$a = b : \alpha$, which is an identity judgement, as in the proposition $\forall a,b,c[(a=b)\rightarrow(a-c=b-c)]$.

or

$x : \mathbb{R}, y : \mathbb{R}, \vdash x - y = y - x$, which asserts that the property of the operation subtraction over type $\mathbb{R}$ (real numbers) is not commutative.

The typing declaration $\alpha : \alpha$ means that α is a term or an *object* of the type or *form of judgement* α. Following Martin-Löf's own argument,[303] it would be useful to understand types as forms of judgement or Kantian categories—namely, as pure concepts of the understanding that permit us to arrive at cognition, understanding, or judgement by bringing a possible object under them. In the judgement $\alpha : \alpha$, it is not really important exactly what object α is; what is important is only the existence of an object of type or category α. This means that we can conceive the type α existentially or run the judgement under existential quantification and say that α exists. That is to say, to cognize that α exists is to cognize an object, term, or piece of evidence of type α. In this framework, *A* prop is a problem whose solution is given by a proof and, respectively, *A* true as the *existence* of such a proof in the above sense. Types can also be understood as functions (in the mathematical sense) that compute a specific term.

In this setting, we can bring in additional type and term-related concepts:

- Type constructors for the introduction of new types constructed by more abstract, fundamental, or simpler types, e.g., $\alpha\times\beta$ is a product type introduced by the type constructor $\times$ applied to two given types α and β. Type constructors in this sense correspond to introduction rules, which can conclude a compound judgement constructed—using the constructor—out of simpler judgments.

303 Martin-Löf, *Analytic and Synthetic Judgements in Type Theory*, 92–3.

- Term or object constructors, which, like type constructors, introduce new terms or objects, e.g., the term $\langle a,b \rangle$ of the type $\alpha \times \beta$ is constructed from the term a of the type α and the term b of the type β.

- Type destructors for eliminating types that are no longer needed. They can be compared with elimination rules such as

$$\frac{\alpha \wedge \beta \text{ true}}{\alpha \text{ true}} \qquad \frac{\alpha \wedge \beta \text{ true}}{\beta \text{ true}}$$

- Term or object destructors, which are similar to type destructors but applied to objects.

- Reduction or *rewrite* for demonstrating either that a problem, proof, or judgement can be reduced to a simpler form whose solution can be counted as the solution to the more complex problem, or that the rewritten or reduced form is as difficult as the original form. For example, $B \rightarrow A$, where $\rightarrow$ is a reduction operator, means reducing B to A so that we can solve A with an eye to B (as a computational or cognitive resource). Reduction, in this sense, can be understood in terms of destructors of some type (consuming information, decomposing structure) meeting or communicating with the constructors of their corresponding type (producing information, composing structure), generating a rewritten and more tractable form of the original problem or reducing many problems to just one.

- Dependent types, which are crucial for increasing the expressivity of types. A dependent type is a function of elements of some other type. For instance, the dependent type $D(y)$, the days of the year. It is a function of the element y of the type Y of years, because not all years have 365 days. In other words, D is a type in the context Y or, alternatively, for each y in Y there is a type $D(y)$. Consider another basic example, for the dependent type P: Practice $\rightarrow$Type which is the property of practical claims. $P(c)$ can be seen as the proof or program that claim c has property P, and not some other property—for example, being aesthetic.

- Universes or the hierarchy of types of types ($\text{Type}_0 : \text{Type}_1, \text{Type}_1 : \text{Type}_2, \ldots$), i.e., types whose terms or objects are types. Generally, universes are introduced to avoid paradoxes or antinomies such as Russell's paradox by creating a universe type that includes all other types but not itself. Classical constraints regarding universe levels or the Russellian cumulative hierarchy of types can be relaxed so that judgements and constructions (notions, definitions, theorems, proofs, etc.) can be parameterized over all universes (the hierarchy of types of types) rather than particular universe levels, and instantiated or explicitly quantified at a particular level only when needed.[304] To take a philosophical example, we can see all thinking processes or mentations as being parameterized by the universal type *the mind* or simply *Mind*. Such parameterization across different levels of mental acts allows us to talk broadly about thinking or mind in general, instantiating or specifying a mental act at a specific level or universe type (e.g., intuiting, understanding, or reason) only when necessary. One of the main motivations behind the introduction of universes of types is to adequately differentiate the things or data under consideration. In this respect, the concepts of universes or types of types is very much in conformity with Plato's basic thesis that thinking is determination of differences, and that a consequential thought is analogous to a good butcher who carves at the joints of things, without splintering the bones.

