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The Atomistic Approach in Leibniz and Indian Philosophy

Introduction

What do Leibniz and Indian philosophy have in common? It is well known that Leibniz was interested in China and Confucianism, or rather, neo-Confucianism. (Cf. Cook/Rosemont 1981) It is also believed that he became acquainted with Buddhism through its Chinese version – the Huayan school. (Cf. Liu 1982) Did this influence his own philosophical system? The issue remains controversial. (Mungello1971; Perkins 2004; Rentmeester 2014) My paper is not about intercultural influences. I will try to look at Leibniz through the lens of, or from the topos of Indian philosophy. Following François Jullien I may call it „dépayser la pensée". (Marchaisse 2003)

Reading and re-reading Leibniz, I noticed a number of parallels with different themes of Indian philosophy, which could be deepened and developed in the frame of a comparative philosophical research, for example, the similarity between the idea of monads as mirrors of the universe, and the principle „in each part there is the nature of everything" (*sarvam sarvātmakam*) of Kashmir Shaivism, or between Leibniz's panpsychism and the late Mahāyāna teaching, according to which the Buddha-nature (Buddhadhātu), or the Tathāgatagarbha („embryo" of the Tathāgata, the Buddha), is contained in everything, even in stones. I do believe that comparative studies can open wide heuristic perspectives and reveal universalia or universals of philosophical thought, regardless of their cultural attires.

In this paper, I will try to look at Leibniz from the *topos* of Indian philosophy. François Jullien called such a strategy „dépayser la pensée" – to withdraw an idea from its familiar environment and to see it through the lens of a different culture. „Read Confucius to better understand Plato." I am referring to Indian philosophy, especially to some Buddhist systems, in order to highlight certain aspects of Leibniz's mode of thinking, that I define as „atomistic approach".

Despite his consistent criticism, predominantly from the continualistic position, of atomism, both ancient and contemporary, Leibniz, in his own metaphysics, remained a convinced atomist. His monads – as the „true atoms of nature" – are the only final causes of things or substances. In this paper, Leibniz's meriological arguments are being examined with the help of some principles and conceptualizations developed in Indian philosophy. In particular, I will compare

https://doi.org/10.1515/9783110536133-004

the whole-parts models in *Monadology* and in Nyāya, as well as in the Buddhist schools of Abhidharma and Yogācāra. I will also show that, due to their commitment to the atomistic approach, both Leibniz and Buddhists confronted the problem of how to account for complex substances, and proposed different strategies of dealing with their continuity.

An Atomistic Approach

The problem, on which I am focusing attention in this paper, has interested me for more than 30 years – it is the problem of atomism articulated in terms of a continualistic and discontinualistic approaches to reality. I am drawing a distinction between three things: 1) philosophical doctrines of atoms, 2) scientific theories of atoms and 3) the atomistic approach. By the latter I understand a tendency to reduce an object to a set of further indivisible ultimate units and to explain it in terms of these units, or of their properties, as being the result of their aggregation, interaction, collision, connection-disjunction, succession and so forth. (Lysenko 1994) One can talk about different applications of the atomistic approach or, figuratively speaking, different „atomisms" – mathematical, geometric, linguistic (phonetic, grammatical, semantic), logical, spatial, temporal, procedural, social, and so on. The atomistic approach can be found in various disciplines, including physics, chemistry, along with the doctrine of atoms or without it. In fact, both philosophical doctrines and scientific theories of atoms may be regarded as an outcome of the atomistic approach. (Lysenko 2014a)

For me, Leibniz is one of the most interesting figures to be viewed in the light of the atomistic approach, through the categories of discrete and continuous. Despite his consistent criticism of ancient and contemporary atomism, predominantly from an openly continualistic position, Leibniz remained a convinced atomist in his own metaphysics – his monads are the only primordial beginnings of things, substances, forming „the true atoms of nature". They turn out to be the only ultimate units of things, the substances that constitute „the genuine atoms of nature", or „metaphysical atoms". But this does not mean that Leibniz somehow identified monads and atoms. On the contrary, he drew a clear line of demarcation between monads as „genuine atoms" and the atoms of ancient natural philosophy and modern science, which he defined as „phenomenal" (the term used by Leibniz).

