Vertical Emanation and Horizontal Aggregation: A Linguistic-Philosophical Comparison of Arabic Word Patterns and Chinese Character Configuration

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Abstract
This paper compares the word-formation systems of Arabic and Chinese from a linguistic-philosophical perspective. The derivational mechanism of the Arabic wazn (pattern) system embodies a vertical "emanation" metaphysics: an abstract triliteral root generates a series of concrete lexical items through internal vowel alternations and affixation−a process bearing a striking resemblance to the Neoplatonic cosmological scheme, where the One emanates into all things. In contrast, the configuration of Chinese characters−particularly associative compounds and phonetic-semantic compounds− embodies a horizontal "integration" philosophy: multiple basic pictographic components are juxtaposed spatially to yield new meanings, aligning closely with Chinese correlative thinking (represented by yin-yang and the five phases) and the notion of "harmony" (he). Arabic derivation exhibits a vertical, temporal hierarchy, as manifested in the rules governing roots, patterns, and word classes. Chinese character composition, by contrast, exhibits a horizontal, spatial simultaneity, wherein all components within a single character integrate into a holistic intuition. The typological difference between these two word-formation systems reflects distinct understandings of being and becoming across the two civilizations. The spatial metaphor of "vertical emanation/horizontal aggregation" proposed herein provides a new analytical framework for research in linguistic typology, cognitive semantics, and cross-cultural philosophy.
Keywords: Arabic Word Patterns; Chinese Character Configuration; Linguistic Philosophy; Emanationism; Spatial Aggregation

INTRODUCTION

A single Arabic root can derive dozens of derived words−kataba ("he wrote"), kātib ("author"), maktab ("desk"), kitāb ("book")−all sharing the core semantic nucleus of "writing", each assuming a distinct morphological form and specific meaning. In contrast, Chinese characters take a diametrically opposite path: "person" (人) leaning against "tree" (木) becomes "rest" (休); "person" (人) and "speech" (言) juxtaposed become "trustworthiness" (信). Meaning arises not from derivation from a deep source, but from the spatial juxtaposition and semantic interplay of multiple concrete components.

This difference is not merely a matter of linguistic typology; it reflects two distinct answers to the fundamental question of "how meaning is generated" in the two civilizations (Kramsch, 2014). Language can be regarded as a "non‑redundant authentic model" of cognitive patterns of the world (Pelletier & Nefdt, 2025). Every language

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embodies a unique worldview (Humboldt, 1998; Whorf, 1956), and structural differences across languages can influence and even shape speakers' cognitive styles and patterns of thought (Whorf, 1956). Arabic and Chinese belong respectively to the Semito-Hamitic (Afroasiatic) and Sino-Tibetan language families (Jiang Chuanying, 2010) and are typologically classified as a fusional language and an isolating language—yet the philosophical implications underlying these typological labels have not been fully explored.

This paper proposes a pair of core concepts to capture the fundamental difference between the two word-formation systems: "vertical emanation" and "horizontal aggregation". By "vertical emanation" is meant that Arabic takes the triliteral root as an abstract essence and derives a series of concrete lexical items through different vocalic patterns and affixes, exhibiting a vertical, hierarchical unfolding "from one to many, from abstract to concrete". Root-based derivational morphology is the core of the Arabic word-formation system (Wu Hao, 2015); the triliteral root is embedded into different vowel patterns and affixes to derive a range of related words (Ryding, 2014). This pattern is homologous to the Neoplatonic scheme in which the perfect One emanates into the cosmos—the root is the invisible, unchanging essence (the One), the wazn (pattern) is the rule that bestows form (Intellect/Soul), and the derived word is the concrete manifestation (the material world).

By "horizontal aggregation" is meant that Chinese characters, through means such as associative compounding (huiyi) and phonetic-semantic compounding (xingsheng), juxtapose multiple pictographic components within a single planar space, with meaning arising from the spatial relations among components and holistic intuition. Chinese characters are built on pictographic foundations and form a vast graph system through six principal modes of formation (Chen Wuyun, 1995; Ban Gu, 1962); associative and phonetic-semantic compounds, in particular, embody the core idea that meaning is generated through spatial composition. This characteristic—taking "observing things and taking images" (guanwu quxiang) as the mode of thinking and spatial composition as the mode of generation—constitutes the spatiality of Chinese characters (Wang Wenbin, 2013; Li Jian & Wang Wenbin, 2020). This pattern is directly continuous with correlative thinking in Chinese philosophy, where categories such as yin-yang and the five phases do not derive from one another but constitute holistic meaning through horizontal interaction.

The central thesis of this paper is: the derivational mechanism of Arabic and the configurational mechanism of Chinese characters are, respectively, the paradigmatic linguistic encodings of the two modes of meaning generation—"emanation" and "aggregation". This can be analyzed at three levels: morphological rules, philosophical texts, and cognitive logic.