The interactive version of this theory requires going one step further, and treating judgements first and foremost as pieces of interaction or of the interchange of roles between *Proof* (A) and *counterproof* (A), or A and $\neg A$, as necessary proofs without which neither pole can be established.

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304 This parameterization over one or all universes or levels of types of types—particularly in the context of homotopy type theory—is called *universe polymorphism*. A universe is polymorphic when a proof, definition, etc. is universally quantified over one or many universes. Since this universal quantification creates a type ambiguity, it should also permit—when necessary—explicit quantification over specific levels or universes. For more details see Univalent Foundations Program, *Homotopy Type Theory*.

But this is impossible unless we bring interaction into the foreground of the construction of proofs, so that proofs become games of refutations. It requires the *suspension* of procedural rules dictating how the interaction should evolve and establishing game-theoretic pay-off functions; instead it grounds interaction on the architectonics of negation. In this respect, negation is a switch-role operator that maps the legal moves of two players, falsifier and verifier, into one another. What is the judgement $\vdash A$ from the perspective of one is the judgement of $\vdash \neg A$ from the perspective of the other. Cognizing or grasping A true and $a : \alpha$ is impossible unless we cognize their duals A^{-} *false* and $a^{-} : \alpha^{-}$; and vice versa. Accordingly, without the interacting agencies, without the computational duality of the cognitive and the recognitive, cognition-as-program turns out to be—following the previous chapter—an empty thought.

What is important to underline at this point is that the judgements ($\vdash A$, *A prop*, *A true*, $a : \alpha$, etc.) all depend as much on the judgements of the prover/verifier/game played by $\top$ (denoting true) as on the judgements of the refuter/falsifier/game played by $\bot$ (denoting false). Each side is a computational resource for the other's (best) judgements. Since in interactions problems are symmetric to resources, what is a problem for $\top$ is a resource for $\bot$ and what is a problem for $\bot$ is a resource for $\top$. In the interactive paradigm of propositions-as-types and proofs-as-programs, more computational resources—i.e., more nodes of interaction, more playing agents with legal runs—is always better than less.

Types as input-output mapped functions are the most elementary and restricted forms of interaction. Adopting Giorgi Japaridze's logic of non-elementary games or interactions, propositions-as-types-as-functions can be said to be 'predicates that return the same proposition for every valuation', where valuation means 'a function e that sends each variable x to a constant $e(x)$'.[305] A rudimentary example of a constant game or interaction would be a synchronous game with restricted branching, in so far as every player must wait for the other player to finish its legal move before being able to run

305 G. Japaridze, 'From Truth to Computability', *Theoretical Computer Science* 357: 1–3 (2006), 100–135.

its next legal move. The truly interactivist approach—that is, an approach genuinely developed through the architectonics of negation—permits a nonconstant game between the players (i.e., one no longer mapped on simple input-output functions), in which additional possibilities (such as initial choice of move, who makes the first move, asynchronous actions, etc.) result in nontrivial interactions or games with branchings (sub-games) which are not restricted by strict input-output mappings and well-founded types. They can be trans-typified (i.e., in terms of what was argued above, they would encompass different forms of cognition/*erkenntnis* and judgement/*urteil*) or even untyped in the sense that 'any move formed as part of an interaction is allowed to interact with any other, so that no type restrictions can apply'.[306]

Having presented the simplest quasi-formal definition of what is meant by a 'program' when asserting that philosophy is a program, we should also add the following: Philosophy as a program is founded on the architectonics of negation as the engine of thinking and the diversification of forms of cognition. As a nontrivial game of cognitions, philosophy then begins with the premise of aiming to amass as many computational or cognitive resources as possible by collectivizing *agents* of various kinds. Philosophy takes the duality of the cognitive and recognitive—*cognition is always a recognition*—not merely as a social maxim, but as the formal condition not only of what it means to have cognitions and thoughts, but also of what it means to conceive philosophy as a program of cognitive exploration and the craft and cultivation of what, as we shall see, is the ultimate form of intelligence. The project of concretely negating what is pathologically individualizing and bringing about what is impersonally collective is set in motion not by the criterion of mutual recognition as a vague social thesis susceptible to exploitation by peculiarly liberalist-quietist agendas, but as a necessary *formal* condition for computation and cognition. Game-theoretic models, in this sense, are merely restricted cases of interaction in which cognizing agents are forced to accommodate preestablished laws

