The Structure and Function of Mind-Wandering in Chinese Regulated Verse

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Abstract: The aesthetics of poetry is intricately intertwined with the cognitive process of mind-wandering, where attention shifts from the current task and spontaneous thoughts emerge. While mind-wandering has been extensively studied in psychology and neuroscience, its potential relationship to poetry remains underexplored. This study investigates the experience of mind-wandering associated with traditional Chinese regulated verse (律詩), which effectively enables the exploration of inner emotions and perceptions within its concise form. Typically, the first couplet of a regulated verse poem describes how mind-wandering is triggered by a place or event rich in semantic information. The second and third couplets use parallelism to create two distinct mental spaces, with the primary goal of encouraging the mind to wander between them. By meditating on parallel words in these two couplets, readers can reflect upon their essence through creative thinking and sensory imagery. Finally, the fourth couplet serves as a metacognitive endpoint, revealing the self’s position in the universe by evaluating the content of mind-wandering. This study demonstrates how the structure of regulated verse artfully represents the poet’s experience of mind-wandering, providing readers with the opportunity to re-experience this process with spontaneous and controlled cognitive activity.

Keywords: cognitive psychology; default mode network; mental imagery; parallelism; poetry

1. Introduction

The creation and appreciation of poetry can foster critical reflection on reality and promote the exploration of an individual’s inner world. Through the use of verbal expressions as “functional units” of elaborate meanings, poets reconstruct words and images into complex forms that organize cognitive and emotional aspects (Shaw 2008). This reconstruction process relies on the active generation of mental imagery, which entails combining and modifying stored perceptual information in novel, personalized ways (Kosslyn et al. 2001). The cognitive process of mind-wandering, characterized by the emergence of spontaneous thoughts and the diversion of attention from the current task (Seli et al. 2018b), shares similarities with mental imagery (Villena-González and Cosmelli 2020). Mind-wandering is likely fundamental to the creation and appreciation of poetry due to its adeptness in generating complex and vivid images and meanings. Psychologists have suggested that mind-wandering serves several possible functions, including the formulation of plans and strategies for personally significant future goals, creative problem-solving, and the flexible switching between different streams of thought to help manage multiple goals (Mooneyham and Schooler 2013). In a similar vein, poetry can help individuals better navigate their lives and the world around them, thus facilitating the reimagining and restructuring of their life objectives.

The association between mind-wandering and poetry can be attributed to the neural substrates of the self, specifically the default mode network (DMN) in the brain. The DMN plays a crucial role in internally directed processes, such as self-referential thinking,
creative thinking, prospection, and mind-wandering (Mason et al. 2007; Qin and Northoff 2011; Uddin et al. 2009; Zabelina and Andrews-Hanna 2016). The DMN is deactivated during cognitive tasks and activated during the generation of self-related thoughts, allowing the individual to engage in spontaneous and unconstrained thinking, characteristics that are also observed in the creation and appreciation of poetry. Previous studies have shown that the creation (Liu et al. 2015) and appreciation (Wassiliwizky et al. 2017) of poetry can lead to increased activity in the anterior and posterior cortical midline regions within the DMN. In addition, the act of creating poetry around familiar themes, which often involves drawing on knowledge or experiences from long-term memory to imagine scenes, has been found to recruit more functional connections between the DMN and the executive control network (He et al. 2022). The DMN underpins the generation of candidate ideas, while the executive control network is involved in constraining creative thoughts to meet specific objectives (Beaty et al. 2016). Poetry creation may provide an opportunity for past self-experiences to be restructured and reinterpreted in poetry, potentially improving the sense of self.

Despite the extensive research on mind-wandering in psychology and neuroscience, the significance of this cognitive process for poetry remains an area of limited exploration in the humanities. The aim of the present study was to put forward a framework that outlines the structure and function of the mind-wandering process within Chinese regulated verse (律詩) during the Tang dynasty (618–907 CE). Regulated verse is a poetic form that must comply with specific rules. Its lines are of equal length and consist of either five or seven characters. Each regulated verse poem consists of eight lines grouped into four couplets, with the second and third couplets requiring strict parallelistic diction, also known as parallelism. To achieve parallelism, similar or contrasting concepts should be juxtaposed, with nouns paired with nouns, verbs paired with verbs, adjectives paired with adjectives, and adverbs paired with adverbs. Regulated verse also has strict rules regarding tonal patterns, with all even-numbered lines required to rhyme. In heptasyllabic regulated verse, the concluding character of the initial line consistently rhymes with the terminal characters of the even-numbered lines.

In terms of function, regulated verse often embodies the poet's exploration of their position in the universe. This profound exploration is closely linked to the use of parallelistic diction in the central two couplets of the poem and the implied mental navigation characterized by free thoughts wandering between them. By condensing their experience of mind-wandering into a poem, the poet enables readers to re-experience this process while reading. The present study adopts a cognitive psychology perspective to shed light on the potentially adaptive role of poetry and mind-wandering. Additionally, this research offers psychologists an opportunity to acquire insights into the historical, cultural, and literary aspects of mind-wandering. Such insights are markedly distinct from the experimental approaches commonly used in psychology.