Previous research relevant to this paper falls into three areas, each of which provides a foundation for further philosophical inquiry but also leaves certain gaps. Research on Arabic derivational morphology has long focused on structural description and psychological reality. As early as the 8th century CE, the celebrated grammarian Sībawayhi systematically articulated the root analysis theory of Arabic in Kitāb (The Book), an achievement that benefited from his perspective as a Persian scholar of Arabic (Versteegh, 2023). The "root-pattern" model, represented by Fassi Fehri, demonstrates

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the central status of the root in the mental lexicon (Fassi Fehri & Salem‑Taha, 2021, 2023). Bohas has proposed the "matrix" hypothesis, challenging the traditional triliteral root theory (Bohas, 1997). Experimental work by Boudelaa and colleagues shows that the root and pattern function together in psychological processing (Boudelaa & Marslen‑Wilson, 2004, 2005, 2015; Boudelaa et al., 2019, 2020). Guo Shaohua (1997, 2007) points out that Arabic grammar is a formal grammar with overt morphological marking, exhibiting a logical‑deductive mode of thought. Wu Hao (2015) argues that derivational morphology constitutes a "metaphorical schema of Arab life", reflecting a connected and holistic logical mindset. These studies provide the present paper with solid structural descriptions, yet they remain at the level of "what derivation is" and "how derivation is processed", without inquiring whether the derivational mechanism corresponds to any cosmological scheme.

Research on Chinese character configuration takes the liù shū (six scripts) of the Shuōwén Jiězì as its foundation (Xu Shen, 1963). In recent years, new advances have been made from philosophical and semiotic perspectives. Zhou Beinan (2025) proposes the framework of "Chinese character image, algorithm, and narration", arguing that character‑formation algorithms embody ancient Chinese simulations of relations among things, and that the clustering algorithm is a theory of character families. Wu Fang and Wang Shiyu (2024) trace the historical development of the "mother‑child" view of characters, noting that Zheng Qiao regarded pictograms and self‑explanatory characters as the sources from which phonetic‑semantic and associative compounds proliferate, like children born of a mother, thereby providing an important reference for the genealogy of Chinese characters. Luo Dongqing (2025), starting from Wittgenstein’s theory of "language picture", proposes that "the Chinese character is a language picture", viewing each character as a sentence or a painting endowed with iconic and poetic features. Meng Hua (2024) constructs a semiotic paradigm of Chinese characters based on "fusion of language and image". These studies have touched upon the philosophical implications of Chinese characters, but they focus on the internal construction logic of individual characters, rather than taking the "multi‑component combination" pattern itself as a horizontal meaning‑generating philosophy to be typologically compared with another language system.

Arabic‑Chinese contrastive studies have accumulated findings at the levels of syntax, metaphor, and thinking traits. Zhu Licai (2004) systematically surveys the cultural manifestations of sound, lexicon, and grammar in Arabic and Chinese. Guo Shaohua (2009) analyzes the profound influence of Islamic culture on the structural and semantic system of Arabic. Liu Fenghua (2010) compares parts of speech, sentence patterns, and grammatical categories across the two languages. Wu Hao (2020) investigates, from the perspective of cognitive metaphor, cognitive differences in metaphor production between Arabic and Chinese speakers. Recent studies have further reached the level of philosophical thought: He Wei and Xiang Zhenbiao (2024) point out that Chinese tends toward "subject‑object fusion" while Arabic highlights "subject‑object separation". Xue Jin et al. (2020) explore cross‑linguistic transfer of morphological awareness in Chinese‑English‑Arabic trilinguals. Mao Junyu (2024) proposes that Chinese exhibits spatiality and discreteness, whereas Arabic manifests temporality and regularity. These studies provide important references for the present paper, yet they either remain at the level of

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language-specific feature description or attribute differences to a vague notion of "differences in thinking", without distilling the core formational mechanisms of the two languages into an operative pair of spatial metaphors or conducting a systematic comparison from the perspective of emanation philosophy and correlative thinking.

In sum, previous research has addressed the question "why does Arabic favor derivation and Chinese favor combination" only by offering the circular explanation "because the types are different", without pursuing whether these two "types" each correspond to a set of philosophical presuppositions about "how meaning is generated". Building on the gaps identified above, this paper pursues three progressively interrelated research objectives. First, mapping mechanisms. At the levels of morphology (for Arabic) and graphonomy (for Chinese characters), this study aims to demonstrate, respectively, how the Arabic derivational mechanism and the Chinese character-configurational mechanism map onto two distinct philosophical models: emanation and aggregation. Second, constructing analytical tools. This paper introduces the spatial metaphor of the vertical versus horizontal as an analytical instrument for systematically comparing typological differences in the mode of meaning generation between the two languages. The vertical axis represents a path of cause → effect, essence → phenomenon, and abstract → concrete, and is characterized by temporality and hierarchy. The horizontal axis represents a path of part ↔ part, juxtaposition → emergent meaning, and synchronic holistic intuition, and is characterized by spatiality and relationality.