In Leibniz's attitudes towards atomism there are still some ambiguities. It is not accidently that Richard Arthur called his paper „The Enigma of Leibniz's Atomism". (Arthur 2003) Andreas Blank, in his paper about Arthur's concept, articulates one of the key problems of Leibniz's atomistic approach:

> Famously, both in his early and later years, Leibniz criticizes ancient atomism for describing atoms as absolutely indivisible. According to his view, matter is both infinitely divisible and actually infinitely divided. Nevertheless, the early Leibniz in numerous passages is committed to entities that he calls „atoms", and in his later years he continues calling composite substances „atoms of substance". [...] Leibniz consistently rejects the existence of absolutely indivisible atoms, while at the same time he is committed to the existence of atoms that display internal complexity. [...] Why did Leibniz characterize such complex, composite entities as „atoms"? (Blank 2011, p. 115)

In this paper, I will examine Leibniz's meriological arguments through the lens of some principles and conceptualizations developed in Indian philosophy, such as whole-parts (*avayavin-avayava*), properties and their bearer (*dharmin-dharma*), cause and effect relationship (*karaṇa-kārya-bhava*). In particular, I will compare the whole-parts models in Leibniz and in the Buddhist schools of Abhidharma (analysis of individual experience in terms of *dharmas* – ultimate properties) and Yogācāra.

The status of the composite substance

Let us turn to the first lines of *Monadology* – the seminal work, representing the ideas which Leibniz came to towards the end of his life (1714).

1. The monad which we are to discuss here is nothing but a simple substance which enters into compounds. Simple means without parts.
2. There must be simple substances, since there are compounds, for the compounded is but a collection or an aggregate of simples.
3. But where there are no parts, it is impossible to have either extension, or figure, or divisibility. The monads are the true atoms of nature; in a word, they are the elements of things. (Leibniz 1989a, p. 643)

Here, the word „part" is used twice: the first time in the negative sense, when Leibniz mentions the absence of parts in the monad as a simple substance; the second time, the word „part" is applied to the monad itself. It follows from this that although the monad is partless, it can itself be a part of some other thing. At that point the main question arises: how can unextended monads, which, as we know from Leibniz, do not interact and are not related to one another by any causal connection, constitute a complex substance, or compound? What exactly do they constitute – a self-sufficient whole or a simple aggregate of parts? What is

the status of the composite, compound or complex substance in the philosophy of Leibniz?[1]

This seems to be the key question for Leibniz. I suppose that reflecting on it he may have come to the formulation of the pre-established harmony, and to the introduction of the concepts of *unio metaphysica* („metaphysical unity"), *vinculum substantiale* („substantial connection"), etc. All these concepts helped him to explain the stronger integrity of some units made up of monads (as compared with others, purely material ones), like the living organism, the unity of the soul and body, that is, of the higher and lower monads.[2] To this issue, although it is not the main one, I will refer throughout the paper, since it is with it that Leibniz's mereological reflections are often connected.

From Leibniz's point of view, ancient atomism is untenable, for it lacks a sufficient reason: inanimate matter, according to him, does not contain its own simple primitives and is divisible to infinity. Therefore, the postulate of the atom as „indivisible" (the literal meaning of the word „atom") is arbitrary. In his Postcriptum to the Fourth Letter to Clark, Leibniz wrote:

> We would have nature to go no further and to be finite as our minds are; but this is being ignorant of the greatness and majesty of the author of things. The least corpuscle is actually subdivided in infinitum and contains a world of other creatures which would be wanting in the universe if that corpuscle was an atom, that is, a body of one entire piece without subdivision. [...] I lay it down as a principle that every perfection which God could impart to things without derogating from their other perfections has actually been imparted to them. Now let us fancy a space wholly empty. God could have placed some matter in it without derogating in any respect from all other things; therefore he hath actually placed some matter in that space; therefore there is no space wholly empty; therefore all is full. The same argument proves that there is no corpuscle but what is subdivided down as a principle that every perfection which God could impart to things without derogating from their other perfections has actually been imparted to them. (Leibniz 1989a, p. 691)

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1 This question echoes the theme of Paul Lodge article „Leibniz's notion of an aggregate" where he discusses the ontological status of an aggregate. (Lodge 2001)

2 The notion of *vinculum substantiale*, which first appeared in the correspondence of Leibniz with the Jesuit Des Bosses, was not taken seriously by many (B. Russell noted that this is more a „concession of a diplomatist than the creed of a philosopher"). It was believed that this was a kind of *ad hoc hypothesis* suggested by Leibniz to explain to Des Bosses the doctrine of the transubstantiation of wine and bread into the living blood and flesh of Christ in the sacrament of Eucharisty. In order to change the dead matter of bread and wine into spiritualized substances, it is necessary not only to perceive them as such, but to impart a substantial connection (*vinculum substantiale*) to them, otherwise, according to Leibniz, they will remain simple phenomena. However, some researchers see in this late concept an important phase in the development of Leibniz's theory of monads. At least, two special studies are devoted to this topic. (Cf. Blondel 1930; Look 1999)

