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Research article

Chromatic Representation of Ontological Attributes: Colour-Based Phraseology in the Light of Ramon Llull's *Ars Magna*

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Abstract

In 1937, Jorge Luis Borges looked back some 650 years at Ramon Llull's great arts which includes an *ars inveniendi* that inspired rational speculation ever since. Along with five essays that look though the lens of Borges at contemporary learning machines, this research paper adapts Llull's approach to offer a linguosemiotic analysis of English colour-based phraseological units. The aim of the work is to identify the mechanisms by which sacral chromatic codes are transformed into the pragmatic meanings of English idioms, and to establish typological patterns in the transition from the metaphysical attributes of the Absolute to the empirical linguistic picture of the world. The object of the study is the chromatic encoding of nine attributes of the Absolute, represented in the form of a mandala-like diagram with the central symbol 'A'. The scientific novelty of the work lies in the fact that English colour phraseology is examined for the first time not in isolation, but through the lens of a specific combinatorial-logical model (Llull's circles), which allows us to reveal the deep mechanisms underlying the transfer of transcendent categories into the pragmatics of everyday language. We thereby show that the English language, refracting the ideal Llullian spectrum through the prism of utilitarian pragmatism and anthropocentric experience, creates a semantically contradictory picture of the world in which transcendent attributes undergo reduction, inversion, or functionalisation.

Keywords: Colour semantics; Cognitive linguistics; English idioms; Ontological model; Semiotics; Ramon Llull's logical machine; Combinatorics

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Научная статья

Хроматическая репрезентация онтологических атрибутов: Английские цветовые фразеологизмы в свете *Ars Magna* Раймунда Луллия

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Аннотация
В 1937 году Хорхе Луис Борхес написал характерную для него загадочную историческую заметку и литературное размышление под названием «Мыслящая машина Раймунда Луллия». Это произошло в тот самый год, когда концепция «мыслящих машин» получила мощный импульс благодаря разработке Говардом Эйкеном механического компьютера Mark I, который впоследствии эволюционировал в электронный Mark IV. За 85 лет до появления ChatGPT (выпущенного в 2022 году) Борхес обращается к событиям 650-летней давности, анализируя великое искусство Раймунда Луллия, включающее в себя ars inveniendi (искусство изобретения) и ставшее с тех пор источником вдохновения для рационалистических спекуляций. Наряду с шестью эссе, которые рассматривают современные обучающиеся машины через призму Борхеса, данная исследовательская работа адаптирует подход Луллия, чтобы предложить лингвосемиотический анализ английских фразеологических единиц с цветообозначением. Цель работы – выявить механизмы, посредством которых сакральные хроматические коды трансформируются в прагматические значения английских идиом, а также установить типологические закономерности перехода от метафизических атрибутов Абсолюта к эмпирической языковой картине мира. Объектом исследования является хроматическая кодировка девяти атрибутов Абсолюта, представленная в виде мандалообразной схемы с центральным символом “A”. Научная новизна работы состоит в том, что английская цветовая фразеология впервые рассматривается не изолированно, а сквозь призму конкретной комбинаторно-логической модели (круги Луллия), что позволяет выявить глубинные механизмы перевода трансцендентных категорий в прагматику повседневного языка. Тем самым мы показываем, что английский язык, преломляя идеальный луллиевский спектр через призму утилитарного прагматизма и антропоцентрического опыта, создаёт семантически противоречивую картину мира, в которой трансцендентные атрибуты подвергаются редукции, инверсии или функционализации.

Ключевые слова: Цветосемантика; Когнитивная лингвистика; Английские идиомы; Онтологическая модель; Семиотика; Логическая машина Р. Луллия; Комбинаторика

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INTRODUCTION

The interaction between language and colour constitutes a complex semiotic mechanism in which the chromatic code functions not merely as an optical phenomenon but as a vehicle for deep cultural and ontological meanings that are codified in stable phraseological units (PUs) (Berlin & Kay, 1969; Wierzbicka, 1996). In the present study, we employ an ontological wheel with colour designations, constructed on the principle of Ramon Llull's logical machine, in order to determine the combinatorial logic underlying the meanings of the PUs under analysis. The adapted wheel was developed on the basis of semiotic and etymological analysis of English colour designations (Komanova, 2018).

The object of the study is the chromatic (colour) encoding of attributes within a universal ontological model structurally derived from the combinatorial logic of Ramon Llull's *Ars Magna*.

The aim of the study is to trace how ideal ontological categories embedded in the colour segments of the Llullian scheme are refracted in the semantics of English colour-based PUs, and so to classify the identified types of semantic transformation.

The image under analysis has a mandala-like structure, at the centre of which lies the symbol 'A' (traditionally interpreted as Alpha, the Absolute, the Primal Unity), connected by a network of geometric links to nine higher-order attributes. Each attribute is visualised through a specific colour segment (Figure 1).

