity, or that Darwin “invented” evolution, etc. Again, ontology does not need to be *known* in order to *be* – its existence is indifferent to being investigated by any beings whatsoever.

The **second price** to be paid for apostasy from this error (and I’d state, from this first cluster as a whole), is to abandon the vulgar Platonism associated with modern idealism, which puts the crucial emphasis on Categories as “ideas” or “forms” which would be hierarchically superior to the rest of existence. Hartmann writes:

“Categories that contain nothing substrate-like [*Substrathaftes*] (nothing which cannot be reduced to form, law, or relation) will never be in a position to ground the entities [*Gebilde*] whose principles they are in their total concreteness, since these entities do contain a

³³ See Maciel, 2021b, pp. xx, 231, 481 and 485.

³⁴ Hartmann, 2012, p. 331.

substrate. We can only escape the tiresome dualism of form and matter once and for all if we incorporate the material factor into the principles. There is absolutely no other way” (Hartmann, 2012, p. 331-332).

This helps to elucidate a mysterious sentence we mentioned before, that “in the real there lacks no forms, in the ideal there lacks no matter”. The point is exactly to **conceive form and matter not as concepts**, as things, as objects – **but as categories**. For the form of a communicational system, such as Law, its matter is what it aggregates out of existence that might be turned into elements (such as the legal description of an event in the world). From this event, some will become elements able to ingress into the Legal System. For example, in a car accident, the speed of the vehicle, if the driver was under the influence, or if he had valid papers are *matters* for the *form* of Law. Out of this same event, the driver’s preference on Italian or Chinese food will not *matter* to the form of Law. This means matter and form are system-oriented, object-oriented, complex-oriented – which guides its ponderations of importance. They are not obligatorily “made of” atoms; nor “made of” empty contemplations.

In this case, we can clearly see the “*Substratmomente*”, the moments in which the category and the events meet in a specific substratum to give rise to matter and form. In the physic stratum this is relatively easy to see, such as categories of time and space. There is no dichotomy between matter and form here. Now, to generalize this understanding that categories need to provide principles for something real or ideal (a “substratum”, an “instantiation”, a “specific occurrence”, dealer’s choice on the nomenclature here), Hartmann writes:

“For our present purposes, the insight will suffice that restriction to formal elements does not lie in the essence of the categories in any case, and that it has been arbitrarily introduced into the theory of categories based on purely speculative motives. It is immediately apparent that with the sacrifice of this prejudice an abundance of artificial aporias falls away that has unjustly blocked the path toward a theory of principles. The most incurable misunderstandings have always found sustenance in the apparent opposition between matter and the formal essence of principles” (Hartmann, 2012, p. 332).

To make this very clear, we finish this first cluster with the **Error of Chorismos** (χωρισμός). This is traditionally diagnosed by Aristotle when he was attacking the Platonic Academy (most likely not Plato himself, but his successors). His main objection was that these scholars placed Ideas or Forms in a χωρισμός, “separated” from the concrete. They would be

set in a “celestial place”, ontologically and epistemologically separated from the mundane. Hartmann observes that Plato himself does not seem to be fully committed to this strict χωρισμός, creating in the dialogue *Parmenides* a veritable cascade of Forms, Forms of Forms, and so forth, to try to connect the mundane to the “celestial place”³⁵. Notwithstanding, the abysm-like separation seems to be what became canonical in the Platonist traditions.

As we just saw, Hartmann insists that categories must be categories *of things*, *about* concretes, *regarding* substrata. This might become clearer by comparing this move to Aristotle’s one of claiming that he Forms are *in re*, “inside” the substances. The categories are not “located” entirely on the things, in an Aristotelian sense, but they need to be indexicalized towards concretes – otherwise they are categories of anything at all. Conversely, they have their own dynamics, their own laws among themselves, some overlapping and some categorial breaks between them. More specifically, they animate and are exercised by the domains they instaurate. For example, the domain of entities that are autopoietic is animated and exercises the category of autopoiesis (living beings, psychic and social systems as well). Hartmann writes:

“What is required for the problem of the categories is a mode of being for its principles that makes them by their nature immanent to the whole range of their legitimate domain [*Geltungsgebiet*]. Or conversely, the world of things for which the principles are valid must for its part somehow be immanent to the sphere of the principles, for instance, proceed from them or be supported by them” (Hartmann, 2012, p. 328).

As it might be assumed at this point, Hartmann opts for both, following Plato and even Leibniz on this regard. He claims that Plato’s own *symploké* theory is a vivid example regarding the non-absolute separation between the Forms themselves, the “Community of Forms” philosopheme. For example, Beauty and Justice are different forms, irreducible one to another – however, Beauty can be fair, and Justice might be beautiful. These combinations would only maximize the “Good”, that is, the proper flourishing and healthy deployment of each Form (also between the Forms themselves). Regarding Leibniz, the point is not just the community between the Forms, but the proper integration of them as the animation of bodies. The notions of monadic levels and strata, also of the deployment of a monad’s own quality

³⁵ Hartmann ironically observes how Kant retakes this gesture by placing the categories not in the transcendent exterior reality, but inside the “celestial place” of the “transcendental subject” (Hartmann, 2012, p. 328).

quanta come close to this principle-concretum relation. If these terms are too abstract, one might apply this relation to functional approximations, such as between the genetic and the phenotypic; or the software and the interface programmes, and so on.