306 Trafford, *Meaning in Dialogue*, 171.

and payoff functions at the expense of narrowing cognitive-computational possibilities. By taking negation as the condition necessary for a cognition that is not a priori limited, and by incorporating negativity as the basic unit of thought, philosophy evolves into that which wrests thought from its origin and marshals it against the inequality of minds. In doing so, philosophy becomes 'the game of games'.[307]

As the game of games, philosophy is *analogous*—keeping in mind that analogies should never be overstretched—to a universal board game of the most generalized topological structure and comprised of numerous sub-board games. But with respect to this analogy, what exactly differentiates philosophy from other general games played inside language, including our natural languages? The answer to this question consists of two inter-related specifications of the philosophical domain: (1) philosophy, unlike the ordinary domain of discourse, is distinguished by the *explicitly unrestricted* universe of discourse or data under consideration. (2) Philosophical interactions—in the sense in which the concept of interaction has been fleshed out in this book—inhabit certain specific universe types such as the theoretical, practical, and aesthetic, with the type of types (Type_0) being the assertion that *thinking is possible*, or simply thought as a datum which must be investigated and elaborated in the senses of *skeptikos* (the toil of examination) and *elaboro* (the labour of working out).

The possibility of thought is what can be called the Idea (*eidos*) in the exact sense in which Hermann Cohen defined the term in relation to Plato's doctrine of forms and the Socratic concept, the question 'What is it?' (*ti esti*). Idea is the self-consciousness of concept,[308] what at once *gives the account* qua logic (*logon didonai*) and *lays the basis* (*hypotithesthai*) of itself in its own concept.[309] Following Cohen and Paul Natorp, the

307 P. Wolfendale, 'Castalian Games', in *Glass Bead 0* (2016), <http://www.glass-bead.org/wp-content/uploads/castalian-games_en.pdf>.

308 H. Cohen, *System der Philosophie. Erster Teil: Logik der reinen Erkenntnis* (Berlin: Cassirer, 1914), 211.

309 Logos and hypothesis literally mean 'account' and 'basis', as in giving an account of an incident (usually in a juridical context) and laying the basis of an argument.

possibility of thought as Idea is the given (*Gegebene*)—in the sense of the truth-candidate rather than a fixed axiom or truth-given—which is and will be always a task (*Aufgegebene*). As such, it cannot be acknowledged as a telos or destination, but only as a *point of origin and departure*, as the judgement of origin qua logos which is infinite judgement—a judgement that extends in both directions to the infinite beginning and the infinite end of thinking.[310] It is in recognizing and adopting 'the thinking of origin' (Cohen's *Ursprungsdenken*) as the fundamental universe of types, that philosophy turns thinking ('All thoughts are the thought of the origin')[311] into a program firstly for the construction of its universe types (theoretical, practical, aesthetic, etc.) and then for the ramification of universe types into determinate thought-forms and their objects. In Cohen's terms, by beginning with the thought of the origin, philosophy becomes the very logic of thinking. It simultaneously initiates the thought of the unbound sovereignty of thinking and institutes thinking as the universal method for the verification of itself.

DATUM 2. PHILOSOPHY, THE WAY OF WORLDBUILDING

In in its quintessential form, philosophy is an organon for world-building. The worlds crafted by philosophy, depending on their methodological integration with local modes of thinking (science, politics, art, etc.), can be either abstract or concrete. Regardless of the nature of such worlds, they are inhabited by new forms of intelligence and cognition. One cannot adequately represent the world or enrich intelligible reality without first being acquainted with ways of world-making or toying around with the

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Plato's qualification of his Idea or Form in terms of providing both logos and hypothesis should then be construed as thought providing both the account and the basis for the concept of itself (what it is).