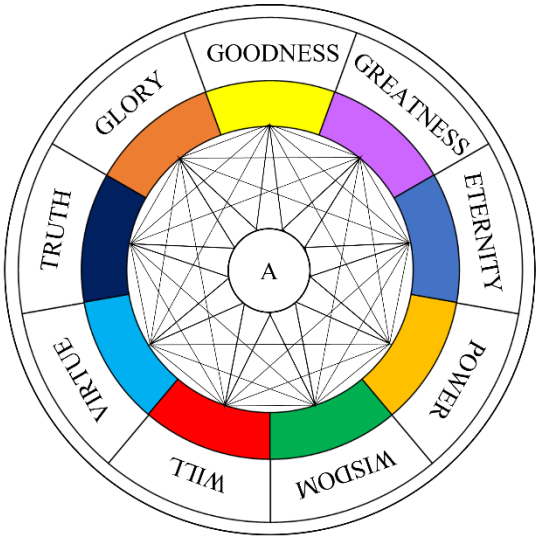


Figure 1. Llullian chromatic scheme: nine attributes of the Absolute encoded in spectral colours

The image in question is, in essence, a modern Neoplatonic or theological variant of such a 'Llullian circle', in which abstract letter symbols are replaced by chromatic markers (colours) to denote the fundamental properties of the Absolute (Yates, 1966; Duncan, 2012).

A fundamental law of physical optics is essential for interpreting this structure: white light is a superposition of all wavelengths in the visible spectrum. Thus, white functions not merely as one colour among others but as a total synthesis – a physical

metaphor for the Absolute (Deutscher, 2010). Consequently, the central circle 'A' symbolises primordial white light, which, refracted through the prism of cultural and linguistic consciousness, breaks down into nine spectral attributes.

Chromatic Emanation and Combinatorial Logic

The correlation between spectral segments and attributes of the Absolute derives from a synthesis of Neoplatonic emanation theory, medieval physics of light (*lux et color*), and the socio-economic history of pigments. Following Pseudo-Dionysius the Areopagite and Robert Grosseteste, light was regarded as the primary substance of the spiritual world, with colour functioning as a state of light's interaction with matter – energy descending from the Absolute into empirical reality. The physical properties of each spectral segment (wavelength, temperature, material availability) thus determined its ontological weight.

The chromatic scheme encodes the following ontological attributes within its respective spectral segments:

White (the Absolute) is the synthesis of the entire spectrum, undifferentiated totality. In medieval aesthetics, radiance was a transcendental property of being, making white synonymous with the Absolute's unity before refraction. Ontologically, the Absolute is the undifferentiated plenitude from which all attributes emanate, which precisely corresponds to the comprehensive, composite, and pre-refractive nature of white.

Yellow (Goodness/*Bonitas*) is the most luminous spectral colour, closest to white and gold. In iconography the golden background symbolised divine light and goodness, so yellow as "materialised light" logically encodes Bonitas – the first emanation, the good pouring forth from the Absolute.

Red (Will/*Voluntas*) is associated with heat, blood and action. In humoral theory, sanguine blood was responsible for passion and movement, while the historical costliness of crimson dyes secured red's status as the marker of active, driving force and will. Ontologically, will is the active, passionate energy directed outward, which precisely corresponds to the "hot" nature of red (Bolotina & Shabasheva, 2013).

Blue (Eternity/*Aeternitas*) is associated with depth, distance, and the boundless vault of the sky. In medieval physics of light, blue was the colour of the visible heavens, the limit of human sight and the threshold of the divine. Ontologically, eternity is not frozen stillness but infinite, open duration, which precisely corresponds to the receding, ungraspable nature of blue.

Purple/Violet (Greatness/*Magnitudo*) is associated with majesty, exclusivity, and the liminal zone of the spectrum between visible light and invisible ultraviolet. Historically, Tyrian purple was extracted from murex shells in minute quantities, making it the most labour-intensive and costly dye of antiquity, accessible only to emperors and the highest nobility; its rarity secured its meaning of supreme authority and sacral power. Ontologically, greatness is not mere force but elevated, legitimate sovereignty, which precisely corresponds to the rare, regal, and boundary-crossing nature of violet.

Green (Wisdom/*Sapientia*) is the colour of vegetation, the natural cycle, and equilibrium. In the metaphysical tradition, contemplation of the "Book of Nature" led to

wisdom, so green marks *Sapientia* – the immanent, self-sustaining law of being. Although in everyday language green often signifies immaturity, in the ontological model it retains its original meaning of wisdom as perfect order.

Orange (Glory/*Gloria*) marks the spectral intermediate between red (Will) and yellow (Goodness), embodying the transitional stage at which latent force is converted into visible beneficence, as exemplified by dawn and incandescent embers. The colour corresponds to *Gloria* as radiance emanating from the Absolute. The historical "youth" of orange as an independent colour term explains why its place is often taken by red in linguistic practice, but it occupies its own unique position in the ontological scheme.