3.2 – *Second Cluster*

The second cluster starts with the **Error of the Systematic Monism** [*Fehler des systematischen Monismus*]. What is characteristic here is the organizational scheme that ends up with a pyramidal aspect, or a “gravitational centre”, or something of this sort. At the top of the pyramid, or at the centre of the system, there is a “principle of principles”, which would provide order to the other (sub)principles and their applications. It states that “that there can be a unity of the system only by virtue of the comprehensive dependence of the members on a central point”³⁶. This is different from the last cluster, since there is no obligation of it being a logical-conceptual unity or principle.

This form of reasoning can be typically traced to Plotinus and the appropriations of Neoplatonism by many Pagan and Abrahamic scholars. The “One” philosopheme pairs particularly well with these last scholars, and they are not shy to employ it to describe their deity as something that grounds all existence, something beyond contradiction and opposition, a superior principle of an unconditioned self-sustaining force. Plotinus uses this as the hypostatisation of a work-hypothesis, a pure postulate for a methodological issue – be that as it may, it has notwithstanding made its way into the Western philosophical spectrum by his works.

This Error is actually very malleable, being recombining with virtually any strand of philosophical reasoning. The “One” itself needs not to exhibit this or that particular feature – so the systematic monisms built from it might say that “everything is purely rational” or even “everything is purely irrational”. Hartmann brings many examples to show how the abandonment of this Error has led many sciences to make significant strides towards more complexity. Instead of assuming a “peak” or a “centre” of an arbitrarily conceived system of reality, the forms of knowledge that embraced pluralism and effectuated an apostasy from monism have become truly fascinating.

From the study of the **physical** stratum, many theories have battled as to who was correct in claiming X was the centre of the universe, be it Earth, the primordial Fire, Sun, or

³⁶ Hartmann, 2012, p. 345.

even the Sirius star. Nowadays, astronomy is very comfortable in working with a completely acentric and plural universe. In **biology**, a unifying principle of principles was sought in the blood, in the pineal gland, in the liver, or the brain. It took a long time to forsake these false starts and see “that there is only the system of organs instead (which is a system of systems), and furthermore its own system of processes, functions, interconnections, dependencies, and so on”³⁷. Another more contemporary example is also possible: Niklas Luhmann conceives of his systems theory not as a theory of the “whole” of **society**, but something like a stratum of reality “made of” communication that, through functional differentiation and evolution, sees the rise of a plurality of systems, not a mega-system. He writes that his theory “develops a polycentric (and accordingly polycontextural) theory in an acentrically conceived world and society”³⁸. In any event, Hartmann concludes that: “in biology, just as in cosmology, unity is precisely the categorially secondary moment. The demand for a primary unity, intelligible in a central point, is a purely subjective postulate, a rationalistic atavism of human thinking”³⁹.

As we said, this error can be found in many systems, not necessarily in those that defend the “everything is rational” philosopheme. The “everything is nothingness”, or “everything is irrational,” or “everything is hyperchaotic”, are also instantiations of this same error. However, there are two particularly different cases of this mistake that should be properly discussed, particularly in what they differ from the first cluster.

The first is the **Error of Rationalism** [*Fehler des Rationalismus*]. It is not uncommon to conceive of principles and categories as being rational, or to claim they might be grasped by reason, or that they are at least partially rational. This error, in its turn, states not only that principles and categories are *only* rational, but that they are also *simple* and entirely *intelligible*. Even more, they further another confusion, which is the claim that being “rational” and being “intelligible” are synonymous.

Hartmann observes that the idea that categories having to be intelligible is not a classical Greek notion. Plato always talked about the ontological-gnoseological relationship as being incomplete, partial, imperfect, and that the hypothetic and anabatic methods were a tremendous challenge that needed to be exercised with no guarantee of overarching success.

³⁷ Hartmann, 2012, p. 347.

³⁸ Luhmann, 1995, p. lii.

³⁹ Hartmann, 2012, p. 347. This resonates nicely with E. Butler’s critique of theology as being conceived not as an area of inquiry which studies a class of sacred objects, but as the pig-headed search for one true singular unity of the sacred (yes, the redundancy here is required).

Plotinus himself always placed the Good beyond the other Forms, much more complex and vastly more sophisticated beyond the rational even from the Gods. Everything changes in modernity, when Moderns decide that the world is theirs for the taking, and that everything was made up of simple rational things entirely graspable because they were entirely intelligible. Descartes is a notable figure here, claiming that all knowledge must be perfectly intelligible, clear, distinct, based upon an apriorism that is as universal as cognizable, which came out of an immediately intuitive and gratuitous givenness of simple substances.