For Leibniz, an atom as a body consisting of one not further divided or divisible part, in other words, an atom *as only and only a part*, is the physical atom of Democritus, invariably connected with the concept of emptiness. Its impenetrability Leibniz considers to be only a form of manifestation („phenomenon") of monad-substances, which in themselves are immaterial. These monads are neither parts, nor ingredients of some whole, they are self-sufficient wholes that do not arise from parts, do not break up into parts, but are created and destroyed entirely *in the mind* of God.

Having no component parts, extension, spatial form, position, monads are not subject to any internal quantitative changes. Their identity is not based on their content, but on their substantial form (Aristotle), the essence of which is constant change, the dynamic process of perception from a certain viewpoint. Therefore, the main difference between the „atomistic approach" of Leibniz and that of atomists may be summarized in the following way: the monad, unlike the atom which is part and only part, constitutes, first of all, an indivisible whole, called by Leibniz „substance", „form", or „entelechy".

Parts, Wholes, and Division

In the atomistic (discrete) perspective, whole and part are strictly different: the atom as an indivisible part is one thing, the monad as an indivisible whole is quite another thing. In the continualistic perspective, a distribution of the roles between parts and whole is purely conditional one, since both are divisible to infinity. Leibniz attributes infinite divisibility only to inorganic matter, to its atoms, but not to monads. It is at this point where, it seems to me, we should introduce our comparison with Indian thought.

For the Indian philosophical and rationalist tradition, an infinite division – is an absurd assumption, leading to one of the major fallacies – infinite regress, or vicious infinity (*anavasthā*). The danger of such a regression is indicated by the Brahmanic school of Nyāya, the proponent of atomism: In the *Nyāya-sūtra* IV.2.15 – 17, a logical justification of the indivisibility of atoms runs like this: if things are infinitely divisible into parts, then any two dimensions could be equated to each other (e. g. a mustard seed and a mountain Meru) which is absurd; if division brings to total annihilation, then all things would consist of „nothing" which is also absurd. Therefore, there must be „something" to stop division and this „something" is the indivisible atom (*paramāṇu*).[3]

3 For the analysis of logical justification of atomism in India see: Lysenko 2010, pp. 16 – 17.

If for Leibniz infinity manifests God's creative power transcending any limits, including the limits of our understanding, for Indian realistic and rationalistic philosophers, infinity is marked rather negatively as a symbol of the hardships of *saṃsāra*, or transmigration of living beings through the chain of embodiments. Therefore, all Indian religions proclaim radical liberation from transmigration as their final goal. If Leibniz's infinity is linear and involves a progressive development, in India infinity is cyclical, comprising infinite cycles, each of them, how much extensive it may be, being always finite. The eternal recurrence does not require a Creator (within the cycles some gods may play some cosmogonic roles, but we are not dealing here with a form of creationism).

In Indian philosophy, part and whole (*avayava-avayavin*) are mutually correlated, the whole is possible only if there are parts. In causal terms: parts cause whole. In the light of the Indian concepts of causality, there can be two scenarios: either the effect pre-exists in the parts (*satkāryavāda*) as the plant in the seed, or the effect is something new as compared with its causes, not pre-existent in them (*asatkāryavāda*) – the plant is something new in comparison with the seed. Monads have no parts, but only properties, so, from the point of view of Indian philosophy, it is better to use the Sanskrit term *dharma-dharmin* – „properties and property-bearer". The monad is a *dharmin* and not an *avayavin*, its integrity may be explained in terms of properties-bearer and not that of parts-bearer.

The problem of parts and whole is widely discussed in Indian philosophy, namely, between the proponents of the realistic schools of Vaiśeṣika and Nyāya, on the one hand, and Buddhists, on the other. Without going into the intricacies of this dispute, we may say that the first claimed the greater reality of the whole as compared with its parts: the whole is prior to its parts, and not limited to their sum, being something different (the tree is not just a mechanical collection of roots, trunk, branches, foliage). Buddhists denied the separate reality of the whole, reducing it to an aggregate of parts, the latter being the only reality – what is a tree, except for the trunk, branches, leaves? What is a chariot, apart from its wheels etc.? The last position is designated as „mereological nihilism" or „mereological reductionism" in modern philosophical terminology.[4]

The Buddhist's reducing of the whole to a simple set of parts seems to remind some mereological arguments that Leibniz put forward against insentient matter. However, in relation to living matter, such an approach is fraught with various difficulties, both philosophical and theological: it touches the mind-body problem, in the solution of which Leibniz sought to overcome Cartesian dualism. We will turn to this issue later.