310 For Cohen's and Natorp's reflections on the critical method of origin, see Cohen, *Logik der reinen Erkenntnis*; and P. Natorp, *Platos Ideenlehre. Eine Einführung in den Idealismus* (Leipzig: Dürr, 1903).

311 Cohen, *Logik der reinen Erkenntnis*, 36.

idea of reality as if it were an unbound play rather than a game bound to established rules designed to represent the given order of things.

In *Ways of Worldmaking*,[312] Nelson Goodman proposes five thinly veiled theses:

(1) Every world we make is built out of the resources and detritus of the available worlds. Every making is a remaking. That is to say, there is a continuity between built worlds and existing worlds. The built worlds, however, are not fantasy worlds or mere possible worlds begotten by the arcane imagination of a staunch advocate of modal realism. They are actual worlds. Thus, ways of worldmaking oscillate between non-greedy reduction and construction. Philosophically, this oscillation is personified by the almost titanic battle between Parmenides, the builder of worlds (type constructor) and Heraclitus, the destroyer of all worlds (type destructor). In this scenario, philosophers are nothing but computational strategies.

(2) There are only world-versions whose criteria of rightness should be tested in the context of their frame of reference, coherency, veracity and validity or conforming to rules of inference, range of possible applications, reconciliation or its absence (i.e. conflict) between worlds. This means that built worlds cannot be assessed by way of an indiscriminate reduction to an original or fundamental world. Once properly understood, reduction is an enrichment of reality and a way of world-building, but not a unique method or a recourse to some precursor world qua total foundation. The task of searching for an ultimate fundament or original world should be relegated to theology, for it is the concern of neither philosophy nor science. Therefore, the second thesis is in reality a clarifying addendum to the first thesis.

(3) Under rigorous scrutiny, the commonsense distinction between pluralism and monism, many worlds and one world, disappears. What is

312 N. Goodman, *Ways of Worldmaking* (Indianapolis: Hackett, 1978).

considered to be one world can be made up of many contrasting, even incommensurable aspects, and what are taken to be many worlds can be seen as one under a specific mode of integration or a collection of those worlds into a single unitary set.

(4) Making *new* worlds for the sake of multiplicity and diversification is a craftsman's caprice. The choice of alternatives or the attempt to envision and construct alternatives is not by any means reflective of reality. All alternatives are beholden to the criteria of rightness, the procedures by which false alternatives can be distinguished from those which are right, fit and testable. Even different aspects of one world can be turned into alternatives, there is no mandate to imagine or make new worlds. Ways of worldmaking are inherently *ways of knowing*, and are therefore intrinsically sensitive to the principles required for knowing and explaining things. Talk of other worlds of intelligences and cognitions is purely nonsensical—an invention of indolent minds wanting to overcome their restrictions by nothing else other than their firm dogmas and whimsical predilections. Absent making-cum-knowing, we can only be in the business of humanly and individualistically wrought confusions:

> Moreover, while readiness to recognize alternative worlds may be liberating, and suggestive of new avenues of exploration, a willingness to welcome all worlds builds none. Mere acknowledgement of the many available frames of reference provides us with no map of the motions of heavenly bodies; acceptance of the eligibility of alternative bases produces no scientific theory or philosophical system; awareness of varied ways of seeing paints makes no picture. A broad mind is no substitute for hard work.[313]

(5) Behind all ways of worldmaking, there lies an ever-growing list of methods and operations. Such basic operations for propagation of worlds

313 Ibid., 21.

are never exhaustive, but that does not mean we cannot compile a list of basic operations or imagine new ways of worldmaking:

a. *Composition and Decomposition* are operations by which things are taken apart and put together to make ever more new part-whole relationships, taxonomies, classes, and subclasses of entities and their features whose combination results in the construction of complexes and the specific connections they afford. For example, think of how predicates of smell can be applied to predicates of colour to create synaesthetic predicates, or how theoretical claims can be applied to practical claims. An example of this operation is the mechanical method of Archimedes by which geometrical problems are interpreted mechanically. The solution provided in the realm of mechanics is translated into a solution for the geometrical problem. Composition and decomposition, thus, provide bases for the identification of entities and their features according to the overall organizational scheme of a world-system (i.e., how taking apart and putting together in thus-and-so ways generates patterns and classes). The concepts of the central point and uniform space are identifiable in the world of classical perspective/geometry, but not in the Cartanian world where the model of the world itself cannot be confronted via a central perspective (an anchored observer) because it is a *scattering* world. Elie Cartan's concept of moving frame (*repère mobile*) is essentially this scattering model of the world that is identifiable in reference to new classes—*groups*, *total space*, *multiplicity*—generated as the outcome of decomposing and recomposing the old perspectival paradigm. The observer within this world is unanchored and its perspective is mobile and never given in advance of the piecemeal unfolding of space. Even repetition, periodicity, and temporal flux are related to the organizational or compositional scheme. We can imagine fundamentally monotonous and uneventful worlds, or alternatively, turbulent Heraclitean nightmares, depending on how events are sorted into kinds through operations of composition and decomposition.