There are three problems with this Error. The *first* is as Hartmann writes:

“The research into principles performed by Descartes and his followers is still very primitive. For him everything principle-like was held to be in itself simple. He did not know that in fact ultimate categorial elements are really something very dubious, something that cannot be directly grasped in any principle that can be exhibited, or in any group of such principles. It is only the more complex categories that can be grasped in an approximate way, but as soon as we precipitate the elements out of their complex forms they become ungraspable. What we take to be ultimate, still-conceivable elements are not simples” (Hartmann, 2021, p. 337-338).

If we were propagators of this Error’s way of reasoning, we would expect to find the final Lego blocks at the bottom of creation, something simple and combinable with other Legos to build more complex things. Science disproves this greatly: the further we delve into atoms, particles and forces, the bizarrely more complex and unstable it gets. This idea relates to Hartmann’s own categorial *novum*, or the principle of emergence, in that the emergent whole is not merely a sum of its parts, but is something different from it. This is something as old as the Aristotelian adage found in the Book H of the *Metaphysics* (1045a 8–10). It also connects to the general CR-idea that entities across reality itself already work their own reductions of complexity – such as by condensing actants or actual occasions into objects or corpuscular societies. Thus, we already are dealing with the **ontological work of reduction** between existents themselves, giving rise to the idea that simplicity for a humans’ eyes is a *real* surface-effect of worked complexity *of the real*.

The *second* problem with the Error of Rationalism is that it conflates the *categories of cognition* with the *cognition of the categories themselves*. Just as any research, the investigation of the categories of cognition will not yield absolute comprehension of a totalized object. Just like any other object, there are also trans-objective and trans-intelligible features in

this study of categories as well. Also, the method for this would have to use the very tricky *intentio obliqua*, which very easily can slip into forms of correlationism, cancelling the world because of some misguided idea of the self-referent consciousness of the individual or of some intersubjectivity or another. A successful inquiry into the categories of cognition, according to Hartmann, other than his own, were only undertaken by Kant and Husserl at best. The reason for this is that categories, far from being simple, are not knowable by building on the fallacy of transparency which postulates an immediate access to them, such as the Hegelians usually believe so. The knowledge of categories themselves, on the contrary, is one of the most mediated and abstract reasoning ever to be executed, with actually no transparent immediacy whatsoever, be it from the point of view of consciousness, or by any spiritual/sociocultural entity or stratum.

This relates directly to a *third* problem that comes with the old idea of the *intuitus purus* that would arrive at “what comes first in the order of cognition”, the famous *cognitione prius*. If anything, what is possible for the research into knowledge is the most mediated and the most “*posterius*” of methods and results. Still, as with anything, the categories of knowledge, ontological as they are, do not need to be known in order to function – and one can go their entire life without undergoing this kind of inquiry.

As we have seen in the last cluster, categories are inherent, attached, inside or around their concretes. So, to understand categories, the research can only be conducted in the *a posteriori* kind. The methods of analysis and reflective reasoning are not infallible (actually, being the easiest ones to fail), but they need to start with what there is – they produce things that have an “upwardly directed tendency”, which the Greeks named “anabatic” method. This has been contrasted with the apodictic method, but also with traditional empiricism. Hartmann creates a neologism to grasp this idea:

“This does not mean we are left with an empirical cognition of principles, for when the analytical path has led to the categories the latter have to be apprehended in turn or made self-evident in themselves. However, this self-evidence and this vision is precisely mediated, and indeed mediated in characteristic fashion by the *posterius*; thus it is not a genuine *a posteriori* knowledge, but perhaps one might say *ex posteriori*. The *prius* of cognition is itself, however, not in the least affected by this conditionedness of the *ex posteriori* cognition of categories. It certainly is not this cognition itself, nor its principle, but rather its object, the category itself” (Hartmann, 2012, p. 339).

Very close to the rationalists is the **Error of Categorical Identity** [*Fehler der kategorialen Identität*]. One might presuppose that there is an identity between the categories of consciousness that tries to describe objects; and these objects' own constitutive categories – even if subject and object are different *concreta*. Kant's example is instructive inasmuch he believed that both poles of the cognitive relation were indeed different, yet they shared at least a few conditions of possibility together. The Error arises when the small scope of this identity is exaggerated (subject = object), or when someone claims that “reason = intelligibility” again as did Descartes, with the twist that everything different is reduced to a primordial categorial identity, which amounts to another apriorism/monism. Leibniz seems to be the traditional thinker associated with this:

“What generates the correspondence, or even the relatedness of representations to the represented real? ‘Preestablished harmony’ is just a catchphrase which explains nothing. The actual core of the theory is the unity and eternity of the ‘ideas’ or ‘eternal truths.’ These are one and the same for the monads represented and for those doing the representing—without remainder and deep into the singularity of their complex coherence. Thus, the correspondence is established, the ‘simultaneous chiming of the clocks’ and the constancy of the relation between ‘body and soul’” (Hartmann, 2012, p. 341).