4 For the review of the whole-parts problem in Buddhism, see: Siderits 2016.

From our brief survey of mereological ideas in Leibniz and Indian philosophy, we can see that they share some problems. That fact justifies our very attempt of a comparative analysis.

Leibniz and Buddhists: similarities and dissimilarities

Before focusing on the problem of complex substance in Leibniz, let's try to outline a broader methodological perspective of similarities and dissimilarities in the logic of analysis and in the system of images (imagery) developed in both philosophical systems. The idea that complex phenomena suggest the existence of simple parts. (Leibniz 1989a, p. 643)

1) „There must be simple substances, since there are compounds", and that the properties of complex realities should be explained from those of their simple constituents. This is what I called above the „atomistic approach". It is expressed not only in the concept of atoms, but also in the introduction of other ultimate units for certain phenomena, in Leibniz: atoms, corpuscles, particles (physical atomism), points – geometry (geometric atomism), mathematics (mathematical atomism), monads (metaphysical atomism), in Buddhism – *dharmas* (elements constituting the stream of experience), atoms (*paramāṇu*), *kṣana* (*moments*), *vyañjana* (individual articulated sounds).

2) A radical difference in nature was admitted between the observed phenomena and their unobservable causes, between the macro- and micro-levels of knowable reality, between the world of our ordinary experience, and the intelligible reality (in Leibniz), or reality attended in meditation (in Buddhism). In both cases, everyday experience is characterized as phenomenal. In both, phenomenality is reducible to something more fundamental: with Leibniz – to monads; in Buddhist schools of Vaibhāṣikas and Sautrāntikas – to *dharmas* (micro mental events) and to atoms. As far as the nature of monads and *dharmas* is concerned, there is a similarity between Leibniz and the Buddhist Yogācāra school: Leibniz recognized intellect, reason as the basis of sensory experience (it was Leibniz's response to Locke's empirical formula *Nihil est in intellectu quid non fuerit prius in sensu* [„There is nothing in the intellect that was not before in the senses"], by the formula *praeter intellectus ipse:* [„with the exception of the intellect itself"]); in Yogācāra, a formula *citta-mātrā* or *vijñapti*-mātrā – the reduction of every kind of experience, including the sensory one, to the experience of „consciousness only" (*citta-mātrā*).

3) Similar whole-parts models: a) an additive model (the whole is a simple collection/aggregate of its constituent elements, the very fact of their collection does not bring anything that could unite them into a single substance) reflected in

the series of images (Leibniz: army, herd, pond, sand, drops, bubbles, etc.; Buddhists: army, forest, hair); b) a functional model (the integrity of the whole is based on the performance by each part of its own function) reflected in the images (chariot of Buddhists and Leibniz's clock). However, these models are built in different perspectives. In Leibniz, every part is simultaneously a whole, containing other parts, and an integrity, especially in living nature (doctrine of preformism). The latter corresponds to the Indian concept of causality called *satkāryavāda* – an effect pre-exists in its causes. With Buddhism, parts are causally interacting to produce a new effect (*asatkāryavāda*).

4) Understanding time and space not as separate principles or substances (Vaiśeṣika in India, Newton in Leibniz's time), but as states of things themselves.

5) The accent bears not only on the multiplicity but also on the irreducible diversity of their appropriate first principles, on their individuality, particularity, uniqueness (Leibniz's principle of the identity of indiscernibles, the Buddhist Abhidharma understanding of *dharmas* as having *svalakṣaṇas* – specific properties). From this follows the similarity of their attitudes towards the universals. Both Leibniz and Buddhists were strict nominalists.

6) The dynamic, active character of their first principles. The recognition of change, of process as an ultimate reality. With Leibniz, the source of dynamism is perception as an internal activity of monads. With Abhidharma schools, it is provided by the momentary appearance and disappearance of *dharmas*.