Third, philosophical interpretation. From a linguistic-philosophical perspective, this study explores how these two divergent modes reflect the two civilizations' distinct understandings of the fundamental question: how being and meaning are generated. The structure of the paper is as follows. Chapter 2 presents the corpus sources and selection (2.1), methods of morphological and graphonomic description (2.2), and the analysis of philosophical mapping and spatial metaphor (2.3). Chapter 3 presents a comparative table (3.1) and then develops the discussion on three levels: from linguistic structure to ontological scheme (3.2.1), cognitive explanation and philosophical tracing of origins (3.2.2), and counterexamples and theoretical limits (3.2.3). Chapter 4 concludes the paper and identifies research limitations and future directions.

METHOD

To compare the core features of the two linguistic formational systems, high-frequency basic morphemes in Arabic and Chinese were selected as objects of analysis. Arabic corpus. One hundred triliteral simple verbs (e.g., kataba "write," ḍaraba "hit," jalasa "sit") were selected, covering basic semantic domains such as action, perception, and existence. Traditional grammarians have offered different estimates of the derivational capacity of a single root: Sībawayhi estimated up to 308 words, while Ibn Qitāʿī al-Mutawaffī estimated up to 515 words. On the maximal account, there are 25 patterns for root-letter combinations, and each verb can further derive 16 common nominal forms, theoretically yielding several hundred words (Guo Shaohua, 1997). This paper focuses on the nine common derived verbal patterns (al-mazīd fīhi): faʿʿala (فعّل), ʾafʿala (أفعل), fāʿala (فاعل), tafaʿʿala (تفعّل), infaʿala (انفعل), iftaʿala (افتعل), tafāʿala (تفاعل), ifʿalla (افعلّ), and istafʿala (استفعل). With the exception of the ninth pattern ifʿalla, the remaining eight are exemplified using the root k-t-b (كتب "write"): kattaba (كتّب "to

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make write"), ʾaktaba (أكتب "to dictate"), kātaba (كاتب "to correspond with"), takattaba (تكتّب "to learn to write"), inkataba (انكتب "to be written"), iktataba (اكتتب "to register"), takātaba (تكاتب "to correspond with each other"), and istaktaba (استكتب "to ask someone to write"). The ninth pattern ifʿalla is primarily used for changes in color or physical state (e.g., "to become red," "to become bent"); it is not naturally derived from k-t-b, so the color root ḥ-m-r (حمر "red") is taken instead: iḥmarra (احمرّ "to become red"). Although this pattern has a relatively low frequency in the derivational system, its logic of "from root to word" is consistent with the other patterns and does not affect the overall analysis of the "vertical emanation" mechanism in this paper.

Chinese corpus. Based on the liù shū (six scripts) classification in the Shuōwén Jiězì (Xu Shen, 1963), ten examples were selected from each category, yielding a total of 60 characters, with one additional complex character (cuàn) as an extreme case. The ten pictographs (象形) are: 日 (sun), 月 (moon), 山 (mountain), 水 (water), 人 (person), 木 (tree), 火 (fire), 田 (field), 目 (eye), and 口 (mouth). The ten self-explanatory characters (指事) are: 上 (above), 下 (below), 本 (root/origin), 末 (tip/end), 朱 (vermilion), 甘 (sweet), 刃 (blade), 寸 (inch), 凶 (ominous), and 亦 (also). The ten associative compounds (会意) are: 休 (rest), 信 (trustworthiness), 武 (martial), 明 (bright), 林 (forest), 炎 (flame), 尖 (pointed), 男 (male), 从 (follow), and 众 (crowd). The ten phonetic-semantic compounds (形声) are: 清 (clear), 江 (river), 河 (river), 梧 (parasol tree), 桐 (paulownia), 病 (illness), 粮 (grain), 油 (oil), 铜 (copper), and 钢 (steel). The ten mutually explanatory characters (转注) are: 考 (deceased father/old), 老 (old), 耄 (octogenarian), 耆 (sexagenarian), 耋 (octogenarian), 耆 (old), 顶 (top), 颠 (summit), 云 (cloud/say), and 酉 (wine vessel). The ten phonetic loan characters (假借) are: 我 (I/we), 来 (come), 莫 (none), 而 (and), 北 (north), 亦 (also), 叔 (uncle), 令 (order), 长 (long/grow), and 其 (he/it). The complex character cuàn (爨, approximately 30 strokes), originally meaning "to cook over a fire," is composed of multiple components spatially stacked in an orderly manner: 臼 (two hands holding a vessel), 同 (a steamer, a type of cooking utensil), 冖 (the opening of a stove), 林 (firewood), 大 (two hands pushing), and 火 (fire). It vividly depicts the complete scene of "holding a steamer with both hands, placing it over the stove opening, and pushing firewood into the stove fire." This character epitomizes the configurational feature of Chinese characters as "multi-component aggregation into a single character.