What is important here is not exactly to once again attack apriorism, but to state clearly that **the limits of cognition are part of the processes of cognition themselves**. In Hartmann's terms, the limits of rationality also are phenomena to cognition, and any illegitimate step towards an absolute cognition rests on willfully ignoring this. Again, categories of cognition are important, but they are neither the totality of ontology, nor they are absolutely known at any point (neither *a priori*, nor *a posteriori*).

Some additional observations regarding these Errors. 1) *First*, the limits of cognition, of the knowing subject, and of the intelligible in the objectified, are three separated, but important, pieces of the force of Kant's argument. The very idea that knowledge has limits is the very core of any truly *critical* philosophy. 2) *Second*, this time differently from Kant, the partial identity between ontological and epistemological categories does not guarantee that the transit between them is secured, automatic, transparent, or gratuitous. This means, the “transcendental deduction” method cannot function here, since it would arbitrarily suppress the *ex posteriori*, therefore, being rendered pointless by the whole endeavor that is the Categorical

Analysis. 3) This connects to the *third* point, that every category needs to be worked theoretically and empirically in their concrescence processes. To merely say “category of causality” is not enough to explain nothing if it does not ingress in the specific object-oriented, system-oriented, nexus-oriented way we are analyzing.

3.3 – Third Cluster

The last cluster revolves around the **Error of Heterogeneity** [*Fehler der Heterogenität*]. Hartmann characterizes it as the “perverse extreme” when regarded from the Error of Homogeneity. It is a gratuitous, lazy, or even well-intended exaggeration of a bunch of adequate principles way beyond their scope of relevance, generating a structural non-applicability of principles that, in their original place, were perfectly adequate. He writes that “a spurious heterogeneity between principle and concretum is introduced here. It registers with us as the total inadequacy of the principles in light of the actual problematic encountered”⁴⁰. The list is interminable, for it encompasses all sorts of -isms and their fraudulent minimizations, such as logicism, materialism, formalism, physicalism, naturalism, biologism, psychologism, spiritualism, and so many more. Our Category Theory must proceed differently:

“Each domain of phenomena must have its own particular set of categories that belong only to it. To the extent that they do indeed extend themselves into a domain of differently constituted, structurally ‘higher’ phenomena, as it were, they can only play a subordinate role and never pertain to what is distinctive about these phenomena themselves. It does not follow from this postulate that certain principles could not also have comprehensive significance as such. To find out how, to what extent, and for what they are valid is the task of a particular investigation, a categorial analysis oriented to the particularity of the phenomenon itself, and the final word on the subject can never lie in anything other than this” (Hartmann, 2012, p. 330).

The main trouble with this Error is that the procedure is usually based on something that very likely is true on its origin. Being based on a handful of truths and adequate categories, the actual problem is the generalization of these to the entirety of reality. This makes combating this Error something very tricky, for when one denounces physicalism, their defenders will hear “I deny that atoms exist”, or any similar absurdities. We don’t have time to criticize each of them, but consider the bizarre example: “every drowning accident happens when water is

⁴⁰ Hartmann, 2012, p. 329.

involved”. That being true, it does not state anything other than what it says. If someone would “deduct” from this a “system” that water is “evil”, or should be avoided at all costs, the foolishness would be evident. Again, the trouble is not the particular truth on a specific concrete nexus or object, but the simple-mindedness of believing that all knowledge is automatically discovered by knowing a handful of truths. “When they discover the correlation between water and drowning, they deduce everything there is based on that correlation, despite desiccation and subsequent urinary infections”, I have written elsewhere. Then I asked “how many -isms, psychological traumas, political ideologies and religious cults are founded on the totalization of one or a few truths?”⁴¹.

Hartmann takes the time to analyze two particular cases of this error, and one special erroneous consequence. The **Error of Subjectivity** [*Fehler der Subjektivität*] is built on the correct idea that there are important categories for cognition in the knowing subject – and that this subject is also very important on the construction of the objectification processes and the *ex posteriori* investigation into hypothetical, anabatic and even more complex principles and categories. However, it becomes all too giddy with this, and starts to believe everything is subjective, or that everything is constructed by the subject alone, or that subjective epistemology is the presupposition for ontology. Against this, we have seen that objects and subjects, either one of them, are both concreta, each with their own categories and some might overlap in cognition. This is only the first axis – the second comes through all the *ex posteriori* reasoning, which is the categorial study of how a principle relates to its *concretum*. Hartmann describes this as an *orthogonal relation*, for the {subject – object} and the {principle – concretum} relations might interconnect with each other if the ontognoseological processes are adequate, but each of these four are ontologically irreducible to one another⁴².

Another particularly insistent kind is the **Error of Normativity** [*Fehler des Normativismus*]. Its original truth-core is that teleology, or the study of purposes, aims and directives, is indeed very important. However, it decides to subordinate ontology to deontology or teleology, claiming that the *Sollen* is not only more important than the *Sein*, but it subsumes and exhausts it. This Error became particularly repetitive in the Western spectrum after it was fused with modern idealisms and their subsequent metaphysics of intersubjectivity: “Its fusion with idealism goes back to Fichte (so I will call this the Fichtean Error), who expanded the

⁴¹ Maciel, 2021b, p. 493.