7) The idea that consciousness may encompass something actually unconscious, that there are different levels of consciousness. Leibniz introduces a very important and methodologically revolutionary difference between perception – in the form of an „unclear", „unconscious" consciousness that characterizes simple monads (animal souls, organic bodies, etc.), and apperception, the consciously accessed consciousness of higher monads, or human souls.[5] The same feature distinguishes animal souls from human ones.[6] This position echoes the idea of

5 As Leibniz argues in his *Monadology* (par. 14) „The passing state which enfolds and represents a multitude in unity or in the simple substance is merely what is called perception. This must be distinguished from apperception or from consciousness, as what follows will make clear. It is in this that the Cartesians made a great mistake, for they disregarded perceptions which are not perceived. It is this, too, which led them to believe that only spirits are monads and that there are no souls in beasts or other entelechies. It led them into the popular confusion of a long stupor with death in a rigorous sense, which made them support the Scholastic prejudice that souls are entirely separate, and even confirmed some ill-balanced minds in a belief in the mortality of the soul." (Leibniz 1989a, p. 644)

6 In *Discourse on Metaphysics* (par. 34) he notes: „[…] souls or substantial forms of lower animals· also express the whole universe, although more imperfectly than minds do. But the principal difference ·between them and minds· is that they don't know what they are or what they do, and

many Indian philosophical schools that consciousness constitutes a basis of experience lived either consciously or unconsciously (*citta-vṛtti:* awareness, cognition, reflection, understanding, conceptualization, sensation, will, emotion, etc.). European philosophy did not follow Leibniz; it followed Descartes in his identification of consciousness with rational conscious activity. Only recently, in connection with the discoveries of neurosciences, there began to appear some attempts to integrate unconscious states into consciousness.[7]

System-forming Buddhist principles

Having outlined the general framework of the systems we are comparing here, let us now concentrate on the study of the principles of discreteness and continuity in the understanding of the whole-part models with Leibniz and the Buddhists. In order to talk about them in a more appropriate way, it is necessary to turn to the fundamental system-forming principles of the Buddhist theory and practice of experience, which they called *dharmas*.

In the Buddhist schools Vaibhāṣika (Sarvāstivāda) and Sautrāntika, *dharmas* play the role of ultimate elements of reality. Dharmas are qualities, properties, tropes, individualities, particulars. With their help, Buddhists mainly explained the nature of experience we are having of ourselves and of the world, and not the world as such. Buddhism is a soteriological doctrine which seeks to change ordinary consciousness, a result of ignorance, into the enlightened consciousness of the Buddha. Buddhist philosophers studied ordinary consciousness in introspection revealing its different states in the flow of their own mental life with the help of the practices of mindfulness (*sati*, *smṛti*). They experimented with altered states of consciousness and mastered the technique of objectiveless trances (*dhyana*). It is on the basis of this experience that they developed their psychological and epistemological analysis and created their theories of consciousness. They sought to identify and eliminate – in the mechanisms of sensations, perceptions, volutions, and thought processes – the „unskilful" mental states that prevent seeing things-as-they-are (*yathābhūtam*).

The Buddhist worldview boils down to the following theses: 1) everything is impermanent (Pāli *anicca*, Sanskrit *anitya*). 2) Nothing has an endurable essence, entity, or substance called Soul, or Ātman (Pāli *anattā*, Sanskrit *anātman*). 3) All

so – not being able to look into themselves reflectively – they can't discover necessary and universal truths." (Leibniz 1989a, p. 325).

7 Some modern philosophers and neuroscientists openly express their commitment to „panpsychism" (for example, D. Chalmers, C. Koch).

living beings are experiencing frustration, anxiety (Pāli *dukkha*, Sanskrit *duḥkha*) because they undergo experience, defined by the law of karma and *saṃsāra* – retribution for acts committed by them, and transformation of their individual series of mental events (*dharmas*) in accordance with the karmic impulses of these acts. The destiny of individuals is determined only by their individual actions (there can be no common karma, karma is always an individual matter), and the actions themselves are defined by their intentions (*cetanā*). All otherworldly forces are completely excluded from the Buddhist world view. Gods are kinds of living beings also subordinated to the law of karma and *saṃsāra*, but unlike humans who are able to change their karma, and even completely eliminate it, gods only taste effects of the good karma they created in their past human condition. Since the destiny of the universe is made up of individual karmas, all of us are responsible for it, „since we are changing the world is changing".

All experiences in the world (all *dharmas*) are interdependent (the karmic law of *pratītya samutpada* – interdependent co-arising), and any event has some distant effects. Although series of *dharmas* are called „flows" (*santāna*), there is no continuity between *dharmas*; they are not „transformed" into each other, but their arising and disappearing is mutually conditioned. Continuity is discrete by its very nature; it just consists of leaps, and therefore, strictly speaking, the observed continuity is a mere appearance, which can be explained by the peculiarities of our perception (senses are unable to grasp the too rapid alternation of *dharmas*) and of our thinking (we construct a picture of the world based on this perceptual illusions).