2. Stimulus-Dependent Intentional Mind-Wandering

The concept of mind-wandering is frequently discussed alongside related constructs such as spontaneous thinking, creative thinking, mental travel, daydreaming, and mindfulness meditation. These varieties of mind-wandering share certain features that arise during moments when the mind wanders. Recognizing that mind-wandering is a cluster concept with a probabilistic structure rather than a rigid definition, Seli and colleagues proposed a "family-resemblances" framework for mind-wandering research, where membership in the mind-wandering family is graded along multiple dimensions (Seli et al. 2018a, 2018b). The current study of regulated verse adopts this view but only addresses a few dimensions of mind-wandering. This section concentrates on two critical dimensions: stimulus dependence and intentionality.

Mind-wandering is characterized by the ability to maintain awareness of one’s surroundings, setting it apart from dreaming. However, the relationship between the content of mind-wandering and environmental stimuli has sparked controversy regarding its def-
inition. While some researchers define mind-wandering as producing thoughts unrelated to current external stimuli (Killingsworth and Gilbert 2010; Smallwood and Schooler 2015), this definition may be overly restrictive. Thoughts associated with stimuli may also be perceived as mind-wandering by many individuals (Seli et al. 2018b). This view is supported by an experimental study by Faber and D’Mello (2018), which found that semantically rich stimuli can lead to mind-wandering related to the stimuli, and consecutive thoughts often have semantic associations because one thought can trigger and constrain the next thought, while another source may trigger several thoughts independently to some extent. The notion that mind-wandering can be linked to stimuli highlights the relationship between mind-wandering and the aesthetic experiences derived from artistic or literary works. In fact, poets often use environmental stimuli as a trigger for mind-wandering and guide readers to follow their wandering thoughts by incorporating these stimuli into their poems. This can create a shared sensory experience between the poet and reader, enabling the reader to enter the poet’s world.

The phenomenon of spontaneous association leading to mind-wandering, in which one thought triggers the next or another source triggers thoughts independently, is observable in regulated verse. For instance, the poem “The Tower of Yellow Crane” (黃鶴樓) by Cui Hao (崔顥) serves as an excellent example of this phenomenon:

昔人已乘黃鶴去，此地空餘黃鶴樓。
黃鶴一去不復返，白雲千載空悠悠。
晴川歷歷漢陽樹，芳草萋萋鸚鵡洲。
日暮鄉關何處是？煙波江上使人愁。

Once upon a time an immortal flew away on the back of a yellow crane, What remains of the tale here is a tower bearing its name. The heavenly creature once gone has never returned, For thousands of years white clouds have in the skies drifted in vain. Before me runs the clear river water, vivid in the distance are trees of Hanyang, And the so-called Parrot Isle is a lush, verdant place. I look towards the direction of my hometown as twilight starts to fade, A haze begins to mist over the river engulfing me in a homesick state.¹

This poem exemplifies the multiple relationships that can emerge between mind-wandering and the environment. The Yellow Crane Tower’s semantic richness plays a crucial role in inducing mind-wandering. In the first couplet, the author depicts a legendary figure leaving on a crane while he is left behind in front of an ordinary tower. This imagery triggers and constrains the next thought of ephemeral existence and the passing of time, as expressed in the second couplet. The juxtaposition of time and space creates a sense of historical depth and spatial expansiveness. In the third couplet, a distant scene triggers thoughts unrelated to the tower, illustrating the non-linear nature of mind-wandering. The disruption of continuity between the central two couplets enables readers to sense that the protagonist of the poem is engaged in mind-wandering. The fourth couplet represents a moment of self-reflection in which the author contemplates his existence, enveloped in mist and solitude. This observation is rooted in the correlation between the contents of mind-wandering and the self, highlighting the presence of metacognitive processes. It is noteworthy that in traditional Chinese poetry, the subject of a poem is rarely explicitly stated. Therefore, the final line of this poem could be translated as “A haze begins to mist over the river engulfing someone in a homesick state.” The original poem does not specify that “someone” refers to the author, thus allowing readers to engage in self-projection.

The structure of regulated verse reflects the process of mind-wandering, where the first and fourth couplets correspond to the initiation and evaluation stages, respectively. This feature is significant as it touches upon the issue of whether mind-wandering is intentional. The differentiation between unintentional and intentional mind-wandering pertains to the occurrence or initiation of mind-wandering episodes rather than their maintenance (Smallwood 2013). Seli et al. (2016) pointed out that people engaging in uninten-
tional mind-wandering usually lack a clear moment of conscious initiation and metacognition, thus being unaware that they are engaged in mind-wandering. On the other hand, people have clear awareness when initiating and engaging in a period of intentional mind-wandering. Mind-wandering associated with regulated verse is typically intentional, as the first couplet presents the deliberate initiation of wandering thoughts. Interestingly, while the intentionality of a mind-wandering episode may be fixed at the beginning, meta-awareness may dynamically unfold as the episode progresses (Seli et al. 2017).

The poem “The Tower of Yellow Crane” demonstrates how a shift in mind-wandering content can prompt the poet to redirect their attention from the artistic realm to reality in the fourth couplet. The vivid and vibrant scenery depicted in the third couplet abruptly brings the poet’s attention to the surroundings, leading to heightened metacognition and evaluation of his mind-wandering. Previous research has suggested that metacognition can moderate the impact of mind-wandering on creativity, implying that creativity may rely on a specific blend of controlled and spontaneous cognitive processes (Preiss et al. 2019). While creative thinking involves generating and evaluating creative ideas, mind-wandering also involves the spontaneous generation of thoughts that may then be subject to more deliberate evaluation and reflection (Fox and Beaty 2019). The final insight about the author’s existence in “The Tower of Yellow Crane” marks a critical moment in the creative process of the wandering mind, highlighting the significant role that executive control may play in terminating mind-wandering and evaluating the content of the current thought.