b. *Weighting* allows worlds to be partitioned into relevant and irrelevant classes of entities and features such that what is a relevant class for one world might be an irrelevant class for another. The word sun is *stressed* in Plato's *Republic*, yet it is a quotidian de-stressed word in a naturalistic novel by Émile Zola. The question 'How long does it take for the earth to revolve around the sun?' is a relevant class of problem in the Copernican frame of reference but not in the Ptolemaic one. Likewise, the question 'How long does it take for the sun to revolve around the earth?' is relevant in the Ptolemaic frame of reference but not in the Copernican framework.

c. *Ordering* is an operation that mainly concerns the order of derivation within a constructional framework. The order of derivation of points with respect to the Euclidean and non-Euclidean systems are different. In the Euclidean paradigm, points can be either given elements (intuitive axioms) or the result of an elementary construction over other axiomatic data (lines intersecting). But in non-Euclidean worlds, the order of derivation can be fundamentally different. Worlds possess hierarchies of construction or orders of derivation. Such hierarchies *demarcate*, *limit*, or *enable* transition from one perceptual or cognitive ability/machinery to another. Take for instance the Chomsky hierarchy of formal grammar, where the type of automata that can compute recursively enumerable languages are universal Turing machines. They are far harder to recognize, more complex and costlier in computational terms than those automata which can only compute regular or context-free syntax. Furthermore, as in Carnap's constitutional system, once the order of derivation is formulated as a set of transformation rules, it is then possible to build new elements on the basic building blocks (axioms), and, more importantly, to systematically define the relationships between those basic building blocks. The latter engenders the opportunity to move beyond the ostensible foundation toward the realm of metalogics or worlds of proto-foundations. This in turn allows for the expansion of the notion of objectivity, since object is only that

which can be structured in a constitutional system and can become the object of statements in that system.

d. *Deletion and Supplementation*: Every worldmaking in one way or another requires a procedure of erasure or weeding out and filling the gaps with new materials. The worlds made by deletion and supplementation are worlds which increasingly supply our cognitive armamentarium with new methods of construction, new anticipations, and ways out of our established order. Think about how cubism erases the elements of classical figurative painting. But to the extent that, in the way of worldmaking, erasure is not enough—what is erased often has to be replaced by new supplements—every figure loses something but also is supplemented with new lines and diagrammatic configurations. Or think of Goodman's own example: the shift from the analogue to the digital should be regarded as a veritable worldmaking. In this process, continuities are deleted. We are now in the domain of pure mechanizability: discrete inputs, discrete states, and discrete outputs. This shift realized by deletion is a radical one. The very distinction between human and machine collapses. The human world will be revealed as nothing but a special qualitative kind of integration of computational algorithms. As an alternative to this digital world, we can imagine a computational world where continuity, and above all the realtime interaction between the system or the abstract machine and its environment, is restored (supplemented). This is a new computational world in which the system and the environment interact without any pre-given limitations. The interaction is computation itself in a *truly concurrent* sense, to use the idiom of today's theoretical computer science. The prospects of such a paradigm of computation for remodelling the very notion of spirit or geist as a multi-agent system (interacting computational processes) is beyond our acquired practical reason, if not truly theoretically and practically unbound.

e. *Deformation* or reshaping can involve either corrections or distortions, or both. For example, think of an engineer who does not directly

intervene with a metal beam at the level of the crystal structure, but develops an approximation or normalization technique (essentially a controlled distortion) whereby he can manipulate the beam sufficiently at a less fine-grained or detailed level of analysis and intervention. Or take, for instance, Boltzmann's gas theory in which the earlier works of classical thermodynamics as developed by Carnot, Clausius, and others are corrected in a generalized fashion, but where the thermal elements are also reshaped and reinvented as statistical ensembles of the position, velocity, and momentum of particles.

