
THEORY AND HISTORY OF CULTURE

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CHINESE CULTURE AND ATOMISM

SUMMARY. This article represents the first generalized Russian research into all possible analogues of atomism in China and the history of its penetration from abroad. According to the general culturological theory of the global “East—West” alternative, the author has formulated the concept of intrinsic interrelation of Western atomism (Mediterranean, Indian, Muslim) with idealism and alphabetic writing, and Eastern (Chinese and widely sinictic) continualism with naturalism and hieroglyphic writing.

KEY WORDS. Philosophy, China, sinology, atom, atomism, alphabet, hieroglyphics, Buddhism, Vaiśeṣika, numerology, East, West.

Atomistic theory is one of the prerogative sources that demonstrate a fundamental differentiation between Chinese and Western scientifico-philosophical traditions and cultures as a whole. As J. Needham stated, Chinese physics stoutly denied atomistics, being faithful to the philosophical prototype of wave theory [1], [2; 46]. Chinese thinkers did not seem to create themselves any variant of atomistic theory. All substrate conditions either of material or spiritual phenomena were usually imagined as continuous-homogeneous (“pneuma” — *qi*, “seed-psyche” — *jing*).

Although in literature one can often find an erroneous interpretation of continual field-like “pneuma” — *qi*, and its refined (essential) form — “seed-psyche” — *jing* (comp. “spermatic logos” of the Stoics) as atomized materia (“particles-*qi*”, “particles-*jing*”). It even reached the point of absurdity, when for example, Father S. Le Gall (1858-1916) [3; 30] interpreted condensation and rarefaction of *qi* in the Great Void (*Tai sui*) as concentration and dispersion of atoms, compared by Zhang Zai (1020-1078) with freezing and melting of ice in water, that in turn was based on the analogy of *qi* and water metamorphosis, that was popular in the Chinese philosophy and which was drawn by Wang Chong (“Lun Hêng” — “Discourses Weighed in the Balance”, VII, 1 / ch. 24, XX, 3 / ch. 62) [4; 296-297], [5; 46]. According to A.C. Graham (1919-1990), S. Le Gall did so in spite of the fact that the comparison to water clearly showed that ether (i.e. *qi* — A.K.) represents a continuum, but not a cluster of atoms [6; 34]. It would be strange indeed if the Chinese connected the idea of discrete elementary particles

with the notion of air (*qi*) that in classical atomistics (Leucippus and Democritus) was regarded as something contrary to atoms, i.e. continual emptiness [7; 251], [phr. 176; 252-254], [phr. 200-203].

The concept of the world's substance — airlike *pneuma* — *qi*, general in Chinese philosophy and science, also defined more specific scientific theories, particularly it influenced the selection of wind instruments, not string instruments as in the West, for example, (*lü* — different size pipes, resembling a flute) as a material model for acoustics and musicology.

A number of researchers from PRC (Feng Qi, (1915-1995) [8] et al.) disclose the concept of the atom in the three principles of ancient Chinese philosophy: *duān* — “beginning, end, edge, basis” (“Mozi”, V-III cent. BC, ch.40, def. 61/61), *xiǎo yī* — “a small sole” Hui Shi (“Zhuangzi”, IV-III cent. BC, ch.33) and *xiǎo tiān xià mò néng pò yān* — “a small thing, that cannot be split/disclosed by anyone/anything in the Universe” (“Zhong ying”, V-IV cent. BC, §12). This last expression was used by Yan Fu for the definition of the European notion of atom.