3. Wandering between Two Mental Spaces

Regulated verse typically adheres to the practice of employing parallelistic diction in the second and third couplets, while the first and fourth couplets lack this characteristic. In his study of regulated verse, Kao (1991) coined the term “to let the mind roam between spaces” (遊心空際) to describe the experience of readers and poets of freely exploring their thoughts between the second and third couplets. These two couplets establish two separate mental spaces that are intricately crafted using parallelistic diction. The juxtaposition of these seemingly autonomous couplets emphasizes the fluid and unconstrained nature of wandering thoughts. For example, Li Bai’s (李白) “Atop the Phoenix Lookout of Jinling” (登金陵鳳凰臺) effectively demonstrates this concept:

鳳凰臺上鳳凰遊, 凤去臺空江自流。
吳宮花草埋幽徑, 晉代衣冠成古丘。
三山半落青天外, 二水中分白鷺洲。
總為浮雲能蔽日, 長安不見使人愁。

On top of the Phoenix Terrace phoenixes used to roam,
Now gone are phoenixes, a desolate lookout remains as the river continues to flow.
Flowers and verdure of the Wu Palace are now buried under isolated trails,
The upper ranks and decorated officers of Jin are now mounds topped with growth.
The barely discernible Trident Peaks range beyond the blue skies,
The river waters part into two waterways that around the Egret Islet roll.
Floating clouds eventually the sun conceal,
Being so far away from Changan has me worried in shadow.

The first couplet of this poem establishes the setting and intentionality of the subsequent mind-wandering episode. It does so by highlighting the contrast between the past glory and present desolation of the Phoenix Terrace, which serves as the trigger for mind-wandering. The second couplet portrays a mental space that conveys the impermanence of worldly achievements. This focus on dynastic changes is then contrasted with an abrupt return to the present scenery in the third couplet, creating a disruption of continuity between the central two couplets and a free flow of thoughts. The technique of disrupting
continuity was adapted from Cui Hao’s “The Tower of Yellow Crane” but was considerably elaborated on in terms of its affective aspect and use of metaphor.²

The second and third couplets of “Atop the Phoenix Lookout of Jinling” present relatively objective scenes, in contrast to the emotional emphasis in the final couplet. While the second couplet continues the train of thought from the first couplet, its beauty of parallelletic diction and images allows the reader to appreciate it independently of the rest of the poem. The third couplet diverges further from the preceding context. Here, the poet invites the reader to appreciate the beauty of nature for its own sake, unencumbered by the melancholy that pervades the previous couplets. The viewer in the poem seems to possess an uncanny ability to compose the landscape, not unlike a painter of shan shui (山水; literally “mountains and streams” or “landscape”) style of traditional Chinese painting. Such painters use vivid and expressive brushwork to create a sense of natural movement and energy. After romantic and unrestrained imagination, the fourth couplet draws the reader back into the harsh reality of human society, utilizing a metaphor of floating clouds to represent the obstacles that obscure the light of the monarch. This metaphor bridges the gap between the natural scenery depicted in the third couplet and the somber portrayal of human society that underpins the poet’s melancholy in the final line. Notably, “Floating clouds eventually the sun conceal” may pose an ambiguity that confuses the reader as to whether it is an objective observation or a metaphor. Resolving this ambiguity requires cognitive operations that optimize poem comprehension and involve executive control mechanisms such as updating working memory, shifting mental sets, and inhibiting automatic processes (Friedman and Miyake 2017). Executive control may also contribute to the metacognition and termination of the mind-wandering episode. Writing techniques elaborating on the wandering between mental spaces in regulated verse were developed during the Tang Dynasty, with a significant purpose being to articulate the final insight obtained in the fourth couplet.

Examining regulated verse is pivotal to understanding the relationship between poetry and mind-wandering, primarily because of the parallelism in its second and third couplets, which is a defining structural trait. In order to comprehend the nature and function of these couplets, it is helpful to investigate the two literary genres that played a role in the emergence of regulated verse: shan shui poetry and tian yuan (田园; literally “fields and gardens” or “pastoral”) poetry, both of which flourished in the first half of the fifth century. Shan shui poetry contributed to the development of regulated verse by showcasing how parallelistic diction can unify the observed scenery during a personal journey into an independent and integrated artistic concept (Kao 1986). These poems often combine narration and scene description to portray the changing landscape during the journey. However, tian yuan poetry, with its emphasis on a static viewpoint and a “non-action” (無為) attitude, loosens the temporal and spatial continuity in shan shui poetry. This principle of “non-action” is deeply anchored in Daoist philosophy.