Light Blue/Cyan (Virtue/*Virtus*) is associated with clarity, purity, and the moderation of absolute will. Visually, light blue is produced by diluting dark blue with white light, just as virtue tempers eternal truth for action within time. Ontologically, virtue is not a passive moral quality but the active realisation of truth in human action within time; this corresponds to the brighter, more transparent, and temporally engaged character of cyan.

Dark Blue/Ultramarine (Truth/*Veritas*) is associated with stability, incorruptibility, and the deep night sky. Historically, ultramarine was derived from lapis lazuli and was both costly and chemically stable, resisting fading and alteration over time; this material invariability rendered it a natural signifier of that which cannot be falsified or corrupted. Ontologically, truth is the unchanging structure underlying infinity, which precisely corresponds to the dense, saturated, and unalterable quality of dark ultramarine (Lakoff & Johnson, 1980).

Golden (Power/*Potestas*) is simultaneously colour and substance. Historically and alchemically, gold symbolised incorruptibility, supreme value, and perfection. Its rarity, immutability, and universal exchangeability make it the absolute sign of *Potestas* – organised, legitimate authority, both divine and earthly (Berlin & Kay, 1969; Kuzmin, 2022).

The internal lines of Llull's *Ars Magna* connecting the points on the ring of attributes are a key philosophical element of the diagram. They symbolise universal interconnectedness. The central idea of this scheme is that all these nine attributes do not exist independently, but originate from a single centre, which underscores the idea of monism. The lines show that one cannot separate Will from Wisdom, or Truth from Goodness – they all issue from one common source. Will becomes Virtue only if it is directed toward the Absolute. Otherwise, Will degenerates into evil, and Virtue into hypocrisy. It should also be noted that pairwise combination generates derived concepts, such as Will + Wisdom = Strategy; Will + Truth = Just Struggle; Virtue + Glory = Heroism; Goodness + Eternity = Paradise and so on (Duncan, 2012).

The present study offers an observation of how this ideal ontological spectrum is refracted in the pragmatics of English PUs. From the standpoint of modern linguistics and cognitive semantics, this scheme serves as a bridge between transcendental reality and the empirical experience codified in language (Lakoff & Johnson, 1980; Kövecses, 2010).

The task of this work is to decode these colour markers through the lens of English PUs, revealing how a universal chromatic code is transformed into culture-specific concepts.

MATERIALS AND METHODS

The empirical material for analysis comprises English PUs containing colour terms in their lexical composition. The selection of PUs was carried out by means of continuous sampling from authoritative lexicographic sources, including *The Oxford Dictionary of English Idioms*, *The Cambridge International Dictionary of Idioms*, and *The American Heritage Dictionary of Idioms*, as well as through data from the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA) for the verification of frequency and contextual usage.

The study comprises three successive stages:

1. Structural-semiotic stage: the first stage involves deciphering the visual diagram presented. Its structural similarity to Llull's combinatorial circles is determined, and correlations are established between specific colour segments and their ascribed ontological attributes. This stage enables the creation of a theoretical matrix for subsequent comparison (Bolotina & Shabasheva, 2013; Urvantseva, 2019).
2. Lexico-semantic and etymological stage: the second stage entails a detailed semantic analysis of each selected English PU. The method of componential analysis is applied, allowing the meaning of an idiom to be broken down into semantic components (semes). Etymological analysis is employed in parallel to reconstruct the historical conditions under which particular colour meanings emerged. This stage permits the tracing of vectors of semantic evolution (Sweetser, 1990).
3. Comparative-typological stage: the third stage is pivotal to the present study and involves the superimposition (comparison) of the obtained phraseological semantics onto the original ontological matrix (Abdullaeva, 2024).

RESULTS AND DISCUSSION

The Chromatic Segment 'White' ('Absolute')

Of particular note is the colour white, which in the presented model functions not as a separate attribute but as a total chromatic synthesis, a metaphor for the Absolute itself, from which all other spectral segments emanate (Yates, 1966).

In English phraseology, the colour white similarly reflects this axiological complexity. On the one hand, it retains the semantics of supreme purity, as manifested in the idioms *white as snow* (pure, immaculate) and *white lie* (a paradoxical expression in which purity of intention mitigates a moral transgression). On the other hand, in contrast to its sacral symbolism, *white* in the English linguistic picture of the world also undergoes pragmatic inversion, as expressed in the phrase *white flag* (a symbol of surrender, of relinquishing will) and *white-knuckle* (a state of extreme tension or fear) (Wierzbicka, 1996).

The Chromatic Segment 'Yellow' ('Goodness')

In the ontological scheme presented, the colour yellow marks the attribute of 'Goodness' (also termed 'Benevolence'; in Latin, *Bonitas*).

Corpus-based and etymological analysis of English PUs reveals that, in contrast to the Russian cultural paradigm, where yellow retains connotations of sacrality (gold, halo), the English language exhibits a dominant somatic code linking the colour to bodily and physiological processes. The most representative unit here is the idiom *yellow-bellied* (Gibbs, 1994).