The definition from “Mozi” that allows different interpretations and corrections reads: “*Duān* — something, that has no preexistent, arow, thickness in a body and that is the first”. According to Feng Youlan (1895-1990) and J. Needham, the definition of *duān* in “Mozi” is very close to Euclid’s definition of a geometrical point and is directed against the aphorism of “dialecticians/aporists” Hui Shi and/or Kung-sun Lung Tzu (IV-III cent. BC) about the infinity of the daily bisection of even a short stick (“Zhuangzi”, rл. 33) that resembles Zeno of Elea’s Aporias “Dichotomy” and “Achilles” (V cent. BC). [9; 270], [10; 194]. On the other hand, Hu Shi (1891-1962) and A.C. Graham found that in “Mozi”, as well as in the works of “dialecticians/aporists”, infinite divisibility being the opposite of atomicity is grounded [11; 120], [12; 432-433]. Such discrepancy in authoritative opinions is brought about by the undifferentiation of physics and geometry, specific to Chinese science in general and to Mohism (Mòjiā) in particular, because in the absence of a developed idealistic theory geometrical objects did not get much of the ontological status of pure ideas.

Although the definition of *duān* is located in the “geometric section” of “Mo Ching” (“The Mohist canon, i.e. ch. 40-45 “Mozi”) and, of course, has a corresponding meaning, this term means also the physical point, as in the example of the Mohists (ch. 42, def. 2) — “the edge of the scale-*zhi*”. This “explanation” (*sho*) refers to the definition of *tǐ* (“body/substance”) to mean “part, element, a member of [the whole]”, i.e. clearly bears the physical sense. According to the just remark of A.C. Graham, *duān* is not any point, but the initial/or end point [12; 310]. Such “initial points” are both “ends” of the stick, that confirms the binomial *liǎng duān* (“two ends/both edges”) used in Ch. 63 of “Mozi”. In “Zhong ying” (§ 6) it has received more than the general meaning of the “dyad of opposing principles” with a specification in the form of good (*shàn*) and evil (*è*) [13; 120], and then in the Neo-Confucian doctrine of Zhang Zai (1020-1078) it became one of the main world-describing categories representing binary manifestation of the Way-*Dào*. On the extremely doubtful atomistic interpretation of *duān* there is evidence of an “explanation” (Ch. 42) to the original definition of “Mozi” (Ch. 40, def. 61/62) — “the absence of

similar/identical” (*wú tóng*), which points to the uniqueness of the object not associated with the concept of the atom.

The “small sole” is only known to be “extremely small, not having internal” (*zhì xiǎo wú nèi*) and it is opposed to the “great one” (*dà yī*) which is “the very great, having no external” (*zhì dà wú wài*). It is not clear whether it is the substance of anything. In Ch. 36 of “Zhuangzi” the similar expression “small, not having internal” (*xiǎo wú nèi*) in the same combination with the “great with no external” (*dà wú wài*) describes “the Way-*Dào* between Heaven and Earth”, i.e. something unique, procedural and continual, rather than multiple, substantial and discrete, like atoms [13; 27]. In “the Lüshi Chunqiu” (“Springs and Autumns of Mr. Lu”, III cent. BC, XV, 3) these formulae are applied to the “person who has attained the Way-*Dào*” (*dé dào jī rén*) [14]. In “Huainan Zi” (II cent. BC, Ch. 2), continual protogenesis is described in similar expressions, in which “existence and absence (*yǒu wú*) have not yet begun to be present” [15]. It is unlimited “space” (*yú*) for which no depth or width “can be the external” (*Bù kě wài wài*), and even chipped bristle or chipped spine “cannot be internal” (*Bù kě nèi wèi*). Sometimes after Zhang Binglin (1869-1936) (“*Mín jiǎn piàn*” — “The Chapter of Sharp Sight”) and Hu Shi [11; 229-233], the term *xiǎo yī* is regarded as time-marking, while *dà yī* — space and time-marking [16], which is also not associated with the atomicity. It is very difficult to consider Hui Shi as an atomist, for his famous aphorism: “If one should daily take a half from a stick of one *chi*, one would not get rid of it even for 10,000 generations” is clearly inherent to an antiatomistic direction, like Aporias of Zeno of Elea, as defined by P. Tannery (1843-1901), published in 1887 [17; 238-245].