Having created an atomized picture of the world, Buddhists and Leibniz – in different ways and for different purposes – seek to overcome its discontinuity. Buddhists are trying to establish causal connections between *dharmas* (their *dharma* system involves a complex theory of reasons (*hetu*) and conditions (*pratyaya*). As for Leibniz, he refers to the idea of a harmony pre-established by God.

How to overcome the discretness of the Atomistic approach: Buddhists and Leibniz?

Having created an atomized picture of the world, both Buddhists and Leibniz, in various ways and for various purposes, seek to overcome its discreteness. For the Buddhists it is necessary to explain the mechanism of karmic retribution: if the dharmas are instantaneous and discrete, then the experience will be completely new at each moment (the doctrine of causality called *asatkāryavāda*); in that case, how to explain memory, the karmic connection of the present experience with the

past and the future, the self-identity of individuals in the process of their life experience? Karmic causal links need continuity, and where to get it, if reality only consists in discrete „sparks" of *dharmas?*

The image of the sparks is not accidental: Buddhists compare the individual's mental life with the way dry grass is burning; it seems to us that fire is jumping from one blade of grass to another, but in fact, one burning blade of grass lights another (isn't it like the neural networks?).

The school of Sarvāstivāda („everything [all dharmas] exists") or Vaibhāṣika, considering all dharmas as existing in the past, present and future, explains the experience that is happening actually by the activity (*karitrā*) of the sole *dharmas* of the present, the past and future dharmas being inactive.

This raises a new problem – the problem of the karmic connection of the present moment of our life with the past and future ones. The Sarvāstivādins had to append their view of experience only as an actual thing that is real here and now with the notion of a potential, unmanifested layer of latent dispositions (*anusaya*), the ontological status of which is ambiguous.[8] The problem of karmic causality is better dealt with by the school of the Sautrāntikas. Its followers argue that every experience leaves „seeds" (*bīja*), which are activated under similar circumstances in the future. However, the best solution for this problem is to be found in the Yogācāra school: it introduced the concept of a „depository of consciousness" (*ālayavijñāna*) – the most fundamental level of consciousness that accumulates these „seeds" (it is sometimes compared with Freud's unconscious or Jungian archetypes). It's tempting to compare the concept of *ālayavijñāna* – as the basic consciousness, which the person herself cannot not be aware of – with Leibniz's unconscious „small perceptions", necessarily present not only in the lower, but also in the higher monads.

Although discrete *dharmas* are not connected with each other materially, there are complex causal dependencies between them that are reflected in the Buddhist theory of causes (*hetu*) and conditions (*pratyaya*).[9] Monads are also discrete, but Leibniz – depriving them of „windows" and declaring their relationship as the result of God's pre-established harmony – transferred the problem of explaining their interaction to a completely different plane: theistic and theological. For the Buddhists, such a type of argument is completely unaccep-

8 For the problem of potential dimension of experience in different Buddhist schools, see: Lysenko 2012.

9 These are different ways these causal factors are functioning: the *hetu* appears as an immediate cause (for example, the *hetu* of the plant is its grain); *pratyaya* – as concomitant or auxiliary circumstances (for example, the *pratyaya* of the plant are soil, lighting, watering, etc.).

table; they are known as irreconcilable critics of Indian theistic attitudes (*niriśvaravāda*).

In Abhidharma, along with *dharmas*, there are also atoms (*paramāṇu*), strictly speaking, they are not substantial, but rather represent what we would call today *qualia*, sensual qualities. They constitute external things (as being experienced by an individual from the so called first person perspective), and sense faculties that perceive them (*indriya*). Vaibhāṣikas claimed that atoms, being individually imperceptible, are perceived in masses, in aggregates. What we see as tables, chairs, etc., are in reality only aggregates of atoms.[10]

For Leibniz also, material things are nothing but clusters, aggregates, and not what he called „the true atoms of nature", which are self-sufficient integrities, individual substances, or higher monads. In his letter to Samuel Masson (11 August 1716) he argues: „Matter is an aggregate (*amas*), not a substance but a *substantiatum* as would be an army or a flock, and, insofar as it is considered as making up one thing, it is a phenomenon, very real, in fact, but a thing, the unity of which is constructed by our conception [...]." (Leibniz 1989b, p. 227) The same thing he says about bodies in his letter to De Volder (undated 1699): „Since every extended body, as it is really found in the world, is in fact like an army of creatures, or a herd, or a place of confluence, like a cheese filled with worms, a connection between the parts of a body is no more necessary than is a connection between the parts of an army." (Leibniz 1989a, p. 521)