The etymology of this PU traces back to medieval medical and folk beliefs concerning humoral pathology. It was held that diseases of the liver or gall bladder caused not only yellowing of the skin but also concomitant physical weakness and loss of spirit. Thus, the elevated spiritual meaning of 'Goodness' encoded in the scheme undergoes, in the English linguistic picture of the world, semiotic inversion and reduction to physiological infirmity, and subsequently to a psychological characteristic (cowardice). This process may be characterised as a transition from an ontological (existential, divine) status to an empirical and pragmatic one (Cacciari & Glucksberg, 1995).

Another significant vector of semantic shift is the PU *yellow leaf* (*sere and yellow leaf*). This expression belongs to the phytonymic code: the leaf functions as a botanical indicator of vital force, a minimal unit of organic life whose chromatic state directly encodes the phase of its lifecycle. Whereas green foliage symbolises the exuberance of life, fertility, and vegetative vigour (correlating with the green segment 'Wisdom' in the scheme, where natural order is at its equilibrium), yellow acquires the semantics of chlorophyll depletion, senescence, and the termination of organic processes. Consequently, 'Goodness' as a divine life-giving force is in this PU entirely neutralised, giving way to the semantics of barrenness and stagnation.

Thus, the phraseological representation of the colour yellow in English offers a striking example of the desacralisation of a colour symbol. The metaphysical 'Goodness' inherent to the chromatic code in the original scheme (characteristic of Llullian combinatorics) is replaced in the national linguistic consciousness by concrete vital and corporeal connotations.

The Chromatic Segment 'Purple' ('Greatness')

In our ontological model, the colour purple (violet) marks the attribute of 'Greatness' (also termed 'Majesty'; in Latin, *Magnitudo*). In contrast to the yellow segment analysed above, where a pronounced semantic reduction (desacralisation) was observed, the purple segment exemplifies a case of lexico-semantic isomorphism – an almost complete correspondence between the ontological meaning of the colour in the diagram and its empirical codification in English phraseology.

In antiquity and the early Middle Ages, the production of purple dye was an extremely labour-intensive and costly process, which conferred upon the colour a high economic and symbolic value, making it exclusively the prerogative of the highest strata of society. Thus, purple historically became established as a symbol of imperial power (supreme state and spiritual authority), a fact directly reflected in the semantics of the PUs *born in / to the purple* and *purple prose*. In the former case, the idiom represents a

metonymic transfer – purple clothing as an indispensable attribute of power, signifying power itself and hereditary belonging to it. In the latter case (*purple prose*), the grandeur and elevation of the colour are transposed to the level of linguistic form, creating a metaphor of 'elaborateness worthy of the royal court' (Borg, 1999).

Thus, in this instance, we observe a case where the physical rarity and costliness of the material dye ensured the ideal preservation of the ontological attribute in colloquial language.

The Chromatic Segment 'Blue' ('Eternity')

In the model of Llull's logical machine under investigation, the colour blue functions as the representative of the attribute 'Eternity' (in Latin, *Aeternitas*). Unlike the purple segment, which demonstrated isomorphism between sacral and linguistic meanings, the colour blue undergoes semantic fragmentation and anthropomorphic reduction, as a result of which the single transcendent concept is split into several independent or contrasting idiomatic meanings.

The corpus of English PUs with the component *blue* represents three semantic vectors ultimately traceable to the idea of spatiotemporal infinity. The idioms *out of the blue* and *once in a blue moon* actualise the aspects of suddenness and rarity, preserving a connection with the cosmic scale. By contrast, the PU *feeling blue* demonstrates anthropocentric semantic derivation: unlike in many cultures where sadness is associated with black or grey, the English language's fixation of melancholy upon blue is conditioned by the historical usage of *blue devils* – a term for melancholic despondency (Kövecses, 2010).

This process demonstrates how language, refracting the ideal (Llullian) spectrum through the prism of everyday, historical, and psychological reality, creates a markedly contradictory semantics.

The Chromatic Segment 'Orange' ('Glory')

The study establishes that the orange spectral segment functions as a chromatic marker for the attribute 'Glory' (in Latin, *Gloria*). This chromatic coding is logically grounded in the symbolic tradition, where orange is associated with fire, dawn, and visible energy radiation, correlating with 'glory' as a manifested emanation of the Absolute. However, transitioning from the metaphysical schema to the English phraseological corpus reveals a lexico-semantic lacuna, filled through chromatic contamination.

The absence of idioms with the lexeme *orange* in the meaning of 'glory' is explained historically. As a late colour designation, orange entered the English lexicon in the Late Middle Ages as the name of the fruit, only later acquiring spectral meaning. Thus, it failed to become entrenched in archaic phraseology formed in earlier periods (Urvantseva, 2019).

Since the concept of 'Glory' as boisterous success and energy required linguistic representation, English phraseology filled the lacuna through contamination with red. The idiom *to paint the town red* is most representative, denoting riotous celebration and the acquisition of fame through active social engagement (Abdullaeva, 2024).