It is remarkable that in both paradoxes, as in the “Dichotomy”, we are talking of division in half. A.C. Graham, like P. Tannery [12; 433] [17; 245] in the case of Zeno, explained it as a simple convenience, but perhaps a more deep and common reason lies here — a special role of binarity in the ancient Chinese methodology as well as in the ancient Greek Pythagorean and atomism that Zeno argued.

The expression from “Zhong ying” describes the ultimate intimacy/incomprehensibility (*yǐn*) of the Way-*Dào* (perhaps the teachings) of a noble man (*jūnzǐ*), as well as the comparison with his “greatness that cannot be held/made by anyone/anything in the Celestial Empire”. This passage gives rise to at least two seductive associations. Firstly, the image of the “privy noble man” (*yǐn jūnzǐ*) is the main characteristic of Lao Tzu in his fundamental biography. And as the figure of Lao Tzu casts a shadow of the Buddha [18], thus it is permissible to look for a mark of Buddhist atomism. But the epithet “nonseparating/unsplittable” is even more interesting, it already leads not to India, where the term “atom” (“*āṇu*”, “*paramāṇu*”) carried the idea of “the finest/smallest”, connected with the “opposition a subtle — a rough state of matter (*sūkṣma* — *sthula*)” [19; 88] but to Greece, where this term meant “indivisible/uncut” in connection with the opposition to emptiness.

Indian atomism began to penetrate the Celestial Empire along with Buddhism. At least from the end of the 4th Century the Chinese possessed fixed information about Indian atomism in their canonical texts, and in the 7th Century they already

had a representative picture of its apology and criticism. Moreover, in the Chinese Tripitaka — “*Dazangjing*” (“The Great Treasury of the Canons”), the treatise of the non-Buddhist school *Vaiśeṣika* (*Shèng [lùn] zōng*) was included, which created the most advanced atomistic doctrine in India [19; 87-106], — “*Vaiśeṣika-Nikaya-dasa-padartha śāstra*” (“*Shèng zōng shí jù yì lùn*” — “*śāstra Vaiśeṣika*/school of winning [judgments] on ten categories”) Hui yuè (Candramati/Matiçandra/Džnana çandra, 5th Century) in the translation of Xuanzang in 648. The transformation of the atoms into the perceived objects of *Vaiśeṣika* was explained through numerology, based on combinations of dyads (*dvyanuka*) and triads (*tryanuka*), i.e. of the numbers 2, 3 and 6. This theory was presented in detail by Kuiji (632-682) in his comments on the famous poetic treatise of Vasubandhu “*Vaiśeṣika*” (“Twenty verses”) — “*Wéi shí èrshí lùnshù jì*” (“Notes of interpretations “Sastri in twenty [verses] that are only about the mind”) translated by his teacher Xuanzang in 661 [20].

With some caution it can be assumed that the *Vaiśeṣika* concept experienced some Chinese influence, particularly in its most powerful and original numerologeme-hexagram (*gua*) based on the numbers 2, 3 and 6 (2 types of features, 2 trigrams, 3 digrams, 6 positions). It is possible that in such a way the atomistic potential of hexagrams was implemented through the prophets of the foreign motherland, which was noted by J. Needham.

Later the *Vaiśeṣika* followers began to describe differently the formation of the world out of atoms. Śrīdhara (approx. 950-1000) treated a triad as a combination of three dyads i.e. the sextet of atoms. In general, the origin of the sextuple (2x3) scheme is unclear, and here it is not enough of the total numerological significance of the numbers 2, 3 and 6. According to the hypothesis of V.E. Yeremeyev (1953-2011), one atom corresponds to a point, two atoms to a line, and three dyads to three mutually perpendicular lines — indicating three-dimensional objects.

This interpretation resembles Pythagorean-Platonic mathematical atomism, in which the numbers were considered as indivisible entities and therefore dyads and triads could retain atomic nature [21].