Affirming that a compound material substance is only a mechanic collection of parts, or multiple phenomena the unity of which is not ensured by its own intrinsic properties or processes, but results from an extrinsic mental synthesis of perception of these parts, Leibniz is close to certain schools of Buddhism. In the logico-epistemological wing of the Yogācāra, there was developed a doctrine (its authorship is attributed to the Buddhist philosopher Dignāga, c. 480-c. 540 CE), according to which: contrary to the direct perception of particulars (*svalakṣaṇa*), free from conceptualization and verbalization, mental cognition is constructing images, concepts, or universals (*sāmānya-lakṣaṇa*). Buddhists, like Leibniz, may say that when we perceive what we believe to be a single thing, we actually perceive its constitutive parts – *svalakṣaṇas* or particulars. For Leibniz, when we see a rainbow (Leibniz's favourite example), in fact we perceive only droplets of water in the sky in which sunlight is reflected at a certain angle. The rainbow itself is an image created by our imagination. According to the example of Dharmakīrti (mid-6th century CE) – the perception of a variegated butterfly is mentally constructed from the perception of the colour particulars of its wings. Similarly, Buddhists

10 For the Buddhist arguments *pro* Atomism see: Lysenko 2014b.

may agree with Leibniz that a forest or a herd, although they are in fact only a multitude of trees or animals, are wrongly conceptualized as something singular (Buddhists would say – as an universal). In fact, we perceive each individual of these collections separately. The unification of aggregates is mind-dependent phenomenon in both systems.

Leibniz uses the additive model not only with respect to inanimate matter, but also with respect to perceptions (this may be the subject of a special study), however, when speaking about the status of a complex organic substance, he sometimes recedes from it. In his *Discourse on Metaphysics*, Leibniz admits that in living nature, bodies (lower monads) and even souls of animals, unlike higher spirits, can form some stable associations – *unum per se* („a unity through itself") which may exhibit a much stronger integrity than purely material phenomena:

> Assuming that the bodies – which make up a *unum per se*, for example man – are substances and that they have substantial forms, and assuming that beasts have souls, we must admit that these souls and substantial forms cannot entirely perish any more than can atoms or the ultimate parts of matter in the opinions of other philosophers. For no substance perishes, although it may become entirely different. (Leibniz 1989a, p. 325)

In his correspondence with the Jesuit Des Bosses (Letter to Des Bosses, Feb. 5, 1712), his thoughts acquired a more articulated expression:

> If a corporeal substance is something real in addition to monads, as a line is known to be something more than points, it will have to be said that the corporeal substance consists in a kind of union or rather, in a real unifier [*uniente reali*, V.L.] superadded to the monads by God that out of the union of the passive power of the monads [monads do not have any power upon other monads, V.L.] there arises primary matter or the impulsion [exigentia] to extension and antitypy or to diffusion and resistance. From the union of the monadic entelechies, however, there arises a substantial form. But whatever can arise and be extinguished in this way is also destroyed by the cessation of the union, unless it is conserved miraculously by God. Such a form, moreover, will then not be a soul, which is a simple and indivisible substance. (Leibniz 1989a, p. 600)

According to Maurice Blondel, the combination of living material substances explains the synthesis of „activities" of monads, whereas the connection, called by Leibniz „substantial" (*vinculum substantiale*), is a synthesis of the „passivities" of this complex unified reality. (Blondel 1930, p. 52)

Let us pay attention to the following clarification of Leibniz in his letter to Des Bosses (Feb. 5, 1712): „This form, too, is in perpetual flux, just as is matter, since no point can truly be designated in matter which preserves the same position beyond a moment and which does not recede from its neighbours, however many they may be." (Leibniz 1989a, p. 600) Not only the synthesis of material substances,

but also the synthesis of entelechies, is, according to Leibniz, a flow – and this is very similar to the Buddhist image of the individual flow of *dharmas* (*santāna*), which is a synonym of a person in Buddhism.