Even the philosophical program of worldbuilding shares the common operations and attributes of general worldmaking: the built worlds of philosophy are primary theoretical, practical, axiological, or aesthetic universes of types. The aim of philosophical world-building is to enlarge the domain of discourse beyond all habitually entrenched perceptual and noetic limitations such that we can imagine worlds where our inductions and, even more broadly, our reality, is constructed by the unnatural predicates (e.g., grue and bleen-type predicates)[314] we project onto it. Or worlds where the craftsmanship of mind in this existing world coincides with other intelligible forms of mindedness and intelligence as inhabitants of other worlds qua artifices of the mind. The world of philosophy is the *universe* of worlds, its philosophical tenets are experimentations in crafting worlds and their intelligent inhabitants which, upon careful analysis, can be shown to consist of one world and one universal conception of intelligence—an intelligence that demarcates the necessary ontological and epistemological correlations between what is intelligible and the work involved in making sense of it as a part of an intelligible reality or Being. To this extent, the new worlds of intelligence are not just cognized worlds. They are fundamentally the world *re*-cognized in different ways.

314 See Appendix.

DATUM 3. ACTUALIZING THE POSSIBILITY OF THINKING

Conceived as a program, philosophy is an inquiry into the realization of all possible forms of cognition and what might arise from the exercise of forms thus realized.

In the programmatic framework, the choice of data does not confine the program to their explicit *terms*. Rather, it commits the program to the underlying properties and operations specific to their class or family of interconnections. To put it differently, if a program constructs possible realizabilities for the underlying properties of its data, it is not essentially restricted to their terms. Realizability here means what arises from the exercise of powers or abilities brought about by some necessary underlying capacities or properties. For example, transcendental psychology characterizes the mind along two perpendicular lines—what arises from the exercise of the mental powers or abilities of mind, and what is required for the realization of these abilities or powers. We can call these two axes *realizabilities* and *realizers*, corresponding respectively to that which arises from the exercise of realized abilities (powers of judgement and cognition) and the conditions or capacities necessary for the realization of such abilities. Kant's threefold synthesis can then be understood as an abstraction of realizers-capacities from above, from the vantage point of realizabilities. In the same vein, philosophy begins with the exercise of realized mental powers, but its exercise is such that it permits the examination of what may possibly arise from the programmatic use of such powers. The realizabilities of philosophy are those modes of cognition that turn thoughts into programs, and cognitions into recipes for crafting intelligence, by extracting and combing through the underlying cognitive properties specific to thinking agents. Let us look at a crude example:

1. *p is an E*

In a Platonic style, this cryptic expression says: 'The form (*Eidos*) that Parmenides partially exhibits defines who Parmenides is (*p*)', or 'the form of Parmenides, as a complex of cognitions, qualifies who he is', or, in a more

straightforward way, 'Parmenides is a rational life-form of such-and-such theoretical and practical qualities, the complex of his sayings and doings'.

Then Parmenides says or does something that displays particular properties of that realm of form, or says or does some x that qualifies him as a rational life form. This can be written as:

> 2. *p does* x : $\mathcal{F}$ ($\mathcal{F}$ for a rule-governed [i.e., normative] behaviour or function).

As a rational life form, Parmenides is a particular pattern-uniformity through which implicit patterns or properties specific to the realm of forms can be realized in the temporal order. $\mathcal{F}$, or what Parmenides says or does as a rational life form, is a partial realization of these forms as an intelligible practice or operation. In other words, $\mathcal{F}$ is a practice whose operational content can be traced, changed, and combined with other practices to construct more complex realizabilities specific to the realm of forms that Parmenides partially embodies. In this example, 1 and 2 represent the specific data and its basic operational information, which may be abbreviated to 'this p is $\mathcal{F}$ of E-form' (again, roughly translating to 'Parmenides's thoughts and actions reflect the form to which he belongs', or 'Parmenides is what he does as a rational life-form').