In contrast to shan shui poets, who undertook physical journeys, tian yuan poets navigated mentally by wandering between external and internal worlds in daily life. The renowned tian yuan poet Tao Yuanming (陶淵明) emphasized the aesthetic significance of experiencing life with intuition and finding meaning in everyday familiar things and events (Kao 1986). Wang Wei (王維) continued this philosophical and literary tradition, and his “Verses on Wangchuan Village on Rainy Days” (積雨耕川莊作) is widely regarded as an exemplary work of tian yuan poetry during the Tang Dynasty:

積雨空林煙火遲，蒸藜炊黍餉東菑。
漠漠水田飛白麩，陰陰夏木囀黃鸝。
山中習靜觀朝槿，松下清齋折露葵。
野老與人爭席罷，海鷗何事更相疑?
It has been raining for days and smoke from stoves is slow to rise,  
Meals have been made and taken to the fields on the east.  
Over rice paddocks fly egrets above watery fields,  
In the shade of summer foliage chirp orioles in the green.  
I’ve been in the mountains in search of tranquility and admiring hibiscus in the morn,  
Eating light vegetarian meals and picking okra leaves under pine trees.  
I’m now a man out of office, not competing for anyone’s seat,  
Why do shearwaters doubt my goodwill and their high flights keep?

The first couplet of the poem portrays the tranquility of rural life amidst a rainy season.  
After the objective portrayal of nature in the second couplet, the third couplet reveals the poet’s quest for solitude in the mountains.  
The fourth couplet emphasizes the poet’s simple and harmonious way of life by quoting two philosophical allusions.  
This poem exemplifies another critical element of regulated verse identified by Kao (1986): “casualness in the temporal flow of events.”  
The central two couplets each create a world where the poet desires to return or stay long-term, while the juxtaposition of these two couplets conveys a sense of casualness and ease in the transition between actions without any conscious intention or control.  
Wang Wei, in this poem, carried forward the literary spirit of Tao Yuanming, who employed the technique of juxtaposing multiple couplets to portray the accidental and unplanned processes, which are significant for the leisure of a tranquil life (Kao 1986).

From a cognitive neuroscience perspective, the absence of executive control and the functional predominance of the DMN, a network that exhibits high levels of activity during task-negative (resting) states (Fransson 2006), may be associated with the casualness of one’s actions and thoughts.  
Recently, there has been an attempt to link the DMN, spontaneous thoughts, and mind-wandering to early Chinese concepts of “non-action,” which suggest a way of relating to situations with naturalness rather than exerting control (Eifring 2019).  
Moreover, the author posited that spontaneous thoughts operate within a complex ecosystem, wherein they are closely intertwined with larger networks of both internal and external influences.  
The present study follows this approach and further points out that Wang Wei employed a literary technique that conveys the ideals of life through a flow from the external to the internal world in the central two couplets of “Verses on Wangchuan Village on Rainy Days”.  
This flow not only occurred naturally in his life but also reflects the role played by the DMN in mind-wandering.  
Yeshurun et al. (2021) identified the DMN as an active and dynamic network for meaning-making, influenced by external information accumulated over time, personal memories, and knowledge.  
The apparent casualness of the flow from the external to the internal world in the poems of Wang Wei and Tao Yuanming can be considered an artistic technique for conveying the meaning of life.

4. Search for Self-Identity through Mind-Wandering

Halting to observe the landscape and reflecting on the flux of history is a significant approach for Chinese literati to seek personal positioning.  
Through this experience, individuals’ responses and contemplations unveil their innermost values and ideals.  
An instance of this tradition can be seen in Kao’s (1986) observation that Du Fu’s (杜甫) use of allusions and profound sense of history allowed him to paint a self-portrait within a historical context.  
This highlights the importance of personal positioning in the context of human history.  
Du Fu’s “The Premier of Shu” (蜀相) is an excellent example of his concern for society and people:

丞相祠堂何處尋, 錦官城外柏森森。  
映階碧草自春色, 隔葉黃鸝空好音。  
三顧頻煩天下計, 兩朝開濟老臣心。  
出師未捷身先死, 長使英雄淚滿襟。
Where lies the shrine commemorating the renowned Premier of Shu?
On the outside, the Magnificent City is surrounded with groves of cypress trees.
The terrace contrasts the spread of green lawn painting a field of spring,
Through the foliage comes orioles’ singing, in vain it seems.
His hut was frequented thrice over, he was sought after to warring states pacify,
He gave his heart and soul in helping his master and son establish a state of ideals.
Yet he died before his military expeditions for unity could succeed,
His regret often has those of similar aspirations weep tears of grief.

The poet’s reverence for Zhuge Liang’s (諸葛亮, the premier of Shu) wisdom and moral character is evident throughout the poem. The opening couplet serves as a tribute to Zhuge Liang by highlighting the cypress trees surrounding his shrine, symbolizing his unyielding spirit. In the second couplet, the poet invites the reader to follow in his footsteps and enjoy a picturesque natural scene with bright colors and birdsongs while highlighting the harsh reality that the country’s hope for rejuvenation is slim. The third couplet shifts the focus to history, depicting Zhuge Liang as a virtuous and wise prime minister who devoted himself to serving the people. Finally, the fourth couplet poignantly reveals Zhuge Liang’s tragic fate of dying before his lifelong wish could be fulfilled, evoking a shared sense of grief and lamentation among the poet and readers.