In the same letter to Des Bosses, Leibniz formulates his central mereological alternatives:

> We must therefore say one of two things: (1) either bodies are mere phenomena, in which case extension too will be only a phenomenon and only monads will be real, but the union will be supplied in the phenomenon by the action of the perceiving soul; or (2) if faith urges us to assert corporeal substances, substance consists in that unifying reality [*realitate unionali*] which adds something absolute and hence substantial, even though fluid, to the things to be united. (Leibniz 1989a, p. 600)

The first case, from my point of view, can be interpreted as a parallel to the following Buddhist idea: bodily forms (*rūpa*) are formed by clusters of invisible and non-protracted point-like atoms-properties (*paramāṇu*); the extention (unity and continuity) of the body given to us in ordinary experience (*vyavahārika*) is only a phenomenon, appearance (*ābhāsa*). It is in respect of this illusion of a unified thing that conceptualization (*vikalpa*, *kalpanā*) takes place; for example „this is a pot". But whereas Leibniz attributes the faculty of conceptualization to the soul, the Buddhists, since for them there is no permanent „Self" or Soul (Ātman), regard it as an activity of mental consciousness (*mano-vijñāna*); so for them the subject of conceptualization is consciousness itself.

The second case is a holistico-atomistic model (an assembly of parts finds its integrity at a higher level. Parts, in their turn, become wholes for the lower level. In both cases, the wholeness is added by God) does not have a typologically relevant parallel in Indian thought. But there is an excellent parallel to the situation, which Leibniz describes as a possible result of the lack of a substantial connection. This is the concept of empirical reality as a dream in Yogācāra, especially in *Vijñaptimātrāsiddhi*, par. 1 („Proof that everything is just a representation") of Vasubandhu (4^{th} to 5^{th} century CE), where the Buddhist philosopher states that all this (*eva-idam*) is only representation (*vijñapti*), reflecting non-existent things, like seeing a non-existent hair bunch, etc. by a person afflicted with *timira* (eye disease).[11]

If for the realist Vaibhāṣika school the hair image is used to explain the perception of things, composed of imperceptible atoms (in the sense that atoms could be perceived only in masses, rather than individually), Vasubandhu is talking here about a totally illusory, dreamlike perception.

11 My translation: Lysenko 2008, p. 113.

So, being convinced atomists (in the sense of my idea of „atomistic approach"), the Buddhists-realists denied the reality of wholes in favour of the reality of parts, but this idea prompted them to seek an explanation of the integrity we are experiencing as living beings in terms of interdependent emergence of all phenomena. Leibniz, faced with the problem of explaining the integrity of the world and its experience by living beings, resorted to a theistic argument:

> And as through our thought phenomena arise from substances, so through divine thought composites arise from simple substances, it being established that in God there is will in addition to intellect, so that an individual [unum] is made from a multitude; for if He just considered a multitude at the same time, He would make phenomena or aggregates of them, as when God knows a rainbow or its properties. (Look 1999, p. 3)

Thus, the comparative study of the atomistic approach in Leibniz's and in Indian, especially Buddhist philosophy, reveals a number of typologically similar problems and the ways to solve them. First of all, these are the problems associated with justifying the status of complex substances as wholes. Leibniz's position on this issue, as can be seen, had undergone certain transformations from a pure aggregate (I called it an additive model) connected only by perception to the admission of some sort of integrity on the level of bodies.

From the Buddhist point of view, as I can suppose, the main drawback of the whole Leibniz's enterprise is the shift of the responsibility for the destiny of the universe from human actors to God, and instead of establishing a causal connection between human actions and their effects as a basis of human responsibility, an appeal to the principle of pre-established harmony.

Leibniz himself is the best embodiment of his philosophy; he is a self-sufficient monad reflecting the diversity of philosophical thought – both scholastic and ancient – that existed at his time. His views undoubtedly rely on a system of principles, but inside this construction, as inside the monad, there is a constant process of change and development. This is a real creative laboratory where thought does not cease to look for some new perspectives.

Within Leibniz's-monad, the main driving force, appetition, is his rationalism, which may be regarded as twofold: his metaphysics guided by his atomistic approach („the true atoms of nature" or monads are substances and fundamental principles of existence), and his theism or, rather, deism guided by his holistic worldview and continualism. However, it is fair to say that not only his theological considerations served as a trigger of his continualistic ideas, but also discoveries in contemporary experimental science, particularly in biology, in connection with the invention of the microscope and the development of embryology, confirmed in his opinion the idea of an uninterrupted transformation of living forms.

It's hard to say what exactly – continualist or atomistic approaches – led Leibniz to his most important scientific discoveries in the field of mathematics (calculus), logic, or to his anticipation of many contemporary theories, including the principles of computer science, quantum mechanics ... Leibniz himself believed that atomism „nails down" creative thought, when we fancy that we have already found the first elements of things, a *non plus ultra*. But we know from our history that any restrictions imposed by Reason on our understanding of the nature of things, are being overcome by this very Reason in its continuing quest for new ultimate elements, new „atoms".

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