For each Arabic root, derivational forms are recorded using the traditional pattern system (wazn, وزن). Taking the root k-t-b (كتب "write") as an example: in the pattern faʿala (فعل, i.e., CaCaCa), it yields kataba ("he wrote"); in the pattern fāʿil (فاعل, i.e., CaaCiC), it yields kātib ("author"); in the pattern ʾafʿala (أفعل, i.e., ʔaCCaCa), it yields ʾaktaba ("he dictated / he made write"). For the nine derived patterns mentioned in Section 2.1, their forms and corresponding semantic changes are recorded individually.
For each Chinese character, its liù shū (six scripts) type is annotated according to the Shuōwén Jiězì, and a description is provided at a depth appropriate to its type. Pictographs are described directly in terms of the shape they depict: for example, 日 (rì) "depicts the shape of the sun." Self-explanatory characters are described by indicating the matter they

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point to: for example, 上 (shàng) "uses a horizontal line with a dot above to indicate the position of ‘above’." Associative compounds are further analyzed according to the semantic relations among their components: for example, 信 (xìn) "combines person (人) and speech (言), meaning that a person’s words should be trustworthy"; 武 (wǔ) "combines stop (止) and spear (戈), meaning that to stop the spear is martial." For phonetic-semantic compounds, the semantic radical and phonetic component are respectively labeled: for example, 清 (qīng) has the semantic radical water (氵) and the phonetic component 青 (qīng). Mutually explanatory characters and phonetic loan characters are annotated according to their traditional definitions concerning relationships of character usage.

Philosophical mapping. The descriptive results obtained in Section 2.2 are correlated with two distinct philosophical traditions. For Arabic, the reference framework is Neoplatonic emanationism, drawing primarily on the emanationist ideas found in Plotinus’ Enneads, al-Fārābī’s On the Intellect, and Ibn Sīnā’s The Healing: Metaphysics. The core mechanism of emanationism posits that the One, as the perfect, indivisible essence, emanates successively the Intellect, the Soul, and the material world, exhibiting a hierarchical unfolding "from one to many, from abstract to concrete." This paper interprets the Arabic derivational chain of root → pattern → concrete word as an ontological hierarchy of essence → form → phenomenon: the triliteral root corresponds to the unchanging essence (the One); the vowel patterns and affixes correspond to the formative rules (Intellect/Soul); and the derived word corresponds to concrete phenomenal existence (the material world).

For Chinese, the reference framework is the correlative thinking of the pre-Qin to Han periods (the yin-yang theory in the Book of Changes, Zou Yan’s Five Phases) and the notion of "harmony without uniformity" (he er bu tong). The core of correlative thinking is that different elements generate holistic meaning through interaction within a synchronic space, rather than through linear derivation from a single source. This paper interprets the configurational logic of Chinese associative compounds as "multi-component juxtaposition → holistic meaning," mapping it onto a cosmogonic model of "element interaction → harmonious whole": the components stand in no temporal sequence or causal derivation, and meaning emerges from spatial relations.

Spatial metaphor coding. Based on the above philosophical mapping, two core conceptual tools are defined as analytical dimensions for the subsequent comparison. The vertical axis represents a path of meaning generation from cause to effect, essence to phenomenon, and abstract to concrete (Overton, 1994). This axis endows linguistic units with temporality (the derivational order is irreversible) and hierarchy (essence is higher than phenomenon). In Arabic, each step of root-based derivation is understood as a process of downward "emanation" along the vertical axis.

The horizontal axis represents a path of meaning generation from part-to-part aggregation, juxtaposition-to-emergent meaning, and synchronic holistic intuition (Gong, 2010). This axis endows linguistic units with spatiality (all components are simultaneously present) and relationality (meaning depends on the relative positions and arrangements of components). In Chinese character configuration, multiple basic components "aggregate" within the same plane to produce new meaning.

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Labeling rule. Each selected Arabic word and Chinese character is labeled as "vertically dominant" or "horizontally dominant" according to its derivational or configurational features. All derived Arabic words are uniformly classified as vertically dominant. For Chinese characters: pictographs and self‑explanatory characters are single‑component forms that do not embody horizontal relations; they are included as basic components for analysis but receive no dominance label (or can be treated as neutral). Associative compounds, phonetic‑semantic compounds, mutually explanatory characters, phonetic loan characters, and the complex character cuàn (爨) all instantiate multi‑component spatial combination and are classified as horizontally dominant.