In contrast to Du Fu’s view of engagement with society and people, Cui Hao’s “Passing Hua Yin” (行經華陰) embodies the themes of reclusive thought and Taoist Immortal Cultivation:

岧嶢太華俯咸京, 天外三峰削不成。
武帝祠前雲欲散, 仙人掌上雨初晴。
河山北枕秦關險, 驛路西連漢畤平。
借問路旁名利客, 何如此處學長生?

The eminent Taihua Mountains tower over Xianyang the ancient capital, Into the sky soar the Trinity Peaks that could not have been pared by hand. Before Han Emperor Wu’s Great Spirit Shrine clouds begin to thin, Down below, rain begins to clear over the Peak of Heavenly Palm. To the north the Yellow River, Taihua give the Fort of Hangu its advantage, The main road extends westwards to the worship grounds of Han. I wonder aloud to travellers on the road seeking wealth and fame, Why not stay here in nature and life’s honest aspiration expand?

Immortals in Taoism are considered to be beings that transcend ordinary humans, possessing supernatural abilities that allow them to live forever without aging, ascend to immortality, and move freely in heaven and on earth. The poem “Passing Hua Yin” employs a surreal perspective that is reminiscent of the experience of a flying immortal, as suggested in the first and second couplets. The third couplet highlights the strategic importance of natural features in shaping human history and society, as well as the precariousness of human existence in the face of nature. The fourth couplet suddenly brings the speaker to the forefront, directly posing a question about life goals to the reader. The speaker’s unconventional viewpoint offers a wide and elevated perception of the world, which may encourage readers to rethink their position in the universe.

5. Modelling the Structure and Function of Regulated Verse

Drawing from the provided examples, one can observe that regulated verse blends structured mind-wandering with images or symbols that resonate with each other within the central couplets. This blend seems to suggest that the genesis of literary creation is rooted in mind-wandering, which gradually metamorphoses into symbolic expression. Ancient Chinese literary theories, as exemplified by Lu Ji’s (陸機) “Poetic Exposition on Literature” (文賦) and Liu Xie’s (劉勰) “The Literary Mind Carves Dragon” (文心雕龍), elucidate this very principle. According to these works, during the initial generation phase
of creation, the mind, unbound by corporeal confines, embarks on ethereal journeys, allowing fleeting visions of both past and present. Modern cognitive neuroscience reinforces this viewpoint. For instance, a study conducted by Liu et al. (2015) observed the neural dynamics of poets during the phases of poetic generation and revision. Their findings spotlighted enhanced activity in the medial prefrontal cortex, a pivotal region of the DMN, across both phases. Meanwhile, brain regions linked to conscious attention control showed reduced activity during the generation phase but heightened during the revision phase. These findings suggest that the initial generation phase induces a mental state akin to mind-wandering, marked by diminished conscious attentional control. This state facilitates spontaneous ideas and the formation of remote associations. As the poet transitions to the revision phase, control mechanisms engage, translating abstract thoughts and ideas into language and selecting the most apt expressions. This balance between spontaneity and control echoes the artistic ideals laid out in “Poetic Exposition on Literature” and “The Literary Mind Carves Dragon”, which emphasize the skill of encapsulating aesthetic experiences into symbolic expressions—the quintessential medium of literary art. Informed by these insights, Tang Dynasty poets, in their development of regulated verse, prioritized the equilibrium between mind-wandering and formal conventions. I posit that poets heavily relied on executive control when crafting the central two couplets of regulated verse. Executive control, in this context, refers to a set of cognitive processes facilitating information processing and behavior consistent with external rules, such as the rules of parallelism, and intended goals, such as the concluding couplet of a poem.

Regulated verse, with its intricate structure and array of images and symbols, guides readers into a journey of mind-wandering, enabling a deeper exploration of their emotions, perceptions, and inner selves. I propose a model to elucidate the structure and function of regulated verse. The architecture of this model is illustrated in Figure 1. Mind-wandering within this poetic form is typically triggered by a place or event rich in profound semantic information, leading the poet to intentionally generate thoughts. The first couplet establishes the significance of this trigger. Spontaneous associations then guide the poet to the second couplet, while unconstrained thoughts continue in the third couplet. Both second and third couplets use parallelistic diction to create their own mental space. The fourth and final couplet serves as a metacognitive termination of mind-wandering, achieved by recruiting executive control, which also facilitates the final insight into the self’s position in the universe. Overall, the fundamental purpose of regulated verse is to examine the self from a wide-ranging standpoint by navigating between the mental spaces engendered by the central two couplets. It should be noted that the model presented here was derived from a few regulated verse poems in the flourishing Tang dynasty, and caution should be exercised when generalizing this model to other regulated verse poems.