In Modern English, *orange* has lost its sacral connection to 'Glory' and become entrenched in pragmatic contexts, as in *orange alert* (a marker of warning) and *orange crush*. The former signals a shift from ontological symbol to functional sign, divesting the colour of metaphysical depth.

This case illustrates the principle of linguistic relativity: the semantics of "young" colours are governed by utilitarian pragmatics rather than metaphysics (Deutscher, 2010).

The Chromatic Segment 'Dark Blue' ('Truth')

In the presented ontological model, the dark blue (ultramarine) colour marks the attribute 'Truth' (in Latin, *Veritas*). This chromatic code symbolises the profound, unshakable foundation of the universe, which remains immutable regardless of shifting historical epochs or cultural contexts. In contrast to the previously examined segments, which demonstrated semantic fragmentation (*blue*) or contamination (orange), the dark blue segment represents a case of lexico-semantic isomorphism.

The most representative PU of this chromatic segment is the PU *true blue*. In contemporary English, it is used to characterise a person distinguished by absolute loyalty, sincerity, and reliability. From an etymological perspective, this PU represents a metonymic transfer: the physical property of a fast dye (colour stability) was projected onto a moral characteristic of a person (steadfastness in fidelity and truthfulness). It is important to note that, in contrast to the idiom *feeling blue*, where the meaning of the colour blue derives from the context of maritime voyages and the melancholy associated with them, *true blue* has a direct material basis that has been retained in the language for several centuries and continues to be actively employed in contemporary discourse.

The metaphysical 'Truth' embedded in the schema as the eternal and indestructible foundation of being has found its complete linguistic embodiment in the PU *true blue*. This instance serves as a compelling example of how practical, artisanal experience, namely, the fastness of a dye, can become the cognitive foundation for the entrenchment of an abstract ontological concept within the lexical system of a language. Thus, the idiom *true blue* preserves the historical memory of the material properties of the pigment, transforming them into a stable symbol of truth and fidelity that fully correlates with the attribute 'Truth' as presented in the ontological model under investigation.

The Chromatic Segment 'Light Blue' ('Virtue')

In the ontological model we have presented, the light blue (cyan) spectral segment marks the attribute 'Virtue' (in Latin, *Virtus*). Whereas dark blue symbolises the static, unshakable foundation of the universe, the light blue hue denotes the process of continuously unfolding being, the dynamic actualisation of divine will and moral justice over time. However, upon transitioning from the metaphysical model to empirical linguistic consciousness, as registered in English phraseology, this segment exhibits a lexico-semantic lacuna.

Analysis of the English idiom corpus featuring the lexemes *light-blue, sky-blue,* or *cyan* reveals that these colour designations lack fixed phraseological meanings within the sphere of morality or ethics. The semantic lacuna in this segment is filled through several indirect pathways. First, the concept of virtue and divine justice in English is often

conveyed through metaphors of light (*to walk in the light*), which are not colour-specific. Second, light blue is associated with the height and purity of the sky or water, which is occasionally actualised in periphrastic expressions such *as pure as the driven snow*. Here, however, the dominant chromatic code is white, which corresponds to the Absolute at the centre of the spectrum, thereby underscoring the significance of white rather than light blue in this semantic domain.

Another example illustrating the displacement of meaning is the PU *blue-sky thinking*. Although this expression is employed in contemporary corporate discourse to denote unbounded, creative thinking, it carries no ethical or religious connotation of 'Virtue'; rather, it points to the absence of practical constraints. This confirms that, in English, the colour light blue is semantically shifted from the sacred domain into the sphere of human cognition and creativity, while the category of moral purity remains without any chromatic encoding.

Thus, the schema, which represents a universal metaphysical construct in the tradition of R. Llull, incorporates light blue as a fundamental attribute, whereas English phraseology leaves this concept outside the bounds of its chromatic semantics (Wierzbicka, 1996).

The Chromatic Segment 'Red' ('Will')

In the ontological model, the red spectral segment refers to the attribute 'Will' (in Latin, *Voluntas*). This chromatic code represents one of the most semantically dense segments in English phraseology, demonstrating an almost complete correlation between the ontological meaning of the colour in the schema and its linguistic entrenchment. In contrast to the light blue segment, where a lexical lacuna was observed, red exhibits a stable connection to the concept of will, realised through the somatic code and affective states.

The corpus of English idioms featuring the lexeme *red* represents three vectors, reflecting different aspects of will. The idiom *red-blooded* accentuates vital energy, implementing a metonymic transfer of 'blood – inner driving force', which correlates with the attribute 'Will'. The idiom *to see red* denotes the affective manifestation of will in the form of an impulsive reaction. The idiom *red tape* actualises the institutional aspect of will as formalised, impersonal bureaucratic authority (Urvantseva, 2019).