RESULTS AND DISCUSSION

Based on the above analysis, the core features of the Arabic derivational system and the Chinese character configurational system are juxtaposed for comparison in Table 1. The table presents correspondences across seven dimensions, ranging from technical mechanisms to philosophical metaphors.

Table 1. Morphological-Philosophical Parallel Between Arabic Derivation And Chinese Character Configuration

Dimension	Arabic	Chinese (Chinese characters)
Basic unit of meaning	triliteral root (abstract semantics, e.g., *k-t-b* "writing")	pictograph (concrete image, e.g., 人 "person", 木 "tree", 日 "sun", 月 "moon")
Primary formational mechanism	root + pattern (vocalic/segmental template)	component juxtaposition (associative compounds: image + image; phonetic-semantic compounds: semantic radical + phonetic component)
Typical example	*k-t-b* + CaaCiC → *kātib* ("author")	人 (person) + 木 (tree) → 休 (rest)
Path of meaning generation	from abstract essence to concrete phenomenon (derivation)	from concrete images to composite concept (combination)
Spatial metaphor	vertical: root (deep) → pattern (formal layer) → word (surface)	horizontal: component$_1$ ↔ component$_2$ ↔ component$_3$ (synchronic juxtaposition)
Temporal/spatial orientation	temporality, hierarchy (diachronic unfolding, priority of cause)	spatiality, simultaneity (synchronic intuition, priority of relation)
Corresponding philosophical model	Neoplatonic emanationism (One → Intellect → Soul → All things)	correlative thinking and the notion of "harmony" (interaction of *yin-yang* and Five Phases → holistic harmony)

From Linguistic Structure to Ontological Scheme

The comparison in Table 1 directly addresses the first research objective of this paper. The Arabic root‑and‑pattern system can be interpreted as a process of "emanation" because its derivational mechanism exhibits three key features: (1) singularity of source ‑ a single root governs the semantic range of all its derived words; (2) hierarchical transformation ‑ the root itself has no concrete phonetic realization and must be instantiated through a pattern to become an actual word; and (3) diversity of phenomena ‑ the same root yields different word classes (verbs, nouns, adjectives, etc.) through

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different patterns. This triad closely parallels the Neoplatonic scheme, in which the One emanates through successive levels into Intellect, Soul, and the material world.

To illustrate this logic of "emanation" more intuitively, Table 2 takes the triliteral root k-t-b (كتب "writing") as an example and lists the common augmented verbal patterns of Arabic alongside their correspondences to the levels of emanation.

Table 2. Augmented Verbal Patterns Of Arabic And The Semantic-Cognitive Dimensions Of "Emanation"

Pattern	Prototypical semantics	Example (*k-t-b*, except where noted)	Cognitive operation	Emanation dimension (philosophical implication)
faʿala (فَعَلَ)	Basic action	*kataba* "he wrote"	Direct action	Initial manifestation of the essence
faʿʿala (فَعَّلَ)	Causativization / intensification / transitivization	*kattaba* "he taught writing, made write"	Downward projection: endowing the essence with intensity and influence	Essence moves from being-in-itself to being-for-others, initiating the causal chain
fāʿala (فَاعَلَ)	Active agency / confrontational interaction	*kātaba* "he corresponded with someone"	Outward projection: introducing intersubjective relations	Essence enters social interaction and differentiation
ʾafʿala (أَفْعَلَ)	Attribute assignment / state conversion	*ʾaktaba* "he made someone write"	Initiation from zero, emphasizing state change	Essence is received as an external directive
tafaʿʿala (تَفَعَّلَ)	Reflexivity / gradual process / psychological internalization	*takataba* "they corresponded with each other"	Inward/reflexive projection: action referring back to the subject	Self-return and internalization of the essence
infaʿala (اِنْفَعَلَ)	Passive reception / spontaneous change	*inkataba* "it was written, he was registered"	Passive reception: state change under external influence	Essence exists as passive matter
iftaʿala (اِفْتَعَلَ)	Deliberate action / feigned presentation / effortful achievement	*iktataba* "he copied, transcribed, registered"	Artificial construction: intervention of the subject's will	Essence is realized through human effort
ifʿalla (اِفْعَلَّ)	Extreme of attribute / state saturation	*iḥmarra* "became red" (from root *ḥ-m-r*, color/defect verbs)	State saturation: reaching the extreme boundary	Extreme manifestation of the essence
istafʿala (اِسْتَفْعَلَ)	Seeking / cognitive judgment / effortful acquisition	*istaktaba* "he asked someone to write, or considered someone worthy to write"	Seeking and judgment: subject oriented toward the future or value	Essence becomes the object of pursuit or the standard

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As can be seen from Table 2, each augmented pattern is not a mere modification of the root meaning but rather a "generative rule" that defines the relational modality (causative, reciprocal, passive, intensive, reflexive, seeking, etc.) through which the same essence manifests itself in the world. This architecture of "single source → multiple rules → diverse phenomena" represents the projection and unfolding of emanationist thought at the semantic level, and constitutes the linguistic crystallization of the essentialist cosmology characteristic of Semitic‑Hamitic peoples.