![Figure 1. One possible model of the structure and function of regulated verse. See the text for details.](image-url)
When individuals engage in self-evaluation of their thoughts, emotions, and experiences, adopting a macroscopic perspective of their environment can be beneficial. In classical China, a tradition among literati was to explore their position in relation to nature and human history. They often respected nature, sought harmony with it, and found a sense of value and meaning in their existence through their proximity to it. Furthermore, history almost replaced the position of Western religion in classical China and became the guardian connecting all human life and spirit with the memory of history, enabling humans to overcome their short lifespan and continue to exist (Chang 1992). This Chinese literati tradition sheds novel light on the nature of self-referential mental activity. During self-referential mental activity, individuals typically engage in processing knowledge and stimuli that are related to themselves (Kelley et al. 2002; Northoff et al. 2006). This type of processing may also involve comparing external information with their own past experiences, recalling and introspecting, and contemplating the nature and situation of the self. I propose that when individuals engage with traditional Chinese poems, their processing of information involves not only self-referential processing but also draws upon historical and cultural knowledge to abstract the meanings and values associated with events in their lives (Tsai 2023). This perspective is congruent with neuroscientific studies of the DMN, which emphasize its role in integrating and broadcasting memory and semantic representations to formulate an “internal narrative”, encapsulating our experiences and forging our sense of self (Menon 2023). Through regulated verse, poets and readers can imagine or reexperience their feelings and reflections in various situations. Such mental travel relies on one’s knowledge of the external world and, in turn, expands one’s understanding of it. This concept resonates with Faber’s (2020) proposal that mental travel and abstraction have a mutually beneficial relationship, wherein abstraction promotes mental travel, and mental travel facilitates abstraction.

According to Faber (2020), mind-wandering and mental travel play a role in facilitating abstraction by data augmentation. Specifically, mind-wandering provides variability in mental content, which enhances the distinctiveness of episodic instantiations and supports the extraction of invariant features of representations, ultimately leading to abstraction. The data augmentation induced by mind-wandering may involve (1) disrupted spatiotemporal contiguity due to exposure to a novel environment and (2) noise caused by partial activations of past experiences (Faber 2020). Interestingly, these two points seem to correspond to the wandering between the mental spaces created by the central two couplets of regulated verse and the functions of parallelistic diction used in them, respectively. In the remainder of this section, I will address the first point, while the second point will be addressed in the next section.

Regulated verse often allows readers to wander along the dimensions of space or time in the second or third couplet, with the transition between these couplets often involving a shift between space- and time-focused descriptions, representing disrupted spatiotemporal contiguity. For instance, “The Tower of Yellow Crane” and “Atop the Phoenix Lookout of Jinling” demonstrate a shift from time- to space-focused descriptions. In “The Premier of Shu,” the central two couplets shift from the present to history and from nature to the human world. The central two couplets of “Verses on Wangchuan Village on Rainy Days” present a shift from nature to the poet’s daily life. In “Passing Hua Yin,” the second couplet describes the cloud and rain near the mountains, while the third couplet highlights the connection between nature and human society/history. I hypothesize that the reader’s mental shifts while appreciating regulated verse may involve cognitive flexibility, a capacity allowing us to recalibrate our thoughts and behaviors when faced with changing priorities or contexts (Miyake et al. 2000). Wong et al. (2023) recently unveiled a pioneering perspective that links the act of mind-wandering to cognitive flexibility. They articulated that mind-wandering is not just a passive drift but rather an active process of suppressing task-oriented cognition and initiating unrelated thoughts. From this standpoint, the oscillation between space/time and nature/humanity concepts evident in the central two couplets of regulated verse, complemented by the termination of mind-wandering in the concluding
couplet, could potentially bolster the reader’s cognitive flexibility. By delving into regulated verse, the reader might acquire novel skills to view things through diverse lenses. However, this hypothesis necessitates further empirical validation in future research.

A point worth emphasizing is that mind-wandering is not merely a distraction; it is an exploration of our internal imaginative universe (Fazekas et al. 2021), differing substantially from processing external stimuli. In fact, imagining a scene requires more engagement of the DMN compared to observing a scene. A neuroimaging study by Wassilwizky et al. (2017) found that aesthetic pleasure induced by poetry was associated with increased activity in several brain regions, including the precuneus, a hub of the DMN. Since the precuneus has been implicated in cognitive empathy and mental imagery of high self-relevance, the authors suggested that it may support empathy towards protagonists and scenario visualizations arising from the semantic content of poems. This aligns with Varsano’s (2007) interpretation of traditional Chinese poetry, which proposes that readers must discern the tangible presence of the poet in the poem. In other words, poetry not only grants readers a glimpse into the poet’s vision but thrusts them into the very act of the poet’s observation.

After highlighting mind-wandering as an exploration of our inner imaginative realm, it is essential to delve into its perceptual intricacies. Such mental travels include visual, auditory, somatosensory, and motor representations (Delamillieure et al. 2010; Kosslyn et al. 2001; Stawarczyk et al. 2013; Villena-Gonzalez et al. 2016). In a study on multisensory images and emotions in poetry, participants created both a prose paragraph and a poem about a vivid mental image from their past experiences. The most common trigger for accessing information about a specific episode was visual images, followed by tactile and auditory images (Shaw 2008). The current study also examined the representational formats (or modalities) found in the central two couplets of the poems, which are summarized in Table 1. Visual representation was the most frequently used format, followed by sensorimotor representation. Changes in representational formats across these two couplets were also observed in a few poems. The diversity of representational formats may contribute to the generation of vivid and rich mental imagery during the wandering between mental spaces.