Thus, the colour red in English phraseology retains the semantics of an active, driving force, manifesting at the biological, emotional, and social levels. This fact supports the hypothesis that colours associated with fundamental biological processes possess the greatest semantic stability in the transition from metaphysical models to empirical language (Bolotina & Shabasheva, 2013).

The Chromatic Segment 'Green' ('Wisdom')

According to the ontological model we have developed, the spectral segment green represents the attribute 'Wisdom' (in Latin, *Sapientia*). The presented schema considers green to be a marker of maturity of both flesh and spirit, whereas the English language encodes it with the meaning of immaturity, inexperience, and lack of knowledge.

The explanation for this inversion lies in a fundamental distinction between two cognitive paradigms: the ontological (contemplation of nature as a perfect order, characteristic of theology) and the anthropocentric (evaluation of nature through the prism of human utility, characteristic of pragmatic linguistic consciousness) (Gibbs, 1994).

The corpus of English idioms containing the lexeme *green* demonstrates a direct correlation with the anthropocentric archetype of immaturity. The idiom *greenhorn,* for instance, actualises a component of green, denoting inexperience and naivety. Etymologically linked to the unhardened horns of a young animal, it marks an early stage of development. In the ontological scheme, it inverts the 'Wisdom' attribute of the green segment, signifying instead the absence of sapiential knowledge. Another idiom *green with envy* actualizes a negative component in the semantics of *green*, associating it with the psychosomatic response of the organism to emotional imbalance (specifically, envy). In the context of the analysis, this likewise constitutes a form of immaturity, an absence of wisdom that would enable one to overcome envy.

This case vividly demonstrates that English linguistic consciousness operates with the category of linear time and human maturation (from green to ripe), whereas the metaphysical schema operates with the category of cosmic cyclicality, in which natural wisdom is inherently immanent. This divergence illustrates a fundamental principle of semantic relativity: ontological attributes embedded in the universal Llullian schema, upon transfer into a national language, undergo changes in accordance with the utilitarian, anthropocentric experience of human activity (Deutscher, 2010).

The Chromatic Segment 'Golden' ('Power')

The golden spectral segment marks the attribute 'Power' (in Latin, *Potestas*). In the theological and alchemical traditions, gold has served as a universal symbol of absolute material and spiritual power, indestructibility, and supreme perfection. In contrast to the previously analysed segments, where green exhibited complete inversion and orange demonstrated contamination, this chromatic segment displays full lexico-semantic isomorphism. English phraseology not only preserves but actively exploits the archaic connection between gold and the category of supreme power, fully correlating with the attribute 'Power' in the schema under investigation.

The semantic stability of gold in the English language is determined by the unique combination of its physical and economic properties. Throughout human history, gold has functioned as a universal equivalent of value, an archetypal measure of power and control. In the medieval alchemical tradition, gold was regarded as the ultimate goal of transmutation (the philosopher's stone), which entrenched its semantics of supreme spiritual achievement. Thus, the history of material culture and economics secured for gold the status of an indisputable symbol, transferred without alteration into the lexical and phraseological structures of language (Borg, 1999).

The corpus of English idioms featuring the lexeme *golden* demonstrates three semantic vectors associated with the attribute 'Power'. The idiom *the golden rule* functions as a metaphor of axiological non-negotiability, denoting a fundamental moral principle that holds absolute authority over behaviour. The idiom *golden opportunity*

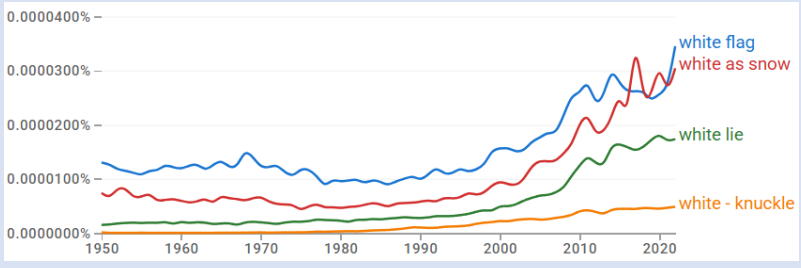
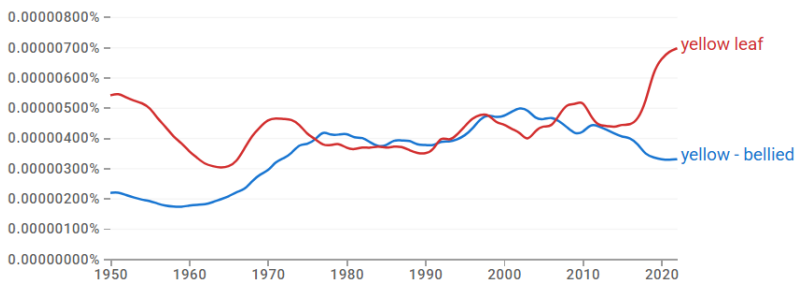
actualizes the aspect of situational power, representing a unique chance that grants the subject full control over their own future. The idiom *silence is golden* represents the highest form of control through restraint: silence as an inexhaustible and unquestionable resource is endowed with semantic force comparable to gold.