⁴² Hartmann, 2012, p. 334.

Kantian ‘primacy of the practical’ to the point where all ontological lawfulness is to be seen as self-determination of an absolute activity”⁴³.

This Error yields a massive teleology that supplants theoretical and empirical researches with prejudices and desires of some genial author, or a group’s innermost fears and hopes. It arranges the cosmos and the strata of reality to have a direction, a massive “towards-something”, which actually is an ideological or fundamentalist political/religious drive of those who have designed or yearned for it. Hartmann does not mince words when he says that this sort of teleology of nature, teleology of the world, or even the teleology of history, are nothing more than “anthropomorphism, formally speaking”, since “what it does is ascribe to the world-process, whether in part or as a whole, the same purposive action that we know as a given phenomenon exclusively in the activity of human beings”⁴⁴.

For our 21st century allies, Hartmann’s assessment might be a little troublesome. Nonetheless, I stand by his side at this point as well. I referred earlier here to a Whitehead and Descola paper of mine, wherein the four anthropological dispositions towards nature were discussed. In it, I present a criticism of both anthropocentrism and anthropomorphism, for even if they are indeed different, they are based on identity-variables, and are decided ultimately on what they believe humans are. These beings are taken as the deciding centre of these metaphysics, be as the sole shepherds or exploiters of the world, be as the model towards which all other creatures strive. Totemist and analogist collectives do not function in this way. Humans are important players, but not the ultimate deciding element for what the cosmos is⁴⁵. Hartmann is noticeably irritated:

“A deep, thousand-year-old custom of thought rooted in folk mythology has virtually sanctified this subreption. Soberly viewed, however, it is a source of immeasurable distortion of philosophical problems. The ontological problem is the most endangered by it. This error is most to be blamed for the mistrust that ontology encounters in philosophy to this day. This mistrust is not entirely unjustified, for a veritable biblical flood of prejudices, half-baked popular philosophies, and scientifically totally unverifiable ideas is entrenched behind this imperceptible subreption, encouraged and deliberately obscured by every all-too-

⁴³ Hartmann, 2012, p. 334-335. Grant might relate this to Neo-Fichteanism other than of the entirety of the German or British Idealism systems, but this assessment would require another paper.

⁴⁴ Hartmann, 2012, p. 335-336. However, he does not reject any and all teleology (see Hartmann, 1966).

⁴⁵ For more information on this, see Maciel, 2022, particularly p. 113-114 and its notes.

human inclination of the soul and theoretical half-measure” (Hartmann, 2012, p. 336).

The main problem is that this error has been as pervasive as perverse in all philosophy, even beyond the Western spectrum. This generalization has led to what might be interpreted as the gravest of all, the **Error of the Harmony Postulate** [*Fehler des Harmoniepostulats*]. This is different from the Error of the Systematic Monism, for it has no “principle of principles”, nor a definite centre. Hartmann differs these two by contrasting Plato and Plotinus, and one might think also between Hegel and Spinoza. Plato and Hegel “have been most poorly understood precisely on this point”, since their dialectics are the natural enemy of the “lethargic, habitual thinking of a lazy, purely formal monism”⁴⁶.

The difference is that, here, there is an underlying dogma: a tendency or a direction towards equilibrium, towards syntonisation, or a comprehensive harmony, towards an Absolute. These philosophies emphasize the dogma of the rhythm, of an assured pace, a coming and going of the same inside contained differences. This rhythm might be something bucolic, but rarely is. For example, Heraclitus’ “occult harmony” is actually made of wars, strife, of πόλεμος. This is also classically present at the first Stoics’ (pre-Panetius of Rhodes and Posidonius of Apameia) take on eternal recurrence of the conflagration of the world and its regeneration as the same. This creates vague rhetorical questions and subsequent half-assed “solutions” that are actually just going through the motions and waiting to see what is what. This semantically null phrase is adorned with pompous erudite elaborations to mask both its inadequacy and its hollow directives.

The problem is not even these charlatan moves, but that it destroys, *a priori*, a proper appreciation for theory-building, for question-posing, for being awed and befuddled with a reality that has no overarching teleological nor harmonious postulate at all. It forcefully suppresses all problems’ validity by making hollow claims that “everything is what it is” and that “everything will be something else someday”, believing that this is enough to characterize and to try and solve problems. By obligating all antinomies, aporias, and hardcore questions to be mere preludes to the assured “coming solution”, we do not have a true processual philosophy, but an “eternal recurrence” bit. Parallel to Hartmann, Meillassoux has made a similar observation:

⁴⁶ Hartmann, 2012, p. 338.

“Heraclitus, according to me, is a terrible fixist. His becoming must become, and persist eternally as becoming. Why? This is, according to me, a dogmatic assessment, without any justification: because, according to me becoming is just a fact - as well as fixity - and so becoming and fixity must both have the eternal possibility to appear and disappear. But Heraclitean becoming is also, like all physical time, governed by specific laws, laws of transformation which never change” (Meillassoux, 2014, p. 25).