Now let us introduce another agent, Confucius. Everything that was said about Parmenides also holds true for Confucius, except that what they do and say are not the same. Their forms and, respectively, what they say and do, are different. We then have:

> $\mathcal{F}$ (p-form) for Parmenides's thoughts and actions corresponding to its cognitive form

And,

> $\mathcal{F}$ (c-form) for Confucius's thoughts and actions exhibiting the complex of cognitions that reflect who Confucius is.

For $\mathcal{F}_1$ and $\mathcal{F}_2$—Parmenides and Confucius—we can additionally introduce, following Lorenz Puntel, operators that specify specific domains of philosophical discourse or universe types of basic philosophical assertions. Again in tandem with Puntel's special notations,[315] these include at the very least $\boxed{\mathrm{T}}$, $\boxed{\mathrm{P}}$, and $\boxed{\mathrm{AE}}$—respectively, theoretical operator, practical operator, and aesthetic operator. There may be more operators of the philosophical discourse, or these operators themselves may consist of various specific types, but for the sake of brevity we shall keep it at that. Something like $\boxed{\mathrm{T}}\varphi$ is a datum of the universe type *theoretical*, saying for example, '*It is the case that* nothing else outside of Being exists or ever will'.[316] And respectively, something like $\boxed{\mathrm{P}}\varphi$ says '*It is an ethical obligation to* look upon the younger generation with awe because how are we to know that those who come after us will not prove our equals'.[317] In other words, the practical operator is an explicit datum concerning explicitly practical desiderata (ethical, intellectual, legal, etc.) that can be expressed in terms of obligation, permission, impermissibility, and even encouragement. Likewise, $\boxed{\mathrm{AE}}\chi$ is an aesthetic datum that roughly and forcedly translates into '*There is an aesthetic presentation* such that χ',[318] as in 'There is an aesthetic presentation such that the verses of Bhagavad Gita satisfy the supreme needs of Spirit', or 'The proof of Pythagoras's theorem is an embodiment of timeless beauty'.

What is important is that the operators of philosophical discourse are *encompassing types of modes of cognition* in the sense in which types were defined earlier. In this respect, we can approximate them to universe types, while regarding the investigation and elaboration of the possibility of thinking, or simply *thought*, as the type of types (Type_0). The universe Type_0 can be defined—following Plato—as the formal reality of nonbeing. For once nonbeing is *formally*—rather than substantively—distinguished from being, it becomes the determining negativity of thought through which objectivity

315 Puntel, *Structure and Being*.

316 Parmenides, *Parmenides of Elea* (Westport, CT: Praeger, 2003), 27.

317 Confucius, *Analects*, tr. E. Slingerland (Indianapolis: Hackett, 2003), 94.

318 Puntel, *Structure and Being*, 91.

can be distinguished from falsehood (*pseudos*) and fleeting appearances (*eikones* of the *eikasia* or purely sensible suppositions).

Accordingly, the formal differentiation of thinking from being, of *that which is not* (*to me on*) from *that which is* (*to on*)—that is, the possibility of thought in and for itself—is precisely a definition or datum by which the question of being (or nature, reality, universe, etc.), and correspondingly the intelligibility and coherence of materialism and realism, can be rescued.[319] Therefore, far from being a philosophical coup against Parmenides, Plato's project salvages Parmenides's most cherished question, that of being, from both Gorgias's greedy scepticism about the limits of language and logos and the paradoxical nature of the question of that which is,[320] and the Eleatic fusion of being and thinking. Plato's revision of the question of being in relation to truth or objective validity, in this respect, is equivalent to type rewriting as defined above. In order to solve the question of being, to save its objectivity, Plato brings head-to-head a series of destructors and constructors. The old Eleatic subsumption of thinking under being is destroyed while at the same time a new type is constructed—thought as formally distinct from being or the formal autonomy of thinking. By destroying *thinking : being* and constructing *thinking : formal nonbeing* (*nonphysical forms or ideas*), Plato rewrites and solves the question of being as the objective validity of thinking (language and logoi).

The picture of Parmenides that Plato presents in the dialogue *Parmenides* gives an entirely different account of the champion of nature and the way of truth. This is the mature Parmenides already disillusioned by the Eleatic equivocation or fusion between being and thinking. What Plato's Parmenides

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319 See for example, R. Brassier, 'That Which Is Not: Philosophy as Entwinement of Truth and Negativity', *Stasis* 1 (2013) 174–86, <http://www.stasisjournal.net/index.php/journal/article/download/60/94/>.