Indian atomism, represented in China adequately enough, found there no ground for establishment, being completely alien or, alternatively, being completely dissolved in the local conceptual organics. For the translation of the terms “*āṇu*” and “*paramāṇu*”, mainly the character *wéi* (“the most subtle/the tiniest”) was used, and the binomial *jí wéi* (“extremely subtle”/the mind-comprehending atom) as well as *chén* (“dust/ashes”) and *lín xū* (“close to the Void”) [22; 1202-1203], [23; 606], [24; 403]. The last term expressively demonstrates the absence of opposition of atoms to the Void, that was fundamental for Europe.

The usage of phonetic transcription of *ā nú* to transfer the term “*āṇu*” was a favorable prerequisite for the development of atomic theory, as this indicated an awareness of its principal novelty. In particular, the encyclopedia compiled by Kuichi, “*Da sheng fa yan i lin zhang*” (“Reflections of the forest of sense of the park of Dharma of the Great Vehicle,” v. 5) [20], states: “Among those who have body/essence (*tǐ*) and function/expression (*yòng*) the very smallest (*zhì xiǎo*) is called *ā nú* and is also known as the extremely subtle/the tiniest (*zhì wei*)”. However, this designation not only failed to prevail, but also forfeited the atomistic, becoming

the symbol of one of the levels of the refinement of genesis, and not its ultimate thinness.

In 1962, coinciding with the publication of the famous book by M. McLuhan "The Gutenberg Galaxy", which states that "the Greeks made their discoveries in the arts and science after interiorization of the alphabet" [25; 87-91] etc., J. Needham pointed directly to the connection of atomism with alphabetical writing [26; 26]. Regardless of this, in the 1970s-1980s the author of these lines developed the theory of two oppositely-alternative types of philosophizing: Western (Mediterranean and Indian): discrete-substantivizing in ontology, based on inflectional languages and alphabetical-phonetic writing, and Eastern (Chinese): continual-processualizing in ontology, and well-naturalizing and numerologizing in methodology, based on isolating languages and hieroglyphics. Developing it, and based on the concept of McLuhan, according to which "the Chinese who use non-phonetic writing retain the perceptual unity of experience" [27; 105], as well as on the research on brain asymmetry and sign systems by Vyach. Vas. Ivanov in the book "Even and Odd" (Moscow, 1978) [28], in 1989, he made the following theses: "Being opposite to hieroglyphs, letters as phonetic abstraction atomize the experience fixed at the very elementary level. The very fact of words partitioning into letters creates the idea of a similar partitioning of existence and educing antecedent or transcendental subdreams. This was the way taken by ancient Greek philosophy... There was desamentization of the primary linguistic element — the letters of the ontological primary element turned out to lack "secondary" sensory qualities — atom or idea. In traditional Chinese culture, which did not use desamentized linguistic units, neither the concept of atoms, nor the concept of ideas was worked out. Accordingly, there was no distinction in the "primary" and "secondary" qualities, i.e. in linguistic projection — quality of letters and quality of words. Since the concept of written language was ontologized... the world similar to the set of characters was conceived as a finite set of sensitively perceived things [29; 34]. The most complete expression of this theory was in the book of 1993, "The Doctrine of Symbols and Numbers in Chinese Classical Philosophy" [30; 6].

Firstly, this was historical, that is, empirical fact: atomism received its development only within two authentic scientific and philosophical traditions — European and Indian, consistent in the use of alphabetic writing of general origin. Second, the logical relationship of both is obvious: letters are the primary elements of the written language, atoms are the primary elements of Creation. Genetically initial formation of alphabetic writing, that left atomism approximately half a millennium behind, seemed to have given rise to the latter, becoming, at least, a heuristic prototype that was apperceived by its ancient Greek and ancient Indian creators, comparing atoms to letters (Leucippus and Democritus: Aristotle. "Metaphysics" I, 4, 985b 15-20), and the sounds that expressed these letters (Indian phoneticians). Moreover, Posidonius (approx. 135-51 BC) dated the "ancient study of atoms" back to the Phoenician Moschus of Sidon since before the Trojan War" (Strabo. "Geography" XVI, 2, 24), i.e. actually connected its origin to the place and time of birth of alphabetic writing.