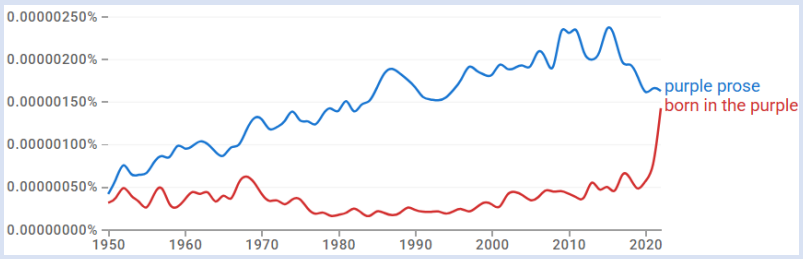
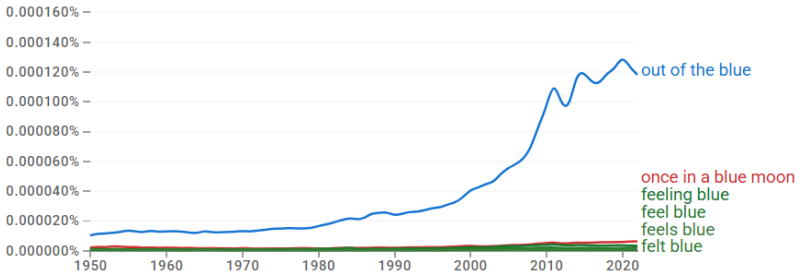
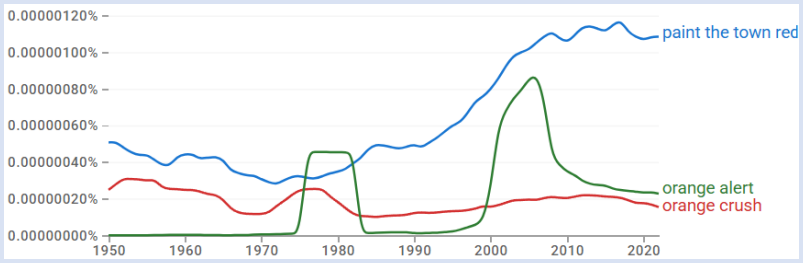
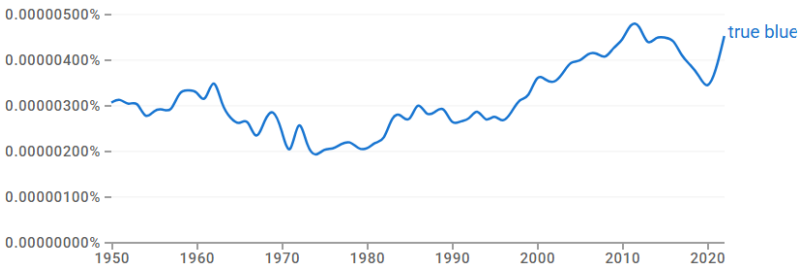
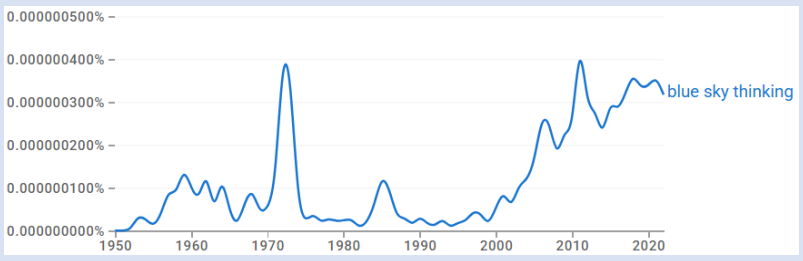
The golden segment represents a case of archetypal isomorphism conditioned by extralinguistic factors. This fact confirms that the material properties of gold, indestructibility, rarity, universality, have created an indissoluble cognitive link between the physical object and the metaphysical attribute 'Power', which persists in the language across centuries without signs of semantic degradation (Berlin & Kay, 1969).