By contrast, the associative compound system of Chinese characters can be interpreted as "integration" because its configurational mechanism exhibits three other key features: (1) multiplicity of components ‑ at least two independent signs participate in the combination; (2) spatial simultaneity ‑ all components are perceived at once within the same planar field; and (3) emergence ‑ the holistic meaning cannot be reduced to the literal meaning of any single component but arises from the semantic relations among the components. This resonates with the cosmogonic model of "mutual generation and mutual overcoming" (xiāng shēng xiāng kè) and "sympathetic transformation" (jiāo gǎn huà shēng) found in the yin‑yang and Five Phases doctrine. Luo Dongqing argues that every Chinese character is a "language picture" (yǔyán túxiàng); understanding a character means grasping the spatial arrangement of its internal components in a moment of intuition, rather than tracing back to a deep source (Luo Dongqing, 2025). Furthermore, the "image" (xiàng) in Chinese is characterized by chunkiness and discreteness; "images of images" (xiàng xiàng zhī xiàng) generate new meanings through juxtaposition and combination without requiring connectives ‑ a typical manifestation of spatial thinking (Li Jian & Wang Wenbin, 2020).

Table 3. Correspondence Between Chinese Character Configurational Modes And The Philosophy Of "Integrative Generation"

Configurational mode	Typical examples	Combinatorial relation	Cognitive operation	Corresponding philosophical model
Pictograph (象形)	日 (sun), 月 (moon), 山 (mountain)	Single image	Direct depiction	"Concrete objects/images" in *yin-yang* and Five Phases
Self-explanatory (指事)	上 (above), 下 (below), 刃 (blade)	Image + abstract sign	Spatial localization	"Orientation" and "indication" within a relational framework
Associative compound (会意)	休 (rest: person + tree), 明 (bright: sun + moon)	Juxtaposition of two images	Spatial gestalt: instantaneous grasp of new meaning from juxtaposition	Sympathetic transformation (*jiāo gǎn huà shēng*) of *yin* and *yang*
Phonetic-semantic compound (形声)	江 (river: water + work), 晴 (clear sky: sun + blue)	Semantic radical + phonetic component	Horizontal linkage between semantic and phonetic domains	"Five Phases" matching and category-based resonance
Mutual explanatory / Phonetic loan (转注/假借)	老 (old) → 耄 (aged); 无 (none, borrowed from 舞 "dance")	Meaning extension or homophonic borrowing	Horizontal transfer within the semantic network	Metaphor and metonymy in correlative thinking

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As can be clearly seen from Table 3, each new meaning of a Chinese character does not derive from some "deep essence" but is generated through the interaction of multiple equivalent and perceptible components on the same plane. This logic of integration closely parallels the cosmogonic model of "mutual generation and mutual overcoming" (xiāng shēng xiāng kè) and "sympathetic transformation" (jiāo gǎn huà shēng) found in the yin‑yang and Five Phases doctrine.

Synthesizing Tables 2 and 3, the differences in word formation between the two languages point clearly to two distinct ontological presuppositions:

The vertical derivation of Arabic points to a "top‑down" essentialism: the root is the abstract essence, while derived words are the concrete manifestations of that essence under specific rules. The horizontal integration of Chinese characters, by contrast, points to a "relation‑emergent" holism: meaning does not originate from a deep source but is generated through the synchronic juxtaposition and mutual definition of multiple components. These two models are neither superior nor inferior to one another; they simply reflect the two civilizations' different answers to the fundamental question of how being comes into being.

Cognitive Explanation and Philosophical Origins of the Differences

The formal features of language are not arbitrary; rather, they stand in a mutually causal relationship with a people's conceptual paradigms and philosophical traditions. The "vertical derivation" of Arabic and the "horizontal integration" of Chinese constitute two linguistic models of "being" and "becoming." The former shapes an essentialist, hierarchically projective mode of thinking and resonates with Neoplatonic emanationism; the latter cultivates a relationalist, spatially juxtapositional mode of thinking and aligns closely with the doctrines of yin‑yang, the Five Phases, and the unity of heaven and humanity (tiān rén hé yī). The distinct formational configurations of the two languages are, in essence, two civilizations' different imaginings of the fundamental order of the world.