In addition, both cultural phenomena are combined by a fundamental philosophical position that distinguishes Europe and India from China, namely, ontological idealism. Born from a big "Greek miracle", a small "miracle" of alphabetic writing consists

in the fact that out of the insignificant letters, significant words are formed, i.e. a kind of “creation out of nothing” takes place: not endowed with direct physical referents and proper sense or having all those in other aspects (numerical, phonetic, etc.), letters are formed into words with meanings and values. Quoting M. McLuhan, “Western man was formed on the basis of connection of a meaningless sign with a meaningless sound” [25; 75]. Similarly, things are made up of ideas, or atoms, finding in this transformation fundamentally new quality. This aspect reveals a community of ideas and atoms which, by the way, Democritus called “ideas” (*ideai*), or “indivisible/atomic ideas”.

It was that initial protoidealistic attitude for doubling the of world and the recognition of otherness as primary and perfect, that generated not only Platonism, but also alphabetical writing with atomism. It stemmed from the archaic Indo-European custom of deceased ancestors’ cremation and manifested in Democritus’ recognition of soul atoms as fiery, the identification of fire with the soul in Pythagorean studies and with logos in Heraclitus’ and the Stoics’ studies, and finally, in the self-definition of the Christian Logos inspired by Greek philosophy, “I am the Alpha and the Omega” (Rev. I, 8, 10, XX, 13). Its development was also Western understanding of personality as an indivisible spiritual atom — literally an “individual”, for like the soul, it is, according to A.S. Pushkin, “indivisible and eternal”, as opposed to the Chinese understanding of a personality as easily divisible and an ephemeral psycho-somatic body (*shēn*).

In China another (naturalistic and holistic) worldview tradition had been dominant, that did not allow the formation of either independent full-featured idealism, nor atomism, and that also correlated with the all-powerful hieroglyphics, which became a symbol of the whole culture-*wén*. As for the characters, being full words, they do not derive from any primary written signs, they are primary themselves, like the letters of the alphabet. Of course, most of them are put to the elements, but these are characters themselves. In addition, here the opposition of simple letters/complexity of words will not work, for some characters consisting of one line are much easier than any letters. In general, the alphabet as the product of a “left hemisphere psyche” is analytical and logical, and therefore focused on atomism and discreteness, and hieroglyphs on the contrary, as a product of a “right hemisphere psyche” are synthetic and imagery (*Gestalt*) and, therefore, focus on holism and continuity.

The “politically correct” attempt by J. Needham to anyhow find traces of atomisticity in the so-called hieroglyphic keys/radicals (*bù shǒu*), music notation and features of “Yi jīng”-istic figures-*guà* (three-, hexagrams) is hardly successful. Keys are ordinary characters with the most common meaning, acting as structural (graphical) components of words related in sense, i.e. a kind of linguistic categories that define basic semantic fields and together form a common language thesaurus. Traditional musical notation is also built on standard hieroglyphics. Really ingenious are the geometrized and combinatorially arranged figures-*guà*, but they, on the one hand, are not the components of hieroglyphs, on the other — are, just like the latter, considered “drawings” (*huà*), “images/symbols” (*xiàng*) and “bodies” (*tǐ*). In view of the obvious structural complexity of *guài*, only two basic atom-forming features could claim the role of atoms — wholeness and disruption, which at first glance,

rather resembles a binary opposition of atoms/void, but they are symbols of Yin and Yang forces, that is, the denotation of processes, not immutable substances which are clearly reflected in the title of the text that suggests them: “The Canon of Changes” (“Yi Jīng”), or “Zhou Changes” (“zhōuyì”) [31].