This led Meillassoux to conceive of his Hyperchaos as something very distinct from the Chaosmos, entropy, or similar theories. For Meillassoux, and for our complexity-and-contingency-metametaphysics, the universe is under no obligation to change or to stay the same. There is no assured rhythm to soothe the hearts of mortals. Inquiries on the nature of change and of stability must **both be explained** – not presumed, nor warranted, nor mystified⁴⁷.

Although there are some Platonists that defend theses closer to this, it is very hard to pin down Plato as a Heraclitean. However, through first Stoics, this Heraclitean seed came to be defended as such, making its way through Pagan Neoplatonists. From these authors and their many appropriations by other religions, it culminated in the Hegelian enthronization of the Harmony Postulate as the true core of the absolutized metaphysics of human intersubjectivity. Hartmann writes ironically:

“They are attempts at the unification or harmonization of the different, without prior consideration of whether the different terms require or are capable of being harmonized. The human understanding, *ratio*, has the form of unity and univocity, from which stems its tendency to make everything discrepant agree, to force it under the principle of contradiction at whatever cost. This is a purely subjective teleology of *ratio* and is at bottom a special case of the same rationalism that we have encountered in the Cartesian Error: the world, the macrocosm, in itself indifferent to all *ratio*, is measured by the merely human purpose of wanting to conceive it! It is no wonder that it doesn't add up!” (Hartmann, 2012, p. 351).

He finishes his assessment of Hegel in a very blunt way:

⁴⁷ I made a similar argument elsewhere when bringing together Whitehead's category of creativity and OOO's withdrawing objects: see Maciel, 2019, p. 343.

“The Hegelian Error is an astounding *testimonium paupertatis* of reason, precisely at the apex of its sure-to-be-victorious self-consciousness. This is one of the major points where one has to invert the traditional methods of philosophical practice in order to be placed on the path of a really critical ontology, and furthermore, of a critical *philosophia prima*. Hegel rightly saw that antinomical opposition is not the peculiar form of a few cosmological questions, but is a universal characteristic of the major fundamental questions of principle” (Hartmann, 2012, p. 351).

Conclusion: Turns, Directives and Categories

Bearing in mind the Three Turns and the Five Directives, as well as the directions provided by Speculative Realists and other allied authors such as Whitehead, Latour and Luhmann, Complex Realism can make sense out of Hartmann’s list of avoidances and not fall short to any of them. The *First Cluster* of errors is avoided by conceiving of ontology (what there is) and epistemology (access, concepts, procedures) as separated, but connectable through ontognoseology (the study of categories). Not being entirely epistemological, to learn how to use them is part of the challenge, but their proximity to what there is makes it worth a while. And, since what there is, according to Complex Realism, is complexity and contingency, a coherent Category Theory will need to also be complex in their own way, which always reserves space for the need for other kinds of sophistication and to attempt to deal with contingencies and other theoretical constructs as well.

The *Second Cluster*, in its turn, can also be rejected by avoiding all sorts of totalizing, absolutizing and/or monist philosophies. Grant’s rejection of “The Nature” as a single encompassing monist power; and OOO’s rejection of treating the entire reality as one single totalized or compact object are of great importance for us here. Meillassoux, despite his hyperchaos, also has immense contributions to tackle this Second Cluster of errors, for his blunt rejection of philosophies of “monopluralism” is very inspiring. It is a disguised monism to assume plurality is a second-hand reality (as Harman’s critique of undermining goes), and that everything owes itself to a single plane of pre-individuation, of the virtual, of whatever is considered hip at the time. The Third Directive is very well furthered by Complex Realists that defend the plurality of modes of existence and of cosmology, while working out each one of the modes or kinds of existence’s own categories, dynamics, withdraws, stasis and change possibilities.

The rejection of the *Third Cluster* comes as no surprise out every aspect of Complex Realism. Meillassoux's critique of correlationism, Harman's critique of the philosophy of access, Grant's rejection of a natural monism, Luhmann and Latour's great lengths covered to let controversies flourish and to establish a myriad of modes, systems and networks, the list goes on. Most significantly yet comes Meillassoux's necessity of contingency motto, which demolishes any appeal or power of the postulate of harmony, of a secured rhythm, of a warrant towards change. Harman had already observed this regarding Whitehead and Latour, separating them from the thinkers that bet hard on the "continuity of becoming"⁴⁸ bit as the truth about what there is. This means, stability and change happen also through contingency and complexity – both need to be studied, not just lukewarmly presumed by juggling mysteriously hollowed out philosophemes.

In summation we quote from Nicolai Hartmann one final time, who provides five tasks for the future of Category Theory itself:

"(1) Categories exist entirely independently of the degree of their cognizability. (2) They are in fact only partially cognizable and categorial analysis will encounter, as might be expected, immovable limits to rationality in every direction of its advance. (3) The theory of categories must, without qualification, acknowledge these limits and, as far as possible, help define them. It cannot take them to be the limits of problems, even less as limits grounded in the things themselves, i.e., in categorial being. They are indeed insurmountable, but only gnoseological and not ontological limits. (4) The system of categories which it can articulate must necessarily remain at best only a portion of the whole; it can only approximately coincide with the system of existing, independent principles that it strives to make explicit. (5) The cognitive categories are in no better position in this regard than ontological categories; epistemology is not in any way more intelligible than ontology" (Hartmann, 2012, p. 339).