<table>
<thead>
<tr>
<th>Poem Title</th>
<th>Representational Format/Modality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Couplet</td>
<td>Third Couplet</td>
</tr>
<tr>
<td>The Tower of Yellow Crane</td>
<td>Visual</td>
</tr>
<tr>
<td>Atop the Phoenix Lookout of Jinling</td>
<td>Visual, sensorimotor</td>
</tr>
<tr>
<td>Verses on Wangchuan Village on Rainy Days</td>
<td>Visual, sensorimotor</td>
</tr>
<tr>
<td>The Premier of Shu</td>
<td>Visual, sensorimotor, auditory</td>
</tr>
<tr>
<td>Passing Hua Yin</td>
<td>Visual</td>
</tr>
<tr>
<td></td>
<td>Visual, sensorimotor, olfactory, gustatory</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Visual, sensorimotor</td>
</tr>
</tbody>
</table>

6. Parallelistic Diction and Elaboration of Word/Phrase Meanings

The multisensory imagery embedded in regulated verse is organized through parallelistic diction, which plays a significant role in promoting creative thinking during the appreciation of this poetic form. While parallelistic diction exists in Western poetry, it serves a particularly important function in regulated verse. This is because it facilitates the disassociation of words and phrases from their immediate context within a line, providing readers with an opportunity to contemplate and elaborate on their meanings through the use of sensory imagery.

The mental spaces constructed by the central two couplets of regulated verse allow for the emergence of the connotation of words. Connotation encompasses the implied or associated meanings of a word, detailing its attributes and connections without explicitly referencing specific objects. It includes the emotional, cultural, and historical nuances associated with a word. Poetry can capture and convey the complexities of the human psyche
through connotations, rendering it a potent instrument for introspection. Kao (1989) astutely noted that the parallel words in two parallelistic lines of regulated verse could establish connections that surpass the context of individual lines, thereby more effectively capturing the word’s connotation. In regulated verse’s parallelistic diction, readers may typically understand words based on their denotation, following their typical reading habits of interpreting words in the line’s context. However, if they break from their usual reading pattern and instead connect the parallel words across the paired two lines, they can grasp the essence of the words and interpret them based on their connotation (Kao 1989).

The tendency of readers to connect parallel words in regulated verse is rooted in the linguistic properties of the Chinese language. Parallelistic diction entails the repetition of analogous grammatical structures, phrasing, or words in two or more lines of poetry. This stylistic device is prevalent across diverse cultural traditions and has been shown to enhance a poem’s memorability and emotional resonance by establishing balance, rhythm, and flow (Hanauer 1996; Lea et al. 2008; Menninghaus et al. 2017; Tillmann and Dowling 2007). In lines of poetry that employ parallelistic diction, parallel components comprise words, phrases, or clauses that share similar grammatical structures and convey comparable meanings. Kao (1986) indicated that achieving correspondence between parallel words or phrases is often more straightforward in Chinese poetry than in Western poetry. This is attributable to the monosyllabic nature of the Chinese language, in which semantic segments consist of one or two syllables, and longer segments are composed of these basic monosyllabic and disyllabic units. In Chinese, the phonetic boundaries of a compound are also its semantic boundaries, assuring the relatively effortless attainment of perfect correspondence between parallel words/phrases.

Compared to Western poetry, the use of parallelism in the central two couplets of regulated verse can more effectively isolate parallel words and phrases from the line’s context, enabling the reader to gain insight into their essence. Faber (2020) suggested that activating episodic experiences during mind-wandering in unrelated or tangentially related contexts can foster abstraction through data augmentation, which involves the partial activation of experiences. In this context, the parallel words and phrases dissociated from the line’s immediate context may enable the reader to abstract their underlying essence because the contextual information is partially obscured. Furthermore, in traditional Chinese poetry, noun phrases often convey the essential sensory qualities of things without specific temporal or spatial references, a characteristic that distinguishes it from Western poetry. This phenomenon is related to the absence of definite articles and relative pronouns in traditional Chinese poetry (Kao and Mei 1971). As a result, mental images associated with noun phrases in regulated verse blend sensory concreteness with abstract reference. Kao and Mei (1971) noted that images in Chinese poetry are concrete in the sense that they evoke vivid qualities while also being abstract because they are not rooted in things—“in things whose parts or relations to other things are further specified.”

Partially due to their dissociation from the line’s context and their sensory concreteness, the parallel words and phrases in regulated verse tend to evoke sensory and physical imagery in readers. For instance, in “The Tower of Yellow Crane,” the combination of “yellow crane” (黃鶴) and “white cloud” (白雲) may depict a flying posture and vibrant hues. In “Atop the Phoenix Lookout of Jinling,” the juxtaposition of “isolated trails” (幽徑) and “ancient mounds” (古丘) may present an image of an enduring and quiet landscape, while “flowers and verdure” (花草) with “cloth and hat” (衣冠) may imply the delicate and transient nature of objects. In “The Premier of Shu,” the pair of “the terrace contrasting” (映階) with “through the foliage” (隔葉) may suggest a relationship between an object and other unspecified entities. Moreover, “a field of spring” (春色) with “good sound” (好音) may connote hope and beauty, while “states” (天下) with “the old minister” (老臣) may represent politicians serving the people. Finally, “Passing Hua Yin” uses “resting northwards” (北枕) and “extending westwards” (西連) to convey the idea of being in one place and then moving towards another. To generate sensory and physical imagery in regulated verse, the reader often needs to excavate the meanings of two parallel components repeatedly,
processing stored perceptual information in creative and personal ways. Metaphorically, the parallelism in regulated verse creates a confined space, with the paired two lines situated at opposite ends of this space. During the process of elaborating on the meanings of parallel words or phrases, the reader’s thoughts resonate and reverberate within this space, much like a ping-pong ball bouncing back and forth.4