Also, the problem of number nomination is important for our theme. Pythagoreanism was one of the most important sources of Platonism, in which numbers were considered protosubstances of the world as analogues of ideas. This philosophy originated in a cultural context where to represent numbers, not only ordinary words and letters were used — written prototypes of ideas that later led to the formation of a specific numeric alphabet. In traditional China, there was no need for such nomination of numbers by particular signs different from all the other characters. For classification purposes, likewise the familiar duplication of Arabic numerals with Roman, two sets of cyclic signs were used: decimal — “heavenly stumps” (*tiān gàn*) and 12-digit — “earthly branches” (*de zhī*), as well as 60 pairs of combinations and the “Thousand Character Classic” (“*Qiān zì wén*”, 507-521 years), [32; 417-418], [33; 928-929], which consists of 1,000 different characters. But in all these cases, we are talking about ordinary hieroglyphs, not atomic signs — letter-shaped figures.

The ancient Greeks’ fundamental discovery of irrational numbers through the establishment of the incommensurability of the diagonal and the side of the square (or the hypotenuse and a leg of a right-angled triangle) delivered a blow to the Pythagorean number theory and stimulated the geometrization of Greek mathematics. Chinese mathematicians seemed not to notice the qualitative specificity of irrational numbers, which, according to J. Needham, was due to their use of decimal fractions. In the solution of problems connected with the Pythagorean theorem, they confined themselves to obtaining approximate numerical values and a selection of Pythagorean triples of numbers, i.e. whole number values. This fundamental difference with respect to irrational numbers may reflect a drastic discrepancy between ancient Greek somatism and Chinese processualism, i.e. understanding the world in the form of discrete bodies, on the one hand, and continuous processes (events, affairs) on the other. In the framework of Chinese naturalism that was not familiar with any individuality (literally indivisibility) of atoms or the individuality of ideas/eide, that processualized reality and presented it as a set of continuous masses [34], an infinite decimal fraction did not seem unusual and could be perfectly understood as a reflection of the infinite divisibility of any physical object or phenomenon, such as “stick of one chi [in length]” from the aphorism Hui Shi/Kung-sun Lung.

The meaning “letter” of the Greek word “stoicheion” [35] supports this standard for the Western association of world elements and letters, which has a decent parallel in the European etymology of “element” [36], [37; 120], [26; 244, 245]. The Latin “elementum” determines a fragment of the alphabet: L M N, i.e. built as the “alphabet” or “ABC”. A similarity here demonstrates the Chinese term “xíng”, denoting not only five elements (water, fire, wood, metal, soil), but also a hieroglyphic line — or rather, a vertical column of hieroglyphs [30; 289-294]. However, again we are talking about hieroglyphs, and not letters correlated with the ideas of atoms. Etymologically, the Greek and the Chinese terms are very close. And “stoicheion” and “xíng” represent elements as a certain row formed by materialized results of motor processes (shifts). In this context both terms are substantially different from

their Indian counterpart “bhūta”, which has a philosophically ideal origin — from the verb “to be” (bhū), although it is also associated with processuality by the connotation “becoming”. In general, the philosophical concept of “stoicheion” is much closer to “bhūta” than to “xíng”, which reveals not the ontological nature of the elements, but their hierarchical status in the global classification.