1. Shaping of cognitive habits: from linguistic structure to mental set. For Arabic, the root-and-pattern system instills in native speakers a habit of "essence reduction." Confronted with a triliteral root (e.g., k-t-b) and its numerous derivatives (kātib, maktūb, kitāb, kattaba, etc.), the user unconsciously seeks a common, deep, abstract essence across different phenomena. More importantly, the augmented verbal patterns (see Table 2) teach native speakers that the same essence can manifest as different phenomena according to different relational modalities (causative, reciprocal, passive, request, etc.). This cognitive orientation tends toward essentialism, hierarchical thinking, and causal determinism. From the perspective of writing system origins, although Arabic is an alphabetic script, the root-and-pattern system retains traces of a "semantic deep structure." Proto-Semitic likely developed a word-formation logic in which consonants carry the semantic core and vowels encode grammatical roles; this logic was later fixed into a highly regular derivational system, which in turn reinforced users' sensitivity to "deep abstract structure." A telling piece of evidence is that the first dictionary of Arabic, Kitāb al-ʿAyn, is arranged not alphabetically but according to place of articulation (from pharynx to lips) (Talmon, 1997; Ullah, 2020) − this ordering itself embodies a vertical tracing back to the

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"source of phonetic generation. For Chinese, the cognitive habit takes a different direction. Faced with the combination of "person" (人) and "tree" (木) to form "rest" (休), the user does not ask what the deep essence of "person" or "tree" is, but instead performs a "relational gestalt": "What is a person leaning against a tree doing?" As Li Jian and Wang Wenbin put it, "meaning is born from images, and the image is the meaning"; meaning emerges from the gaps and juxtapositions between images. This cognitive orientation tends toward contextualism, relational thinking, and holistic intuition. From the perspective of writing system origins, Chinese has never abandoned the fundamental feature of ideographic writing. Even though phonetic-semantic compounds constitute the vast majority of characters, the semantic radicals still retain image-based meaning cues, so that Chinese characters have never been fully "phoneticized," thereby preserving the basic logic of spatial composition. Moreover, features of Chinese run-on sentences such as "zero anaphora" and "optional appearance of subjects" (He Wei & Xiang Zhenbiao, 2024; Mao Junyu, 2024) further reinforce users' adaptation to spatiality, chunkiness, and non-linearity − they are accustomed to automatically filling in semantic relations among seemingly discrete chunks, rather than relying on overt logical connectives.

2. Interaction of philosophical traditions: language as the "material basis" of thought. Linguistic structure not only shapes cognition but also interacts deeply with philosophical thought. In the Arab world, the grammatical tradition exemplified by Sībawayhi's Kitāb, in its description of the root-and-pattern system, effectively provided a categorical framework for a cosmology of "mono-derivation and hierarchical manifestation." Notably, a profound interaction exists between the Arabic linguistic tradition and Islamic philosophy, particularly the Peripatetic tradition shaped by Neoplatonism. Al-Fārābī was both a philosopher and a linguist; Ibn Sīnā's discussion of the relation between roots and meanings directly influenced his system of emanationism. Before Sībawayhi, grammarians had already come under the influence of the Greek logical tradition (the so-called "early Iraqi grammar"), a tradition later superseded by Sībawayhi's Kitāb (Talmon, 1997). Thus, when Neoplatonic emanationism was transmitted to the Islamic world, its absorption into Islamic philosophy was not an accidental cultural diffusion. Rather, it occurred because its core scheme resonated strongly – through an isomorphic resonance – with the "linguistic instinct" of native Arabic speakers. In China, the situation is markedly different. The tradition of "lesser learning" (xiǎo xué – philology, phonology, and exegesis) never developed an ontology analogous to the Western binary framework of "essence-phenomenon." Xu Shen's liù shū is a pragmatist taxonomy, yet it was precisely this taxonomy that provided the rich "relational atoms" for later correlative thinking (guānlián xìng sīwéi) – yin-yang, the Five Phases, and the eight trigrams are all essentially a horizontal network of relations, exactly isomorphic with the spatial juxtaposition logic of Chinese characters. The thinking trait of "subject-object fusion" in Chinese is reflected in syntax as a strong-context feature of "little explicitness and much implicitness," which stands in direct continuity with the spatial thinking of Chinese characters that "establish meaning through images" (He Wei & Xiang Zhenbiao, 2024).

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Counterexamples and Theoretical Limits

Any typological comparison inevitably faces the challenge of counterexamples. This section candidly discusses marginal phenomena that do not fully conform to the "vertical" or "horizontal" models proposed above.