This research works out all the Directives as well. Complexity and contingency are their base, and going beyond the scope of anthropocentrism, modernity and other philosophical suppressive *dispositifs* delivers us to the plurality of modes of existence, of categories, of processes, of kinds of researches that, even so, will not totalize their objects. Category Theory is particularly transdisciplinary in a truly metaphysical sense, not a merely an epistemological one: the crossing of strata of reality, spheres of being, kinds of modes and processes, truly

⁴⁸ Harman, 2014, p. 234. Since his paper is on Whitehead, the referent in Whitehead is 1978, p. 69.

delivers us the kind of supertheory that thrives in the university of apprehension of its objects, and of its theory and practice-building without relinquishing contingency and the metaphysics of others, as Bensusan puts it. Finally, this internal complexity of the Category Theory is not a warrant in itself, for the Fifth directive always reminds us of how risky, and exciting, metaphysics truly is.

In the end, a few more concluding remarks are in order. Complex Realism is not a philosophy that wants to “refute” other schools, movements and authors. The point is to set up our difference through the Three Turns and Five Directives, and work our theory out hoping it might make others feel welcomed to try to inhabit it as well. It is not about proving others wrong, but by stating that there is another path into another philosophical territory for those that want to emigrate, to inhabit, or even to visit us. The apostasy from the values identified by the negative heuristics of the Three Turns, and the Directives proposed have already been trodden by many Complex Realist allies. Maybe their intellectual descendants and enthusiasts will find this meta-metaphysical territory more welcoming with flourishing opportunities, and with a capacity for diplomacy, assemblage and systems-building among ourselves.

I end this long paper with the ending paragraph of my thesis, which I believe surmise well our path up to this point and to the future of Speculative and Complex Realism:

“A philosophy inherited from hyperchaos such as ours, even with all the reforms that we have carried out in this category throughout [our work], rejoices especially in the abandonment of the postulate of harmony. Not everything has to make sense, not everything has to be resolved, not everything has to be agreed upon, not everything has to be dissolved into consensus. In fact, we saw that not many things allow harmonization – and that the very notion of cosmopolitics needs to work with the opposite: the rejection of the postulate of harmonization as an obligation of a complex ecology, freed from totalizing rhythms that, often, hide bucolic teleologies, anthropomorphisms or romanticisms. Complex Realism needs as much a metaphysics of dissent, withdraw, and free existence as it does the values of liberation, sophistication, subtlety, and pertainment” (Maciel, 2021b, p. 520).

REFERENCES:

ARISTOTLE. **Complete Works (Aristotle)**. Edited by Jonathan Barnes. Princeton: University Press, 1991.

- BENSUSAN, Hilan. **Indexicalism: The Metaphysics of Paradox**. Edinburgh: University Press, 2021.
- BENSUSAN, Hilan. ‘Towards an Indexical Paradoxico-Metaphysics’ in. **Open Philosophy** 1: 155–172, 2018.
- BENSUSAN, Hilan. ‘The Cubist Object: Black Boxes, Überrealism and the Metaphysics of Perspectives’ in. AUSTIN, Michael et.al. (eds.) **Speculations**. Volume 2, May, 2011. ISBN 978-1-257-65407-9, pp. 169-186.
- BUTLER, Edward. “The Polemic against Polytheism” in. **Indica Today**. September 1st, 2021. Available online: <https://www.indica.today/long-reads/the-polemicagainst-polytheism/>
- DZIADKOWIEC, Jakub. ‘The Layered Structure of the World in N. Hartmann’s Ontology and a Processual View’ in. POLI, Roberto; SCOGNAMIGLIO, Carlo & TREMBLAY, Frederic. **The Philosophy of Nicolai Hartmann**. Berlin: De Gruyter, 2011.
- GANDHI, Leela. **Postcolonial Theory – A Critical Introduction**. 2 ed. New York: Columbia University Press, 2019.
- GRANT, Iain Hamilton. **Philosophies of Nature after Schelling**. London: Continuum, 2006.
- HARMAN, Graham. ‘Whitehead and Schools X, Y, and Z’ in. **The Lure of Whitehead**. Minneapolis: University of Minnesota Press, 2014.
- HARMAN, Graham. **The Quadruple Object**. Alresford, UK: Zero Books, 2011.
- HARTMANN, Nicolai. **Ontology: Laying the Foundations**. Transl. by Keith R. Peterson. Boston: De Gruyter, 2019.
- HARTMANN, Nicolai. ‘How Is Critical Ontology Possible? Toward the Foundation of the General Theory of the Categories, Part One’, transl. by Keith R. Peterson in. **Axiomathes** 22:315–354, 2012.
- HARTMANN, Nicolai. **Teleologisches Denken**. Berlin: De Gruyter, 1966.
- HARTMANN, Nicolai. **Grundzüge einer Metaphysik der Erkenntnis**. Berlin: De Gruyter, 1949.
- KOPENAWA, David; ALBERT, Bruce. **The Falling Sky – Words of a Yanomami Shaman**. Cambridge, MA: Harvard University Press, 2013.