In the modern Chinese language, “atomism/atomistics” corresponds to the terms *yuán zi lùn/xué shuō*, based on the binomial *yuán zi* (“original particle”), this terminologization began in the 20th Century under Western influence. In 1908, in the article “*Sī huò lùn*” (“On Four Doubts”) Zhang Binglin identified it with the Anu (ān nú) of Vaiśeṣika, atom (*Ā tún*) of Epicurus and the monad (*mao-nai-to*) of Leibniz. The main competition to *yuán zi* was from the old Indo-Buddhist terms and phonetic transcription of the European “atom” — *Ā tún*, clearly indicating that there is no native Chinese equivalent. In dictionaries the notion of an atom either was missing up to the fall of the Empire in 1911, as for example, in a large (about 120 000 words) and authoritative dictionary by P.S. Popov, 1900 [38], or more associated not with *yuán zi*, but with the traditional terms, e.g. the Buddhist *chén mò* — “speck of dust” [39; 11], or their modernized versions, e.g., *yuán diǎn* — “starting point”, *wei diǎn*, “the finest/smallest point” [40; 28]. In the years following 1910 and the 1920s, it was alternatively rendered with modernized old terminology, in particular, the combination of *Jí wēi* — “extremely thin/small element” [41; 8], and promising innovation *yuán zi* [42; 114], [43; 741], and with it, along with other semantic neologisms based on the traditional vocabulary: *mò pò* — “nonseparating/indivisible” and *wéi chén* — “the finest/smallest dust” [44; 68], the paronym of *yuán zi* — “the original item, the eldest son, heir” and *zhídiǎn* — “material point” [45; 18], *Jí wēi* [46; 79-80] and a phonetic transcription of *Ā tún* [47; 339, 443, 457, 663], and in the 1930s the standard *yuán zi* had already become fixed as a half-way neologism in the form of the traditional binomial with clear semantics [48; 4], [49; 1154, 1157] though sometimes showing as a synonym of another *yuán zi* [49; 1154], [50; 52, 94], [51; 23].

Semantic paronyms with *yuán* were also used synonymously to identify chemical and natural elements in the identically competing binomials *yuán zi* — “initial/original matter” and *yuánsù* — “initial/original substance.” At the beginning of the 20th Century, some reference editions preferred *yuánsù* (alongside the traditional *xíng*, its modernization *yuán xíng* “primary element” and variations *yào-sù* — “a major substance” and *chéng sù* “forming substance”) [38; 816] in this role, [47; 253, 443, 455], [45; 613], [51; 163, 934], [52; 376-377], others preferred *yuán zi* [53; 147], and still others both terms at once. As a result, the form *yuán sù* prevailed, which in the late 1940s was recorded in the famous glossary and encyclopedic dictionary “*Cíhǎi*” (“Sea of Words”) with the characteristics of an alternative term *yuán zi* as archaic [53; 132]. In the same dictionary, there is an “atom” *yuán zi* regarded as the norm [53; 229], the comparative research of which showed, that the fixing of a character *yuán* to it determined it as a paronym for *yuánsù*.

The concept of a molecule initially correlated with an equally wide range of terms used partially for the definition of “atom”: *hé diǎn* — “united point”,

zhidiǎn — “material point”, *wēi tǐ* — “subtle/the tiniest body” [40; 282], *fēnzǐ* — “particle, fraction, the numerator”, *zhidiǎn* [45; 213] *fēnzǐ, yuán diǎn* — “starting point” [49; 271, 1154], *fēnzǐ, yuán zi* [50; 69, 94]. However, since the late 20s the term *fēnzǐ* began to dominate, being fixed in “Cíhǎi” [43; 415].

Monad, along with its phonetic transcriptions *mao-nai-to* and *Mò-na-ta* [47; 28, 457, 663], was indicated in a similar way to the atom: “the finest/smallest material point”, *yuán zi* — “the original matter”, *yuánsù* — “the original item” [44; 760]. However, in the 1920s it began to be determined by the term *dān zǐ* — “single element, list, account, sheet” [47; 663], [45; 213], [51; 503] that prevailed, although in the 1950s as an option there was also the binomial *dān yuán* (“single start, integral unity”) [54; 868], matching in the first component with the term *dān zǐ*. Earlier, alternatively to *dān zǐ* which served as a formant of “monadology” (*dān zǐ lùn*) the binomial *dān yuán* served as a formant of “singularism” (*dān yuán lùn*), [47; 665], [51; 838], [50; 1165], [53; 285], and now it means “unitarity, cell, element, concentrum”, in everyday use — “entrance hall” [55; 403], [56; 121].

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