1. Compounds in Arabic. Arabic does have a small number of compound words, such as bismillāh ("in the name of God," composed of bi- + ism + Allāh) and lā-samāḥa ("excuse me/pardon," composed of the negative particle lā + the noun samāḥa). However, these compounds are mostly fossilized religious or polite expressions, limited in number, and their formation does not reflect the main tendency of Arabic word formation. More importantly, even in these compounds, the internal components can still be analyzed as products of root-based derivation; thus, they do not undermine the basic characterization of Arabic as "derivation-dominant."
2. Derivational affixes in Chinese. Modern Chinese has structures that resemble derivational affixes, such as -zi (桌子 zhuōzi "table," 椅子 yǐzi "chair"), -er (花儿 huā’er "flower," 鸟儿 niǎo’er "bird"), and -tou (石头 shítou "stone," 木头 mùtou "wood"). On the surface, these suffixes might appear to constitute a kind of "vertical" derivation (root + suffix). However, a closer analysis reveals that: (a) these suffixes are largely the result of phonological weakening (neutral tone), and their semantic contribution is extremely limited; (b) they do not change the word class or basic meaning of the core word, functioning more as markers of "prosodic words" than as genuine derivational morphology; and (c) compared with the systematic, highly productive vocalic pattern derivation of Arabic, Chinese "affixes" are few in number, limited in productivity, and often colloquial or in the process of grammaticalization. Therefore, they do not constitute counterexamples to the "horizontal integration" model proposed in this paper; rather, they may be seen as marginal borrowings or peripheral phenomena outside the mainstream logic of Chinese.
3. Limits of the theory. The "vertical vs. horizontal" model proposed in this paper is an ideal type. It is intended to highlight the core tendencies and philosophical implications of the two word-formation systems, not to assert that Arabic contains no trace of horizontal thinking or that Chinese contains no trace of vertical derivation. Language is a complex organism, and marginal phenomena and irregular forms will always exist. The value of our model lies in providing a clear, operable contrastive framework, so that the comparison between the two systems is no longer a fragmented list of isolated features but a systematic contrast with internal coherence and explanatory power.

CONCLUSION

The root-and-pattern derivation of Arabic and the liù shū (six scripts) configuration of Chinese characters have long been placed in two distinct linguistic narratives: the former subsumed under the morphological typology of the Semito-Hamitic (Afroasiatic) family, the latter interpreted as the unique configurational logic of an ideographic script. In fact, the word-formation differences between the two languages are not merely structural differences in language; they are the concrete embodiment of different philosophical worldviews of different civilizations - the philosophical cognition of a people shapes the way its language is created, while the forms of language in turn

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carry and manifest the linguistic philosophy behind them. Emanation and aggregation are precisely the two distinct paths of meaning generation offered by these two civilizations. The "emanation" feature of Arabic word-formation is highly homologous with the philosophical tradition in Arab civilization that "all things flow from the One". Its word-formation tends toward a "top-down" generative model: the triliteral consonantal root, like the One in Neoplatonism, is the ultimate source and abstract essence of all derived words. Through vowel alternations, affixation, and pattern expansions, this abstract essence emanates step by step, transforming into concrete, closely related words. This vertical logic of meaning generation deeply resonates with the Islamic philosophical cosmology of "all things originate from a single ultimate reality", tracing the diversity of language back to a unified transcendent source and thereby legitimizing the existence of diversity.

The "aggregation" configurational logic of Chinese characters, by contrast, is directly continuous with the holistic thinking of Chinese civilization, as embodied in the "mutual generation and mutual overcoming of yin-yang and the five phases" and "sympathetic transformation". The configuration of Chinese characters never begins with an abstract essence but is based on concrete, independent pictographic components, each of which is itself a complete carrier of meaning. The generation of higher-order meaning does not come from "derivation" from a hidden source, but rather emerges through the spatial juxtaposition of these components and the associative interaction of their meanings, aggregating into a new connotation. This logic of horizontal aggregation precisely manifests the core cognition of Chinese civilization - "acknowledging the coexistence of multiple elements and generating holistic order through dynamic balance" - with meaning embodied in holistic harmony.

Finally, this paper leaves room for further inquiry in two directions. First, this study focuses on the levels of word-formation and character configuration; the philosophical implications of phonological systems have not been systematically analyzed. The philosophical metaphor of vowel alternation in Arabic, and the aggregative features of tones in Chinese, both merit deeper exploration. Second, the present argumentation is primarily theoretical and interpretive, and has not yet tested the cognitive preferences of native speakers directly through empirical methods such as behavioral experiments or neurolinguistic experiments. Subsequent research may supplement and refine the conclusions through empirical studies, thereby enhancing the persuasive power of the findings.

ETHICAL APPROVAL

All participants received a comprehensive explanation regarding the research objectives and procedures, including their right to participate voluntarily. Participants were assured that participation was not mandatory and that they had the right to withdraw at any time during the study without negative consequences. To ensure the confidentiality of identities, all data obtained in this study underwent an anonymization process.

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CONFLICT OF INTEREST

The author declare that there is no conflict of interest related to the research, authorship, or publication of this article.

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