- KRENAK, Ailton. **Ideas to Postpone the End of the World**. Toronto: House of Anansi Press, 2020.
- LATOUR, Bruno. **An Inquiry into the Modes of Existence**. Cambridge, MA: Harvard University Press, 2013.
- LATOUR, Bruno. **We have never been modern**. Cambridge, MA: Harvard University Press, 1993.
- LATOUR, Bruno. **The Pasteurization of France**. Cambridge, MA: Harvard University Press, 1988.
- LUHMANN, Niklas. **Introduction to Systems Theory**. Transl. by Peter Gilgen. Cambridge, UK: Polity Press, 2013.
- LUHMANN, Niklas. **Social Systems (Writing Science)**. Stanford, CA: University Press, 1995.
- MACIEL, Otávio S.R.D. Algumas Linhas de Realismo Complexo: preceitos, duplo horizonte e isonomia epistêmica. **Das Questões**, v. 17, n. 1, 2023. Available online (Portuguese): <https://periodicos.unb.br/index.php/dasquestoes/article/view/51456>.
- MACIEL, Otávio S.R.D. "Outlines of a Speculative Cosmology: Whitehead's Philosophy of Organism Meets Descola's Four Anthropological Dispositions Toward Nature" in. DAVIS, A. M. (et.al.). **Process Cosmology – New Integrations in Science and Philosophy** (Palgrave Perspectives on Process Philosophy). Cham, Switzerland: Springer Nature, 2022. Retrieved from doi.org/10.1007/978-3-030-81396-3_4.
- MACIEL, Otávio S.R.D. The Complexity of Realism and the Indexicalist Approach: Limits and Prospects. **Cosmos and History: The Journal of Natural and Social Philosophy**, v. 17, n. 2, p. 215–256, 2021a. Available online: <https://cosmosandhistory.org/index.php/journal/article/view/979>.
- MACIEL, Otávio S.R.D. **Primeiro Esboço de um Tratado de Metametafísica: Introdução ao Realismo Complexo**. Thesis (PhD in Philosophy) – Graduate Program on Philosophy, University of Brasília: Brasília, 2021b. Available online on Portuguese at the University's Online Catalogue: <https://repositorio.unb.br/handle/10482/41938>
- MACIEL, Otávio S. R. D. "A Case for the Primacy of the Ontological Principle" in. **Open Philosophy (De Gruyter)**, 2:1, p. 324-346, 2019. Retrieved from [doi:10.1515/opphil-2019-0025](https://doi.org/10.1515/opphil-2019-0025).

- MACIEL, Otávio S. R. D. **Towards a Metametaphysical Constitution? Three Turns in Global Philosophy and a Proposal for Five Directives**. Talk given at the Düsseldorf Graduate Workshop for Philosophy published at Academia.edu. Brasília/Düsseldorf, 2018. Available online: https://www.academia.edu/37317471/Towards_a_Metametaphysical_Constitution_Three_Turns_in_Global_Philosophy_and_a_Proposal_for_Five_Directives
- MEILLASSOUX, Quentin. 'Iteration, Reiteration, Repetition: A speculative Analysis of the Sign Devoid of meaning'. Transl. by Robin Mackay and Moritz Gansen in. AVANESSIAN, Armen & MALIK, Suhail (eds.). **Genealogies of Speculation – Materialism and Subjectivity since Structuralism**. London: Bloomsbury, 2016.
- MEILLASSOUX, Quentin. **Time without becoming** (edited by Anna Longo). Milan: Mimesis International, 2014.
- MEILLASSOUX, Quentin. **Après la finitude – Essai sur la nécessité de la contingence**. Paris: Éditions du Seuil, 2006.
- MEZZADRA, Sandro. 'The right to escape' in. **Ephemera**, vol. 4, no. 3, 1992, pp. 267–75.
- MOHANTY, Jitendra Nath. **Nicolai Hartmann and Alfred North Whitehead – A Study in Recent Platonism**. Calcutta: Progressive, 1957.
- OYĚWÙMÍ, Oyèrónké. **The Invention of Women – Making an African Sense of Western Gender Discourses**. Minneapolis: University of Minnesota Press, 1997.
- WHITEHEAD, Alfred N. **The Concept of Nature**. Cambridge: University Press, 2015.
- WHITEHEAD, Alfred N. **Process and Reality – an essay in cosmology**. New York: The Free Press, 1978.
- WHITEHEAD, Alfred N. **Modes of Thought**. New York: The Free Press, 1938.
- WITTIG, Monique. 'On the Social Contract', in **The Straight Mind and Other Essays**, Beacon Press, Boston, 1992, pp. 33–45.