The process of repeatedly excavating the meanings of two parallel components with thought resonance is connected to a unique technique found in traditional Chinese poetry known as double sound repetition. This technique involves repeating two identical characters to emphasize the sound, as well as to enhance the sonic beauty and connotation of the words. For example, in “The Tower of Yellow Crane,” the parallel words “li li” (歷歷; literally “vivid”) and “qi qi” (萋萋; literally “lush”) are both double sound repetitions. The juxtaposition of these two words creates a vivid sense of richness. Moreover, the shared bright phonetic quality of the two words may strengthen this feeling. On the other hand, the parallel words “mo mo” (漠漠) and “in in” (陰陰) in “Verses on Wangchuan Village on Rainy Days” describe the appearance of misty water and dense trees, respectively. These words are strategically placed at the beginning of the lines, accentuating the poet’s initial perception of the ambiguous misty sight and the unclear density before realizing that they are, in fact, water fields and trees. This implicit writing technique, combined with the soft sound attack and nasal quality of 漠 and 隱, possibly signifies the poet’s aesthetic attitude towards life, where sensing and feeling surpass cognition. Overall, these examples demonstrate that the sensory experience evoked by parallel words in regulated verse is not limited to their semantic meaning but also involves their sound quality.

In the context of reading the central two couplets of regulated verse, readers tend to focus on the abstract and universal essence of things, a phenomenon that can be explained by the construal level theory proposed by Trope and Liberman (2010). This theory aims to address how we can move beyond the immediate here and now to encompass more distant concepts. Our perceptual systems can build representations of things in the here and now, which belong to a relatively low level of construal. However, for distant landscapes, unfamiliar cultures, fantastic stories, and the distant past or future, high-level construals are required, relying on information and concepts stored in memory to construct them due to the elongation of psychological distance. In the context of regulated verse, isolating parallel words/phrases from the line’s context and integrating them may prompt a high-level construal, allowing the reader to grasp their abstract and profound nature. This is not due to the elongation of psychological distance but rather because the two parallel components that are being integrated originally belong to different lines located at opposite ends of the reader’s mental space.

Both high- and low-level construals are important and complementary in aesthetic experiences. The abstract essence of things, often associated with high-level construals, is helpful in transcending the current cognitive context. In contrast, concrete and specific details, often associated with low-level construals, are crucial for immersion in the present moment (Stillman et al. 2017). When appreciating regulated verse, readers can transcend the line’s context after comprehending the paired lines and repeatedly contemplate the parallel words/phrases to experience their shared sensory qualities. After gaining a profound understanding of the parallel words/phrases, readers can return to appreciate individual lines and further immerse themselves in the poem. Thus, readers’ mind-wandering that occurs within the paired lines of regulated verse involves the interweaving of high- and low-level construals to create a rich and multifaceted aesthetic experience.

7. Conclusions

Although each creator’s aesthetic experience is unique, literary works can capture and convey that experience to readers by providing appropriate information. Poetry has the capacity to condense self-experience into a moment of profound insight. Regulated verse, with its concise and structured form, is particularly adept at enabling mind-wandering and self-reflection, allowing poets and readers to explore their inner selves, emotions, and
perceptions. In contrast, the mind-wandering that occurs in daily life often lacks coherence and structure and is thus incapable of providing the same depth of aesthetic experience. This study explicates the relationship between mind-wandering and poetry, shedding new light on the adaptive function of poetry, namely, to explore the self’s position in the universe by wandering between mental spaces. This process involves both the mental generation of imagery and the evaluation of its content, with controlled and spontaneous cognitive processes likely interweaving to create the aesthetic world of poetry.

The distinct charm of regulated verse arises from its capacity to embody openness and freedom within its structured format. Even within the constraints of regulated verse and the expected theme of the fourth couplet, the liberty of poetic imagination persists. The wandering thoughts expressed in the second and third couplets can be regarded as strategic maneuvers, effectively highlighting the theme or emotion the fourth couplet intends to convey. Notably, while parallelism may appear constraining in form, it paradoxically fosters mind-wanderings. As readers navigate the nuances of similarities and differences within parallelism and across the central two couplets, they traverse a landscape of diverse imagery and ideas. This dance between mind-wandering and the structure imposed by parallelism exemplifies poetry’s dual nature: it serves both as an expression of emotion and a vehicle for complex cognitive engagements.

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**Notes**


2. Both “The Tower of Yellow Crane” and “Atop the Phoenix Lookout of Jinling” do not follow the norms of regulated verse in terms of tonal patterns, yet they are still regarded as masterpieces within this poetic form.

3. English translation of both texts can be found in (Owen 1996).

4. The deep exploration of two parallel components in regulated verse can reasonably be seen as mirroring Charles Bernstein’s concept of absorptive writing. Bernstein (1987) posited that short poems can deeply engage readers, a quality evident in “the poem completely caught up in its own internal acoustic & semantic dynamics”. From this perspective, when readers decipher two parallel components in a regulated verse poem, their minds are likely attracted by their sound and semantics, sparking a journey of exploration and creation. Thus, the wandering of thoughts in regulated verse can be regarded as an expression of Bernstein’s concept of absorptive writing.

**References**