Frequency Analysis

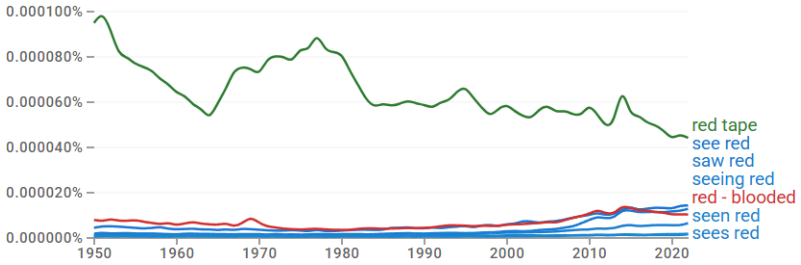
To complement the linguosemiotic analysis, a preliminary overview of the diachronic frequency of the identified idioms was conducted using Google Ngram Viewer (English 2024 corpus https://books.google.com/ngrams/info , spanning 1950–2022). The corresponding queries included up to four different PUs. Query strings were formulated according to the standard syntax of Google Ngram Viewer: for instance, the hyphenated PU *white-knuckle* was formulated as *[white – knuckle]*, whereas verbal phrases were analysed using the inflection search function as *feel_INF blue* (displaying results for *feel blue*, *feels blue*, *feeling blue*, and *felt blue*). The smoothing was set at 3. The analysis aimed to assess whether the idiomatic productivity of each colour term correlates with its overall usage frequency in written English. Table 1 presents the identified patterns for the colours under investigation.

Table 1. Diachronic frequency patterns of colour-based PUs in English (Google Ngram Viewer, 1950–2022)

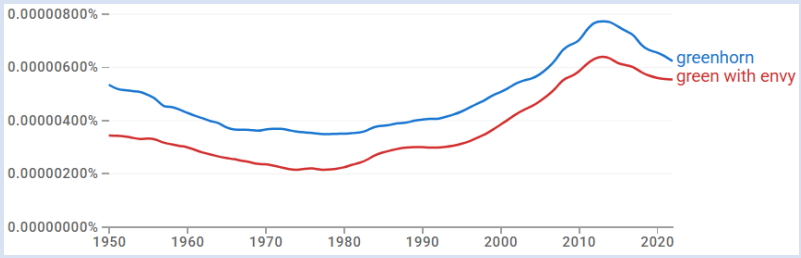
Colour / Attribute	Frequency pattern
White / Absolute	
Yellow / Goodness	

Purple / Greatness	
Blue / Eternity	
Orange / Glory	
Dark Blue / Truth	
Light Blue / Virtue	

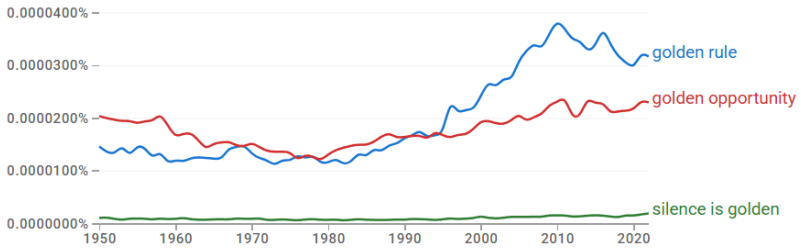
Red / Will



Green / Wisdom



Golden / Power



The data reveal two notable patterns. First, idioms with strong cultural or political associations (*white flag*, *purple prose*, *red tape*) exhibit the most pronounced volatility, with red tape showing a clear long-term decline since the 1950s, while *white lie* and *purple prose* have surged in the 21st century. Second, similes and fixed expressions (*white as snow*, *silence is golden*) remain consistently low-frequency or stagnant, suggesting they are peripheral to productive idiomatic creativity. However, these frequency trends are offered as a general indicator of written usage and are not treated as definitive measures of lexical salience.

CONCLUSION

The findings of the present study demonstrate that the relationship between chromatic codes and abstract ontological categories is far from arbitrary, being mediated by a complex interplay of cultural, historical, and material factors. The conducted research allows for the formulation of a number of generalising conclusions. It has been established that the chromatic schema, based on the combinatorial logic of the *Ars Magna* and the physical metaphor of white light as spectral synthesis, serves as an idealized matrix in which each colour segment corresponds to a specific attribute of the Absolute. However, upon transitioning from metaphysics to empirical language, this structure undergoes substantial transformations.

The analysis has identified four types of semantic correlations:

- lexico-semantic isomorphism (purple, dark blue, golden), where the colour retains its ontological meaning owing to extralinguistic factors;
- semantic inversion (green), where the language assigns to the colour the opposite meaning due to the anthropocentric code of maturation;
- semantic fragmentation (blue), where a unified concept is split into several independent meanings;
- lexico-semantic lacuna with chromatic contamination (orange, light blue), conditioned by the chronological asymmetry in the entry of colour designations into the language.

The study further confirms that the degree of semantic stability of PUs is directly dependent on the colour's connection to fundamental material or biological processes: red ('Will') demonstrates complete isomorphism, whereas "young" colours (orange) undergo functionalisation.

The Llullian chromatic matrix is not positioned as an alternative to existing analytical approaches, but rather serves as an interpretive superstructure over corpus analysis data. The chromatic matrix can serve as a testbed for comparative evaluation of large language models (LLMs), which are trained on different corpora and with different alignment strategies. Their ability to reproduce the identified types of correlation (isomorphism, inversion, fragmentation, and lacuna/contamination) can be examined in future research. This would make it possible to complement the qualitative ontological interpretation with quantitative, model-based evidence and to determine which colour–attribute links are robust across languages, model architectures, and training data.

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