320 Gorgias's tetralemma can be formulated as follows: (1) Nothing exists; (2) Even if existence exists, nothing can be known about it; (3) Even if it could be known, it cannot be communicated to others; (4) Even if it could be communicated, it cannot be understood. See Plato's response, in Plato, *Gorgias* (Indianapolis: Hackett, 1987).

advocates is much more similar to the Hegelian unity and identity of opposites, being and thinking. Indeed, Plato goes so far as to pit the mature Parmenides against the young and rather ignorant and flamboyant Socrates only to show how the latter's thoughts are exposed as incoherent and crude, and how he is pushed by Parmenides to *the precipice of the abyss of nonsense*.[321] In a dialogue which is one of the most intricate and profound discussions in the history of philosophy,[322] Parmenides goes on to edify Socrates about the subtleties of being by way of the subtleties of forms or ideas: For example, it is a mistake to ascribe the characteristics of particular existent things $(\exists x)$ or quasi-perceptual terms to forms or ideas. The latter are different in kind from the particular things that partake in them. Consequently, participation of particular things in universal forms should not be defined as a part-whole relationship, since that would again reduce forms to thinghood.

With these remarks on forms and universe types of philosophy in mind, let us picture a hypothetical scenario—a simulation constructed only out of philosophical imagination— where Parmenides and Confucius interact:

$\mathcal{F}_1$: $\boxed{\mathrm{T}}$ (of Parmenides)

and

$\mathcal{F}_2$: $\boxed{\mathrm{P}}$ (of Confucius)

can be combined, cohered, and integrated according to the rules of how theory, practice, and aesthetics can stand in relation to one another, thereby generating new *forms* inhabited by new modes of cognition.[323]

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321 Plato, *Parmenides*, §130d7.

322 See the inaugurating discussions in *Parmenides*, particularly §130–§145.

323 'Sentence forms that have the practical operator as the main operator and, within its scope, the theoretical or the aesthetic operator (thus, "$(\boxed{\mathrm{P}}(\boxed{\mathrm{T}}(\varphi))$" and "$(\boxed{\mathrm{P}}(\boxed{\mathrm{T}}(\chi))$") are philosophically senseless: how matters, including aesthetic matters, in fact stand within the world cannot be made dependent upon any sort of demand. On the other hand, the sentence form that includes the theoretical operator within the

These philosophically crafted forms are essentially what were presented in the market of the agora, where philosophers propped up their own stands—built worlds—to offer what they had constructed and elaborated from the hypothetical interactions of different forms and encompassing types of modes of cognition. They were as much programs for thought as they were recipes for determining what is the case, what ought to be thought, and what ought to be done.

Now imagine an agora outside of this temporal world where, among many others, the Cynics, the Stoics, the disciples of Plato, the Aristotelians, the New Confucians, and the Anushiruwanians (who offer a particular brand of Neoplatonist and Indic cosmological thought built on the critique of tradition and the way of social justice) auction their recipes. The price for what they offer is not your financial wealth, but your theoretical and practical commitments—that is, the entirety of who you are. Once you take up an offer, your destiny will be reshaped according to those modes of cognition that tell you what is the case, what should be thought, what should be done, and what is presented as the aesthetic articulation of is and ought. Yet this is not destiny as a *telos* or *eskhatos* but rather a cognitive and practical expedition down ramifying paths initiated by whatever you commit yourself to. Philosophy, however, advises us not to conclusively take up any offer until we have begun, to the best of our capacities, to resolve the incompatibilities between what is on offer in the agora, by making explicit those implicit thoughts that are already explicit in practices. But philosophy also tells us that we cannot do that until and unless we have interacted with every stand that is in the agora of cognitions. Indeed, philosophy, as that which programs thought, is precisely this sustained wandering in the agora of all possible modes of cognitions and the forms realized by them. There is virtually no a priori limitation as to who or what can build this agora, who or what may be behind the stands, or what form of agency—realized or yet unrealized—may ascetically wander through it. The agora is open to anyone or anything

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scope of the aesthetic operator seems to be wholly sensible.' Puntel, *Structure and Being*, 94.